

biochemical society

---

# **TRANSACTIONS**

## **669th Meeting, University of Keele**

Colworth Medal Lectures

**Structural Studies of Reversible Protein Phosphorylation  
and Protein Phosphatases**

**Enzymes in the Quantum World**

colloquia

**Molecular Control of Apoptosis**

**Structure and Function of A-Domains**

**Gene Therapy: from Bench to Bedside**

**Expression and Purification of Membrane Proteins**

---

■ *Biochemical Society Transactions* (ISSN 0300-5127) is published by Portland Press Ltd on behalf of the Biochemical Society. Three parts contain the lectures and colloquia presented at a meeting of the Biochemical Society or one of its constituent interest groups and, occasionally, the colloquia of other scientific meetings of biochemical interest held in the U.K. or elsewhere. Three parts contain abstracts of the presentations at the Biochemical Society's meetings. Submitted primary research papers are not published and authors are reminded that detailed presentation of new experimental data may prejudice its subsequent publication in precisely that same form elsewhere. Lectures and colloquium contributions are published subject to editorial acceptance and authors will be issued with instructions on the format of their article before the meeting. Authors intending to present posters at Society meetings should consult the instructions for authors which appear with the Society's membership journal, *The Biochemist*.

- 
- For information about the advantages of membership of the Biochemical Society, contact the Executive Secretary, The Biochemical Society, 59 Portland Place, London WIN 3AJ, U.K. (telephone 020 7580 5530).
  - Editorial and publishing office: *Biochemical Society Transactions*, 59 Portland Place, London WIN 3AJ, U.K. (telephone 020 7637 5873; fax 020 7323 1136; e-mail [editorial@portlandpress.com](mailto:editorial@portlandpress.com)).
  - Royal Mail International, c/o Yellowstone International, 87 Burlews Court, Hackensack, NJ 07061, U.S.A.
- 

### Subscription rates

■ Subscriptions department: Portland Press, P.O. Box 32, Commerce Way, Colchester CO2 8HP, U.K. (telephone 01206 796351; fax 01206 799331; e-mail [sales@portlandpress.com](mailto:sales@portlandpress.com)). Subscription rates for volume 28, parts 1–6 (2000):

	North America	Rest of world
Volume 28	\$305.00	£178.00
Single issues	\$80.00	£48.00

Subscribers to the *Biochemical Journal* may take a joint subscription to that journal and to *Biochemical Society Transactions*, saving \$26 (North America) or £16 (rest of world), or to *Biochemical Society Transactions* and *Biotechnology and Applied Biochemistry*, saving \$34 (North America) or £20 (rest of world). North American subscription rates include airfreight delivery, and those for Japan include Accelerated Surface Post; other overseas locations are serviced by surface mail. Air-speeded delivery is available at extra cost (please ask for details). Back issues are available.

---

- All rights reserved. Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act, 1988, this publication may be reproduced, stored or transmitted, in any form or by any means, only with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms of permissions granted by the copyright clearing houses such as the Copyright Licensing Agency (U.K.) or the Copyright Clearance Center (U.S.A.). The CCC item-fee code for this publication is 0300-5127/1999/\$16.00+0.00. Inquiries concerning reproduction outside those terms should be sent to the publishers at the London address.
  - Although, at the time of going to press, the information contained in this publication is believed to be correct, neither the authors nor the publisher nor the editor assume any responsibility for any errors or omissions herein contained.
  - Display advertising is accepted; information is available on request from the London office of Portland Press.
  - Periodicals postage paid at Rahway, NJ, and at additional mailing offices.
  - Postmaster: send address changes to *Biochemical Society Transactions*, c/o Mercury International, 365 Blair Street, Avenel, NJ 07001.
  - Printed in Great Britain by the University Press, Cambridge.
-

# Index of authors

<b>A</b> negon, I. 864	<b>F</b> akhouri, H. 821	<b>L</b> iu, J. 832	<b>S</b> egat, D. 824
Annenkov, A. 869	Falson, P. 917	Loewen, M. C. 950	Seymour, L. W. 851
Askin, D. 917	Farrow, S. N. 812	Logan, A. 851	Shah, B. 790
Averbeck, P. 899	Ferguson, S. M. 893	Lowenstein, P. R. 858,	Shuttleworth, A. 821
	Flachmann, R. 923	873	Smith, S. O. 950
	Froud, D. 864		Smith-Arica, J. 858
<b>B</b> aird, A. 851	<b>G</b> etmanova E. V. 950	<b>M</b> acCarthy-Morogh, L.	Smyth, N. 824
Baker, D. 869	Gonzalez, A.-M. 851	785	Sohal, A. K. 899
Baldock, C. 821	Gould, D. 869	Maier, K. 908	Soullou, J.-P. 864
Ball, S. 821	Greenfield, J. J. A. 883	Martin, G. E. M. 893	Steel, A. 893
Barford, D. 751	Grisshammer, R. 899	Mayne, R. 832	Stephens, R. 781
Barrett, L. B. 851	Groves, J. D. 917	McCann, E. 841	
Berenstein, M. 869	Groves, M. A. T. 893	McKeown, B. J. 893	<b>T</b> anner, M. J. A. 917
Bernard, A. R. 955	Guillot, C. 864	Meacock, S. L. 883	Tate, C. G. 932
Berry, M. 851	<b>H</b> am, J. 790	Millar, N. S. 944	Tesson, L. 864
Betenbaugh, M. J. 932	Hedge, V. L. 797	Miroux, B. 888	Thomas, C. 873
Bingle, C. 802	Henderson, P. J. F. 893	Moullier, P. 864	Thomas, C. J. 928
Blasey, H. D. 955	High, S. 883	Mouzakiti, A. 785	Thomas, J. 841
Bovee-Geurts, P. H. M.	Hinshelwood, J. 815	<b>N</b> arayana, S. 832	Townsend, P. 785
937	Hogg, N. 826	Neame, S. J. 790	Trowsdale, J. 781
Brimmell, M. 785	Hovius, R. 955	<b>O</b> liver, J. D. 883	Tuckwell, D. 835
Buchanan, S. K. 903	Hoyle, C. K. 893	O'Reilly, J. 893	<b>U</b> sal, C. 864
<b>C</b> arson, M. 832	<b>J</b> enkins, P. V. 815	<b>P</b> ackham, G. 785	<b>V</b> acher, D. 888
Castro, M. G. 858, 873	<b>K</b> aye, J. F. 841	Palmer, S. L. 893	Vekrellis, K. 790
Chadwick, D. 841	Khorana, H. G. 950	Parker, M. D. 917	Venter, H. 893
Chemajovsky, Y. 869	Kiefer, H. 908	Paulsson, M. 824	Vogel, H. 955
Clough, J. L. 893	Kiely, C. M. 821	Pecqueur, C. 888	Vogel, R. 908
Coathalem, H. 864	King, L. A. 928	Perkins, S. J. 815	<b>W</b> agener, R. 824
Cook, T. 832	Klaassen, C. H. W. 937	Piecha, D. 824	Ward, A. 893
Cowen, R. 873	Klein-Seetharaman, J.	Podhajcer, O. 869	Whiteley, E. 932
Croxford, L. 869	950	Poolman, B. 912	Whitfield, J. 790
Cuturi, M. C. 864	Knol, J. 912	Possee, R. D. 928	Whyte, M. 802
<b>D</b> aly, G. 869	<b>L</b> atchman, D. S. 847	<b>R</b> abinovich, G. A. 869	Williams, G. T. 797
David, A. 864	Lawson, R. 802	Reeves, P. J. 950	Windeatt, S. 858
Dawson, C. W. 807	le Maire, M. 917	Ren, Z.-X. 832	Wood, J. M. 893
DeGrip, W. J. 937	Le Mauff, B. 864	Renshaw, S. 802	<b>X</b> ie, H. 893
Dorman, N. 841	Leitinger, B. 826	Rich, T. 781	<b>Y</b> ing, W. 851
Dreja, H. 869	Lever, A. M. L. 841	Roberts, P. E. 893	Young, L. S. 807
<b>E</b> dwards, Y. J. K. 815	Liang, W.-j. 893	Rutherford, N. G. 893	<b>Z</b> hao, J. 841
Eilers, A. 790	Litherland, G. J. 893	<b>S</b> crutton, N. S. 767	
Eilers, M. 950			
Eliopoulos, A. G. 807			

- Abel, A.**, *See* Kalkbrenner, F.  
**Abrahams, J. P.**, *See* Leslie, A. G. W.  
**Adlercreutz, H.**, *See* Rowland, I.  
**Aebischer, P.**  
 —; Gene transfer approaches for the treatment of neurodegenerative diseases, A138  
**Aghion, J.**  
 —; Core biochemistry: a European perspective, A8  
**Aguiar, D. J.**, *See* Knudson, C. B.  
**Airas, J. M.**, *See* O'Connor, V.  
**Aitken, A.**, *See* Dubois, T.  
**Alam, N.**  
 —; Rahman, M. A.  
   Studies on semen and anti-sperm antibodies in male infertility, A152  
**Alderson, D.**, *See* Arul, G. S.  
**Alessi, D.**, *See* Balandran, A.  
 —; A possible mechanism by which protein kinase B is phosphorylated at Ser-473, A73  
**Alessi, D. R.**, *See* Schmoll, D.  
**Alexander, M. Y.**  
 —; Brosnan, M. J.; Fennell, J.; Devlin, A. M.; Hamilton, C. A.; Dominiczak, A. F.  
   A gene transfer strategy to manipulate nitric oxide in the vasculature of a hypertensive rat model, A149  
**Alexson, S. E. H.**, *See* Hunt, M. C.  
 —; Lipid regulation of gene expression, A62  
**Ali, I. S.**, *See* Khattab, A. D.  
**Allan, D.**  
 —; Shawyer, A.; Taylor, A.  
   Mechanisms by which short-chain ceramides cause apoptosis, 428  
 —; Short-chain ceramides kill cells by inhibition of lipid biosynthesis, A80  
**Allen, G. J.**  
 —; Shand, J. H.; Beattie, J.; Flint, D. J.  
   Switching species specificity of the growth hormone receptor, A43  
**Allen, J. M.**, *See* Cameron, A. J. M.; Melendez, A. J.  
**Allen, K. K.**, *See* Hussain, S.  
**Allen, P. B.**  
 —; Hsieh-Wilson, L.; Yan, Z.; Feng, J.; Ouimet, C. C.; Greengard, P.  
   Control of protein phosphatase 1 in the dendrite, A72, 543  
**Allen, S.**  
 —; Mehler, A.; Ferguson, M. A. J.  
   Structure of novel phosphosaccharide glycans of *Trypanosoma cruzi*, A111  
**Allen-Vercoe, E.**, *See* Robertson, J. M.  
**Allinson, T.**, *See* Greenwood, C. J.  
**Almedia, I. C.**  
 —; Structural requirements for macrophage activation by glycosylphosphatidylinositols from *Trypanosoma cruzi* mucins, A86  
**Almond, A.**, *See* Sheehan, J.  
**Alt, F. W.**, *See* Fruman, D. A.  
**Althoff, K.**, *See* Müllberg, J.  
**Amicosante, G.**, *See* Frère, J.-M.  
**Amzel, L.**  
 —; Mammalian quinone reductases: enzymes involved in chemoprotection and chemoactivation, A83  
**Amzel, L. M.**, *See* Bianchet, M. A.  
**Anderson, H. M.**, *See* Jupp, O. J.  
**Anderson, L. A.**, *See* Snowden, A. W.  
**Anderson, N. G.**, *See* Wilson, M. A.  
**Andrew, P.**, *See* Gilbert, R.  
**Anegon, I.**, *See* Guillot, C.  
 —; Indefinite heart allograft survival after adenovirus-mediated gene transfer of transforming growth factor(TGF) $\beta$ 1 or CTLA4, A137  
**Annenkov, A.**, *See* Chernajovsky, Y.  
**Anthony, C.**
- ; Pyrroloquinoline quinone (PQQ)-dependent methanol dehydrogenase and glucose dehydrogenase, A30  
**Antson, A. A.**  
 —; Molecular interactions in assembly of trp RNA-binding attenuation protein with RNA, A89  
**Anzenbacher, P.**, *See* Munro, A. W.  
**Appadu, B. L.**, *See* Cembala, T. M.  
**Appelmelk, B. J.**  
 —; Role of *Helicobacter pylori* lipopolysaccharide in interaction with the host, A84  
**Appelros, S.**, *See* Chaloner, C.  
**Archer, C.**  
 —; Hyaluronan in embryogenesis, A12  
**Arese, M.**, *See* Wilson, E. K.  
**Arkinstall, S.**  
 —; Mitogen-activated protein (MAP) kinase tight binding to dual-specificity phosphatases: a mechanism for enzyme specificity, A72  
**Armstrong, F.**, *See* Turner, K.  
**Armstrong, F. A.**  
 —; Electron transfer and coupled processes in protein film voltammetry, A31, 206  
**Arnold, J.**, *See* Houghton, C.  
**Arpino, S.**, *See* Clark, L.  
**Arrar, L.**, *See* Djellili, H.  
**Arribas, J.**, *See* Merlos-Suárez, A.  
 —; Mechanisms controlling the shedding of transmembrane molecules, A24  
**Arul, G. S.**  
 —; Myerscough, N.; Moorghen, M.; Spicer, R. D.; Alderson, D.; Corfield, A. P.  
   The expression of mucin genes in Barrett's oesophagus, A41  
**Ashton, B.**, *See* Middleton, J.  
**Ashton, B. A.**, *See* Hazlehurst, Z. V.  
**Askin, D.**, *See* Groves, J. D.  
**Aslam, M.**  
 —; Seed, M.; Knight, B.; Perkins, S. J.  
   Domain structure of lipoprotein(a) by joint neutron and X-ray scattering, A122  
**Atanassova, A. I.**, *See* Fowler, M. R.  
**Athanassopoulou, N.**  
 —; Davies, R. J.; Edwards, P. R.; Yeung, D.; Maule, C. H.  
   Cholera toxin and G<sub>M1</sub>: a model membrane study with IAsys, 340  
**Atherton, G.**, *See* Deed, R.  
**Avella, M.**, *See* Botham, K. M.; Doorty, K. B.; Lambert, M. S.; Rahman, M. H.  
**Avella, M. A.**, *See* Grieve, D. J.  
**Averbeck, P.**, *See* Grisshammer, R.  
**Ayar, A.**, *See* Scott, R.
- Bach, T. J.**  
 —; Genetic engineering of the plant isoprenoid pathway: all things considered?, A17  
**Bachmatova, I.**, *See* Ramanavičius, A.  
**Badii, R.**, *See* Barsukov, I.  
**Bading, H.**, *See* Hardingham, G. E.; Lange, C.  
**Baghiani, A.**, *See* Larguet, F.  
**Bagshaw, C. R.**, *See* Kuhlman, P. A.  
 —; Conibear, P. B.  
   Single molecule enzyme kinetics: applications to myosin ATPases, A2, 33  
**Bailey, J. M.**  
 —; Makheja, A. N.; Feinmark, S. J.; Vanderhoek, J. Y.; Simon, T.  
   Differential regulation of eicosanoids in prophylaxis of cardiovascular versus Alzheimer's disease, A125  
 —; Nelson, K.
- Selective inhibition of phlebo-, retro-, flavo- and pox-viruses by nucleoside and PFA analogues, A152  
**Baillie, G. S.**, *See* Hoffmann, R.  
**Baird, A.**, *See* Barrett, L. B.  
**Baker, D.**, *See* Chernajovsky, Y.  
**Bakker, B. M.**, *See* van Heeswijk, W. C.  
**Balazs, E.**  
 —; Biomedical applications of hyaluronan, A11  
**Baldock, C.**, *See* Shuttleworth, A.  
 —; Fakhoury, H.; Ball, S. G.; Shuttleworth, C. A.; Kiely, C. M.  
   Investigating the metal-ion-dependent adhesion site (MIDAS) function in collagen VI assembly, A144  
**Baldwin, A.**  
 —; Rogers, H.; Francis, D.; Harwood, J.  
   Inhibition of very-long-chain fatty acid synthesis in barley and wild oats by thiocarbamate herbicides, A123  
**Baldwin, J.**, *See* Thomas, C. R.  
**Baldwin, J. E.**, *See* Lloyd, M. D.  
**Balandran, A.**  
 —; Casamayor, A.; Alessi, D.  
   A possible mechanism by which protein kinase B is phosphorylated at Ser-473, A106  
**Ball, K.**, *See* Khanna, S.  
**Ball, S.**, *See* Shuttleworth, A.  
**Ball, S. G.**, *See* Baldock, C.  
 —; Kiely, C. M.; Shuttleworth, C. A.  
   In vitro assembly of type VI collagen, A144  
**Balmano, K.**, *See* Millar, T.  
**Banks, M.**, *See* Clark, L.; Shield, V.  
**Banks, R. E.**  
 —; Laser capture microdissection and proteomic analysis: preliminary findings, A67  
**Bardocz, S.**, *See* Naughton, P. J.  
**Barford, D.**  
 —; Structural studies of reversible protein phosphorylation and protein phosphatases, 751  
**Barker, D.**  
 —; Fetal programming of adult diseases, A8  
**Barnes, M. J.**, *See* Knight, C. G.  
**Barnes, R. C.**, *See* Worrall, D. M.  
**Baroche, L.**, *See* Massotte, D.  
**Barragan, A.**  
 —; Spillmann, D.; Carlson, J.; Wahlgren, M.  
   Role of glycans in *Plasmodium falciparum* infection, 487  
**Barrett, B.**, *See* Griffiths, G.  
**Barrett, L. B.**  
 —; Logan, A.; Berry, M.; Ying, W.; Gonzalez, A.-M.; Baird, A.; Seymour, L. W.  
   Targeted transfection of neuronal cells using a poly(D-lysine)-cholera-toxin b chain conjugate, 851  
**Barsukov, I.**  
 —; Lian, L.-Y.; Badii, R.; Sze, K.-H.; Roberts, G. C. K.  
   Rho-GDI-Rac interaction by NMR, A37  
**Bartle, I. D. G.**  
 —; Forging the link; international networking, A18  
**Barton, J. D.**, *See* Cunane, L. M.  
**Basran, J.**, *See* Lee, H. J.; Roberts, P.; Scrutton, N. S.  
 —; Jang, M.-H.; Sutcliffe, M. J.; Hille, R.; Scrutton, N. S.  
   Stepwise electron transfer to 6-S-cysteinyl FMN in trimethylamine dehydrogenase, A45  
**Bassett, N. S.**, *See* Oliver, M. H.  
**Bates, S.**, *See* Gow, N. A. R.  
**Bateson, J.**, *See* Brown, M. J. B.  
**Bath, A. J.**, *See* Halford, S. E.

- Batty, I. H.**, *See* Pass, I.  
**Baumruk, V.**, *See* Munro, A. W.  
**Bax, B.**, *See* Jones, D.  
**Baxter, R. L.**, *See* Leadbeater, C.; McIver, L.  
**Baylis, H. A.**, *See* Harrington, L. S.  
**Bayliss, S. C.**  
—; Buckberry, L. D.  
Biological fluids alter the surface chemistry of nanostructured silicon semiconductors, A52  
The viability of mammalian cells on nanostructured silicon semiconductors, A53  
**Beale, M. H.**  
—; The terpenoid pathway: closing the loop, A17  
**Beard, M.**, *See* McPhee, I.  
**Beattie, J.**, *See* Allen, G. J.  
**Beaumont, A. J.**  
—; Jury, J. A.; Frayne, J.; Devos, R.; van der Heyden, J.; Jeffrey, L.; Price, G. J.; Hall, L.  
Sequence analysis and characterization of the rat orthologue of tumour-necrosis-factor- $\alpha$ -converting enzyme, A55  
**Becker, T.**, *See* Latunde-Data, G. O.  
**Bedford, F. K.**, *See* Brandon, N. J.  
**Beech, J. S.**, *See* Iles, R. A.  
**Begent, L. A.**  
—; Chan, S. T.; Steventon, G. B.  
Kinetics of vitamin K 2,3-epoxide reductase, A129  
**Bellelli, A.**, *See* Wilson, E. K.  
**Benboubetra, M.**, *See* Djellili, H.; Larguet, F.  
**Bendahan, D.**, *See* Kemp, G. J.  
**Bennett, A. J.**, *See* Sims, H. M.  
—; Sims, H. M.; Ford, A.; Lawler, K.; White, D. A.; Salter, A. M.; Billett, M. A.  
Regulation of the hepatic microsomal triglyceride transfer protein (MTP) gene by dietary cholesterol is maintained in isolated hepatocytes, A50  
**Berenstein, M.**, *See* Chernajovsky, Y.  
**Berge, T.**, *See* Dryden, D. T. F.  
**Berhane, Y.**, *See* Lambert, M. S.  
**Bernard, A. R.**, *See* Blassey, H. D.  
**Bernards, R.**  
—; A novel activity of cyclin D1 in breast cancer, A63  
**Berry, E. A.**  
—; Zhang, Z.; Huang, L.-S.; Kim, S.-H.  
Structures of quinone-binding sites in bc complexes: functional implications, A80, 565  
**Berry, M.**, *See* Barrett, L. B.  
**Besoluk, S.**, *See* Hergenc, G.  
**Betenbaugh, M. J.**, *See* Tate, C. G.  
**Betz, H.**, *See* O'Connor, V.  
—; Gephyrin and its partners: multifunctional organizer proteins of post-synaptic membrane specializations, A70  
**Bi, K.**, *See* Ktistakis, N. T.  
**Bianchet, M. A.**  
—; Foster, C.; Faig, M.; Talalay, P.; Amzel, L. M.  
Structure and mechanism of cytosolic quinone reductases, 610  
**Bilcock, D. T.**, *See* Halford, S. E.  
**Billett, M. A.**, *See* Bennett, A. J.; Sims, H. M.  
**Bingle, C.**, *See* Whyte, M.  
**Binley, K.**  
—; Griffiths, L.; Iqball, S.; Spearman, H.; Kingsman, S. M.; Kingsman, A.; Naylor, S.  
A physiologically regulated adenoviral vector for the treatment of ischaemic disease, A148  
**Birrell, H.**, *See* Cutler, P.  
**Bispham, J.**  
—; Heasman, L.; Clarke, L.; Ingleton, P.; Stephenson, T.; Symonds, M. E.  
Effect of birth and ambient temperature on abundance of long and short forms of the prolactin receptor in ovine brown-adipose tissue, A49  
**Blacque, O. E.**, *See* Worrall, D. M.  
**Blank, J. L.**, *See* Deacon, K.; Wylie, P. G.  
**Blassey, H.**  
—; Transient expression technologies, their application and scale-up: 5-hydroxytryptamine-3 (5HT-3) receptor case study, A143  
**Blassey, H. D.**  
—; Hovius, R.; Vogel, H.; Bernard, A. R.  
Transient-expression technologies, their application and scale-up: 5-HT<sub>3</sub> serotonin receptor case study, 956  
**Bligh, H. F. J.**, *See* Jackson, D. A.  
**Bloomfield, F. H.**, *See* Oliver, M. H.  
**Bloxham, D. M.**, *See* Qu, J.  
**Blundell, T. L.**, *See* Marino-Buslje, C.  
**Bofill-Cardon, E.**, *See* O'Connor, V.  
**Böhm, S.**, *See* O'Connor, V.  
**Boisgard, R.**  
—; Chanat, E.  
Regulation of milk protein secretion: phospholipase D-dependent and -independent mechanisms, A100  
**Boldin, S. A.**, *See* Futerman, A. H.  
**Bolsover, S.**, *See* Ibrahim, O. H.  
**Bolton, M.**, *See* Hermansson, M.  
**Bond, C. S.**  
—; Wilce, M. C. J.; Guss, J. M.; Freeman, H. C.  
Structural studies of *Escherichia coli* aminopeptidase P, A130  
**Borgström, A.**, *See* Chaloner, C.  
**Borgström, S.**, *See* Chaloner, C.  
**Bortolotto, Z. A.**  
—; Collingridge, G. L.  
Evidence that a novel metabotropic glutamate receptor mediates the induction of long-term potentiation at CA1 synapses in the hippocampus, 170  
**Borutaite, V.**  
—; Brown, G. C.  
Effects of nitric oxide on activity of caspases *in vitro* and in macrophages, A146  
**Botham, K. M.**, *See* Grieve, D. J.; Lambert, M. S.; Rahman, M. H.  
—; Avella, M.; Cantafora, A.; Bravo, E.  
The effect of oestrogen on the metabolism of chylomicron cholesterol in the rat *in vivo*, A50  
**Bottomley, J. R.**, *See* Reynolds, J. S.  
**Bouchier, P.**, *See* O'Cuinn, G.  
**Bovee-Geurts, P. H. M.**, *See* DeGrip, W. J.  
**Bowey, E.**, *See* Rowland, I.  
**Bowley, A.**, *See* Khattab, A. D.  
**Bowley, J.**, *See* Khattab, A. D.  
**Boxer, D.**  
—; Core biochemistry: an industrial perspective, A9  
**Brady, C. P.**  
—; Dowd, A. J.; Tort, J.; Roche, L.; Condon, B.; O'Neill, S. M.; Brindley, P. J.; Dalton, J. P.  
The cathepsin L-like proteinases of liver fluke and blood fluke parasites of the trematode genera *Fasciola* and *Schistosoma*, 740  
**Brady, H. J. M.**  
—; T cell apoptosis: mechanism and consequences, A135  
**Brady, M. E.**, *See* Gaughan, L.; Ozanne, D. M.  
**Braganza, J. M.**, *See* Chaloner, C.; Zaman, N.  
**Braig, K.**, *See* Leslie, A. G. W.  
**Brand, M.**  
—; Overview: linking research and teaching, A22  
**Brandon, N. J.**  
—; Bedford, F. K.; Connolly, C. N.; Couve, A.; Kittler, J. T.; Hanley, J. G.; Jovanovic, J. N.; Uren, J.; Taylor, P.; Thomas, P.; Smart, T. G.; Moss, S. J.  
Synaptic targeting and regulation of GABA<sub>A</sub> receptors, 527  
**Brandt, U.**, *See* Okun, J. G.  
—; Properties of the common inhibitor binding domain in mitochondrial NADH-dehydrogenase (complex I), A82  
**Brandt, W. F.**, *See* Schwager, S. L. U.  
**Brann, A. B.**, *See* Futerman, A. H.  
**Brant, S.**  
—; Sharma, P.; Evans, A. T.  
Vasopressin-induced translocation of S100 proteins in renal tissue discs *in vitro*, A59  
**Brass, A.**, *See* Sheehan, J.  
**Bravo, E.**, *See* Botham, K. M.  
**Breeman, S.**, *See* McFadyen, M. C. E.  
**Breier, B. H.**, *See* Oliver, M. H.  
**Brenner, M. B.**, *See* Higgins, J. M. G.  
**Breton, J.**, *See* Jünemann, S.  
**Bright, N. A.**, *See* Row, P. E.  
**Brightman, F. A.**  
—; Thomas, S.; Fell, D. A.  
Simulation of the epidermal growth factor signal transduction pathway, A48  
**Brimacombe, R.**  
—; The three-dimensional structure of bacterial rRNA at 13 Å resolution, A89  
**Brimmell, M.**, *See* MacCarthy-Morrog, L.  
**Brindley, P. J.**, *See* Brady, C. P.  
**Brocklehurst, K.**, *See* Hussain, S.; Sonkarla, S.  
**Brophy, P. M.**  
—; Cambell, A. M.; van Eldick, A.-M.; Teesdale-Spittle, P. H.; Wang, M. F.  
 $\beta$ -Carbonyl-substituted glutathione conjugates as inhibitors of *Oncocerca volvulus* glutathione S-transferase 2, A39  
**Brosnan, M. J.**, *See* Alexander, M. Y.  
**Brown, A. J. P.**, *See* Gow, N. A. R.  
**Brown, E. A.**, *See* Gaw, A.  
**Brown, G. C.**, *See* Borutaite, V.; Price, A.  
**Brown, J.**, *See* Foord, S. M.  
**Brown, K. A.**, *See* Jesmin; Patel, R. R.; Shafiq, M.; Skinner, M. A.; Vaithanomsat, P.  
**Brown, M. J. B.**  
—; Core biochemistry: a pharmaceutical industry perspective, A9  
—; Gilpin, M.; Witty, D.; Bateson, J.; Pope, A. J.  
Mechanistic insights into substrate turnover and inhibition of metallo- $\beta$ -lactamases, A39  
**Brown, R.**, *See* Khanna, S.  
**Bruce, N. C.**, *See* Craig, D. H.  
**Brunner, J.**, *See* Wickel, M.  
**Brunori, M.**, *See* Wilson, E. K.  
**Brzezinski, P.**, *See* Wilson, E. K.  
**Brzozowski, A. M.**, *See* Pike, A. C. W.  
**Buchanan, S. K.**  
—; Overexpression and refolding of an 80-kDa iron transporter from the outer membrane of *Escherichia coli*, A140, 903

- Buck, M.**, *See* Ray, P.  
**Buckberry, L. D.**, *See* Bayliss, S. C.  
**Buckley, N. J.**, *See* Wood, I. C.  
**Budd, D. C.**  
—; Tobin, A. B.  
Identification of a casein kinase I $\alpha$ -binding site in the third intracellular loop of the human muscarinic M<sub>3</sub> receptor, A116  
—; Young, K. W.; Challiss, R. A. J.; Tobin, A. B.  
Phosphorylation and functional regulation of the  $\beta_2$ -adrenergic receptor by the phospholipase-C-coupled M<sub>3</sub>-muscarinic receptor, A34  
**Bulgarelli-Leva, G.**, *See* Wymann, M. P.  
**Bunnett, N. W.**, *See* Déry, O.  
—; Protease-activated receptors: novel functions for serine proteases, A24  
**Burbaev, D. S.**, *See* Ohnishi, T.  
**Burchell, A.**, *See* Schmoll, D.  
**Burfoot, M. S.**, *See* McKenzie, E. A.  
**Burley, S.**  
—; X-Ray crystallographic studies of eukaryotic gene expression, A88  
**Burns, S. P.**, *See* Iles, R. A.  
**Burrows, K.**, *See* Thomas, C. R.  
**Burry, R. W.**, *See* Rampersaud, A. A.  
**Burton, G.**, *See* Greenwood, C. J.  
**Buurman, E. T.**, *See* Gow, N. A. R.  
**Byrne, B.**, *See* Heding, A.  
**Byron, O.**, *See* Gilbert, R.  
**Cabart, P.**, *See* Friedrich, J. K.  
—; Friedrich, J. K.; Panov, K. I.; Zomerdijk, J. C. B. M.  
Retinoblastoma protein represses the activity of multiple factors in the RNA polymerase I transcription machinery, A98  
**Cambell, A. M.**, *See* Brophy, P. M.  
**Cameron, A. J. M.**  
—; Allen, J. M.  
The human high-affinity IgG receptor (Fc<sub>RI</sub>) induces the association of the 5'-inositol phosphatase, SHIP, with Shc in U937 cells, A128  
**Campaner, S.**, *See* Pilone, M. S.  
**Capopiano, D. J.**, *See* Leadbeater, C.; McIver, L.  
**Cantafora, A.**, *See* Botham, K. M.  
**Cantley, L. C.**, *See* Fruman, D. A.  
**Capell, A.**, *See* Steiner, H.  
**Cárdenas, M. L.**  
—; Cornish-Bowden, A.; Ureta, T.  
Evolution of hexokinases, A56  
**Cardosi, M.**, *See* Kelso, E.  
**Carlotti, F.**, *See* Yang, L.  
—; Yang, L.; Dower, S. K.; Qwarnstrom, E. E.  
Nuclear factor (NF)- $\kappa$ B activation in single living cells: analysis of anti-apoptosis and kinetics of activation by interleukin-1 $\beta$ , A94  
**Carlquist, M.**, *See* Pike, A. C. W.  
**Carlson, J.**, *See* Barragan, A.  
**Carr, I. C.**, *See* Kellett, E.  
**Carrera, A. C.**, *See* Jones, D. R.  
**Carrington, S. D.**, *See* Sengupta, A.  
**Carson, M.**, *See* Mayne, R.  
**Carter, M. J.**, *See* Koundouris, A.  
**Casamayor, A.**, *See* Balendran, A.  
**Cascante, M.**, *See* Ortega, F.  
—; New insights into metabolic pathway optimization by analogy with industrial manufacturing processes, A19  
**Casey, R.**  
—; Fatty acid oxidation: tasteful tunes played on the green notes, A17  
**Cass, A. E. G.**, *See* Jesmin  
**Castro, M. G.**, *See* Lowenstein, P. R.  
—; Windeatt, S.; Smith-Arica, J.; Lowenstein, P. R.  
Cell-type specific expression in the pituitary: physiology and gene therapy, A139, 858  
**Caterson, B.**, *See* Curtis, C. L.; Roberts, S.  
**Catterall, W. A.**  
—; Interaction of pre-synaptic calcium channels with soluble N-ethylmaleimide-sensitive fusion protein attachment protein receptor (SNARE) proteins in neurotransmitter release, A71  
**Cavalli, A.**, *See* Milligan, G.  
**Cembala, T. M.**  
—; Appadu, B. L.; Lambert, D. G.  
Effects of steroid/neuromuscular-blocking drugs on [<sup>3</sup>H]noradrenaline release from SH-SY5Y cells, A33  
**Cernadas, M.**, *See* Higgins, J. M. G.  
**Cerretti, D. P.**  
—; Characterization of the tumour necrosis factor  $\alpha$ -converting enzyme, TACE/ADAM 17, A23, 219  
**Cetinalp, P.**, *See* Hergenc, G.  
**Chadwick, D.**, *See* Lever, A. M. L.  
**Challiss, R. A. J.**, *See* Budd, D. C.; Davis, R. J.; Hermans, E.; Wyllie, P. G.; Young, K. W.  
**Chaloner, C.**  
—; Douglas, J.; Appelros, S.; Borgström, A.; Segal, I.; Braganza, J. M.  
Relationship between trypsinogen burden, activation and fibrinolysis in acute pancreatitis, A110  
—; Zaidi, A.; Cotter, L.; Dollery, W.; Mackway-Jones, K.; Borgström, A.; Braganza, J. M.  
Pancreatic acinar cell injury after clot-dissolution therapy in myocardial infarction (MI), A109  
**Chan, S. T.**, *See* Begent, L. A.  
**Chan, W. Y.**, *See* Soloviev, M. M.  
**Chanat, E.**, *See* Boisgard, R.  
**Channing, D. R.**, *See* Young, K. W.  
**Chant, A.**  
—; Manfield, I.; Kneale, G.  
Characterization of the domain structure of the gene regulatory protein AreaA from *Aspergillus nidulans*, A126  
**Chapman, K. E.**, *See* Seckl, J. R.  
**Chapman, N. R.**  
—; Perkins, N. D.  
Regulation of nuclear factor- $\kappa$ B transcription activity by early-growth response factor-1 (EGR-1), A99  
**Chapman, S.**, *See* Turner, K.  
**Chapman, S. K.**, *See* Doherty, M. K.; Green, A. J.; Mowat, C. G.; Moysey, R.; Munro, A. W.; Noble, M. A.; Ost, T. W. B.; Welsh, F.  
—; Welsh, F.; Moysey, R.; Mowat, C.; Doherty, M. K.; Turner, K. L.; Munro, A. W.; Reid, G. A.  
Flavocytochromes: transceivers and relays in biological electron transfer, A29, 185  
**Charnock, J. M.**, *See* Lloyd, M. D.  
**Chawla, S.**, *See* Hardingham, G. E.  
**Chazot, P. L.**, *See* Rutter, A. R.  
**Chen, S.**, *See* Gilbert, R.  
**Chen, Z.-W.**, *See* Cunane, L. M.  
**Chernajovsky, Y.**  
—; Gould, D.; Annenkov, A.; Dreja, H.; Daly, G.; Rabinovich, G. A.; Croxford, L.; Baker, D.; Berenstein, M.; Podhajcer, O.  
Immunotherapy of auto-immune diseases by gene transfer, A137, 869  
**Cheung, W. F.**  
—; Cruz, T. F.; Turley, E. A.  
Receptor for hyaluronan-mediated motility (RHAMM), a hyaladherin that regulates cell responses to growth factors, 135  
**Chittock, R.**, *See* Ray, P.; Wilkinson, A.-S.  
**Chohan, K. K.**, *See* Scrutton, N. S.  
**Chubb, A. J.**, *See* Schwager, S. L. U.  
**Church, V. L.**, *See* Hazlehurst, Z. V.  
**Ciruela, A.**, *See* Hinchliffe, K. A.  
—; Hinchliffe, K. A.; Divecha, N.; Irvine, R. F.  
Differential localization of isoforms of Type II PtdInsP<sub>4</sub>-kinases, A101  
**Ciruela, F.**, *See* Soloviev, M. M.  
—; Soloviev, M. M.; McIlhinney, R. A. J.  
Effect of Homer-1a in the cell-surface targeting of metabotropic glutamate receptor type 1 $\alpha$ , A113  
Immunological identification of a new Homer-related protein in rat brain and in HEK-293 cells, A113  
**Clague, M. J.**  
—; Jones, A. T.; Mills, I. G.; Walker, D. M.; Urbé, S.  
Regulation of early-endosome dynamics by phosphatidylinositol 3-phosphate binding proteins, A76, 662  
**Clark, J. B.**, *See* Stone, R.  
**Clark, L.**, *See* Shield, V.  
—; Evans, B.; Pipe, A.; Arpino, S.; Banks, M.  
Screening for CCK<sub>A</sub>-binding inhibitors: a comparison of combinatorial chemistry approaches, A35  
**Clarke, L.**, *See* Bispham, J.  
**Clarke, P. R.**  
—; Control of apoptosis in cell-free systems, A133  
**Clegg, R.**, *See* Sumathipala, R.  
**Clough, J.**  
—; Henderson, P. J. F.  
Overexpression, purification and structural analysis of the *Escherichia coli* L-fucose-H<sup>+</sup> membrane transport protein, FucP, A150  
**Clough, J. L.**, *See* Ward, A.  
**Clough, S.**, *See* Ponnambalam, S.  
**Coathalem, H.**, *See* Guillot, C.  
**Cockcroft, S.**, *See* Ibrahim, O. H.; Jones, D.; Morgan, C. P.; O'Luanagh, N.; Swigart, P.; Wiedemann, C.  
—; ADP-ribosylation factor (ARF), a multi-functional GTPase as a co-ordinator of membrane traffic: is ARF-regulated phospholipase D the answer to everything?, A75  
**Coggins, J.**  
—; Moving from chance discovery to rational drug design: do we still need chemistry?, A90  
**Cohen, R. D.**, *See* Iles, R. A.  
**Coleman, P. J.**, *See* Scott, D.  
**Colledge, M.**, *See* Tavalin, S. J.  
**Collingridge, G. L.**, *See* Bortolotto, Z. A.; Noel, J.; Pickard, L.  
—; Role of G-protein-coupled receptors in adaptative neuronal processes, A26  
**Condon, B.**, *See* Brady, C. P.  
**Conibear, P. B.**, *See* Bagshaw, C. R.  
**Conner, J.**, *See* Zachos, G.  
**Connerton, I. F.**, *See* Hussain, S.  
**Connolly, C. N.**, *See* Brandon, N. J.  
**Converse, C. A.**, *See* Fedorovich, I. B.  
**Conway, A.-M.**, *See* Pyne, S.  
**Cook, A.**, *See* Fotinopoulou, A.  
**Cook, N.**, *See* Griffiths, G.  
**Cook, S.**, *See* Gaughan, L.; Millar, T.; Ozanne, D. M.  
**Cook, T.**, *See* Mayne, R.  
**Cooke, F. T.**, *See* Dove, S. K.  
**Corda, D.**, *See* Godi, A.  
**Corfield, A. P.**, *See* Arul, G. S.; Sengupta, A.

- Cornish-Bowden, A.**, *See* Cárdenas, M. L.  
 —; Enzyme kinetics from a metabolic perspective, A19, 281
- Cotecchia, S.**  
 —; Acute and chronic regulation by G-protein-coupled receptors, A25  
 —; Mhaouty-Kodja, S.  
 Regulatory mechanisms of  $\alpha_1\beta$ -adrenergic receptor function, 154
- Cotter, L.**, *See* Chaloner, C.
- Coughtrie, M.**, *See* Dajani, R.
- Coughtrie, M. W. H.**, *See* Stanley, E. L.
- Court, J. A.**, *See* Goodchild, R. E.
- Coutinho, V.**  
 —; Doherty, A.; Henley, J. M.  
 Construction and expression of human metabotropic glutamate receptor 5a-green fluorescent protein fusion protein (hmGluR5-GFP), A119
- Couve, A.**, *See* Brandon, N. J.
- Cowell, D.**, *See* Hill, A.
- Cowen, R.**, *See* Lowenstein, P. R.
- Cozier, G. E.**  
 —; Lockyer, P. J.; Cullen, P. J.  
 Molecular modelling of the inositol 1,3,4,5-tetrakisphosphate-binding GAP1<sub>IP4BP</sub> and GAP1<sup>m</sup> pleckstrin homology (PH) domains, A104
- Cozzone, P. J.**, *See* Kemp, G. J.
- Craig, D. H.**  
 —; Bruce, N. C.; Moody, P. C. E.; Scrutton, N. S.  
 Structure and mechanism of an opiate-transforming redox enzyme: morphinone reductase, A46
- Crane-Robinson, C.**, *See* Myers, F. A.  
 —; Read, C. M.; Jelesarov, I.; Privalov, P. L.  
 Energetics of high-mobility-group (HMG) box interactions with the minor groove of DNA, A126
- Cross, D. A. E.**, *See* Hall-Jackson, C. A.
- Crossley, M.**, *See* Fox, A. H.
- Croucher, P. I.**  
 —; Wang, F.; Hargreaves, P. G.  
 Interleukin-6 receptor shedding: a possible role for members of the ADAM family, A23, 224
- Croxford, L.**, *See* Chernajovsky, Y.
- Crozier, A.**  
 —; Flavonoids: antioxidants in vino veritas or the cup that cheers?, A16
- Cruz, T. F.**, *See* Cheung, W.-F.
- Cruzalegui, F. H.**, *See* Hardingham, G. E.
- Cryer, A.**, *See* Hughes, T. R.; Tengku-Muhammad, T. S.
- Csoregi, E.**, *See* Ramanavičius, A.
- Cullen, D. C.**  
 —; Multichannel affinity sensors for environmental monitoring, A27
- Cullen, P. J.**, *See* Cozier, G. E.; Lockyer, P. J.; Reynolds, J. S.  
 —; Phosphoinositide 3-kinase effector molecules, A78  
 —; Venkateswarlu, K.  
 Potential regulation of ADP-ribosylation factor 6 signalling by phosphatidylinositol 3,4,5-trisphosphate, 683
- Cummings, N. J.**, *See* Hussain, S.
- Cunane, L. M.**  
 —; Chen, Z.-W.; Durley, R. C. E.; Barton, J. D.; Mathews, F. S.  
 Flavocytochromes: structures and implications for electron transfer, 179
- Cunningham, F. M.**, *See* Greenaway, E. C.
- Currie, R. A.**  
 —; Downes, C. P.  
 Measuring the lipid-binding properties of proteins: the examples of 3-phosphoinositide-dependent protein
- kinase-1 (PDK1), protein kinase B (PKB) and early endosomal antigen-1 (EEA1)**, A107
- Curtis, C. L.**  
 —; Caterson, B.; Harwood, J. L.  
 Mediation of proteinase activity by n-3 fatty acids in chondrocytes, A96
- Custer, L. J.**, *See* Franke, A. A.
- Cutler, P.**  
 —; Birrell, H.; Haran, M.; Man, W.; Neville, B.; Rosier, S.; Skehel, M.; White, I.  
 Proteomics in pharmaceutical research and development, A69, 555
- Cutruzzola, F.**, *See* Wilson, E. K.
- Cuttle, G.**  
 —; Pape, S. J.  
 Biochemical characterization of morphological differentiation of malignant epithelial cells induced by contact with peripheral nerve tissue, A35
- Cuturi, M. C.**, *See* Guillot, C.
- Daff, S. N.**, *See* Munro, A. W.
- Dajani, R.**  
 —; Hood, A.; Coughtrie, M.  
 A single amino acid (Glu-146) governs the substrate specificity of human catecholamine sulphotransferase SULT1A3, A36
- Dalton, J. P.**, *See* Brady, C. P.
- Daly, G.**, *See* Chernajovsky, Y.
- Dalziel, R. G.**, *See* Frame, F. M.; Gerrard, L.
- Damblon, C.**  
 —; Lian, C. L. Y.; Soto, R. P.; Villadares, M. H.; Galleni, M.; Frère, J. M.; Roberts, G. C. K.  
 Structural studies of histidines in zinc  $\beta$ -lactamases and their interactions with inhibitors, A37
- Dandrea, J.**, *See* Wilson, V.
- Daniels, L. E.**, *See* Halford, S. E.
- Darby, A.**, *See* Middleton, J.
- Darroch, P.**, *See* Pyne, S.
- Das, I.**  
 —; Khan, N. S.  
 Platelet nitric oxide synthase activity and plasma cGMP levels suggests dysregulation in nitric oxide metabolism in schizophrenia, A50
- Dasgupta, S.**  
 —; Hogan, E. L.  
 Brain glyco- and lyso-sphingolipids in Gal-T1 knock-out mice, A113
- David, A.**, *See* Guillot, C.
- Davidson, H. W.**, *See* Row, P. E.
- Davidson, V. L.**  
 —; Methylamine dehydrogenase: structure and function of electron transfer complexes, A30, 201
- Davies, G. D.**, *See* Dryden, D. T. F.
- Davies, R. J.**, *See* Athanassopoulou, N.
- Davies, R. J. H.**  
 —; Core biochemistry: the necessity for chemistry, A9
- Davis, J. J.**, *See* Hill, H. A. O.
- Davis, R. J.**  
 —; Challiss, R. A. J.; Nahorski, S. R.  
 Characterization of purinoreceptor-mediated  $\text{Ca}^{2+}$  oscillations in L-fibroblasts, A32
- Dawson, C. W.**, *See* Young, L. S.
- Dawson, S.**, *See* Houghton, C.
- Day, A. J.**  
 —; The structure and regulation of hyaluronan-binding proteins, A11, 115
- Deacon, K.**
- ; Blank, J. L.**
- Mitogen-activated protein kinase/extracellular signal-regulated kinase kinase kinase 2 (MEKK2)** and MEKK3 activate both mitogen-activated protein kinase kinase 6 (MKK6) and MKK7 in intact cells, A58
- Dean, M. F.**, *See* Liu, H.
- Deed, R.**  
 —; Atherton, G.; Norton, J.  
 Molecular interactions between Id proteins and other transcriptional regulators in cell cycle control, A98
- Degli Esposti, M.**  
 —; Ubiquinone and inhibitor sites in complex I: one, two or three?, A83
- DeGrip, W. J.**  
 —; Klaassen, C. H. W.; Bovee-Geurts, P. H. M.  
 Large-scale functional expression of visual pigments: towards high-resolution structural and mechanistic insight, A142, 937
- Delday, M. I.**, *See* Sneddon, A. A.
- De Matteis, M. A.**, *See* Godi, A.  
 —; The small GTPase ADP-ribosylation factor (ARF) regulates phosphoinositide 4-kinase  $\beta$  in the Golgi complex, A75
- Derrick, J. P.**, *See* Vinnicombe, H. G.  
 —; Dihydropteroate synthase: an old drug target revisited, A3
- Dervan, J. J.**  
 —; Sayers, J. R.  
 A helix-loop-helix region of T5 5'-3' exonuclease contains residues important for substrate and cofactor binding, A127
- Déry, O.**  
 —; Bennett, N. W.  
 Proteinase-activated receptors: a growing family of heptahelical receptors for thrombin, trypsin and tryptase, 246
- Devlin, A. M.**, *See* Alexander, M. Y.
- Devos, R.**, *See* Beaumont, A. J.
- Dieplinger, H.**  
 —; Lipoprotein(a) in health and disease, A91, 439
- Dils, R. R.**, *See* Khattab, A. D.
- Di Tullio, G.**, *See* Godi, A.
- Dive, C.**, *See* James, D.; Khanna, S.; Taylor, S. T.  
 —; Suppression of apoptosis by v-Abl protein tyrosine kinase, A136
- Divecha, N.**, *See* Ciruela, A.; Hinchliffe, K. A.
- Dixey, J.**, *See* Middleton, J.
- Djellali, H.**, *See* Larguet, F.  
 —; Larguet, F.; Arrar, L.; Benboubetra, M.  
 Effect of rabbit IgG anti-xanthine oxidoreductase antibodies on NADH and oxidase activities of human and bovine xanthine oxidoreductase, A151
- Dobson, H.**, *See* Palmer, C. N. A.
- Docherty, G.**, *See* Gaw, A.
- Doering, T.**, *See* Kolter, T.
- Doherty, A.**, *See* Coutinho, V.
- Doherty, M.**, *See* Turner, K.
- Doherty, M. K.**, *See* Chapman, S. K.  
 —; Chapman, S. K.; Reid, G. A.  
 Kinetic analysis of a unique fumarate reductase, A57
- Dollery, W.**, *See* Chaloner, C.
- Dolly, J. O.**, *See* Fletcher, L. M.
- Dolly, O.**  
 —; Building K-channels, A71
- Dolphin, A. C.**  
 —; Involvement of the N-terminus of neuronal calcium channels in G-protein modulation, A25
- Domin, J.**, *See* Row, P. E.

- Dominiczak, A. F.**, *See* Alexander, M. Y.  
**Doorty, K. B.**  
—; Avella, M.; Pitsillides, A. A.; Goode, N. T.  
Role of mitogen-activated protein kinases in the response of osteoblasts to prostaglandins, A105  
**Dorman, N.**, *See* Lever, A. M. L.  
**Douglas, J.**, *See* Chaloner, C.  
**Dove, S. K.**, *See* McEwen, R. K.  
—; McEwen, R. K.; Cooke, F. T.; Parker, P. J.; Michell, R. H.  
Phosphatidylinositol 3,5-bisphosphate: a novel lipid that links stress responses to membrane trafficking events, A77, 674  
**Doward, S.**, *See* Purkiss, J. R.  
**Dowd, A. J.**, *See* Brady, C. P.  
**Dower, S. K.**, *See* Carlotti, F.  
**Downes, C. P.**, *See* Currie, R. A.; Pass, I.; Ponnambalam, S.  
**Downward, J.**, *See* Lockyer, P. J.  
—; The role of phosphoinositide 3-kinase in the regulation of cell survival and apoptosis, A74  
**Dowsett, M.**  
—; Aromatase and breast cancer risk, A14  
**Dowthwaite, G. P.**, *See* Ward, A. C.  
**Dreja, H.**, *See* Chernajovsky, Y.  
**Drmota, T.**, *See* Milligan, G.  
—; Milligan, G.  
Characterization of three subtypes of rat thyrotropin-releasing hormone receptor, A115  
**Dryden, D. T. F.**  
—; Davies, G. D.; Martin, I.; Powell, L. M.; Murray, N. E.; Ellis, D. J.; Berge, T.; Edwardson, J. M.; Henderson, R. M.  
The assembly of the EcoK1 type 1 DNA restriction/modification enzyme and its interaction with DNA, A87, 691  
**Dubois, T.**  
—; Kerai, P.; Howell, S.; Jackson, T. R.; Theibert, A. B.; Aitken, A.  
Casein kinase I (CKI) associates with Centaurin- $\alpha$ , A105  
**Dubrovskaya, N. M.**, *See* Plesneva, S. A.  
**Dubus, A.**, *See* Frère, J.-M.  
**Duffy, P. E.**  
—; Fried, M.  
Malaria during pregnancy: parasites, antibodies and chondroitin sulphate A, A84, 478  
**Dunn, M. J.**  
—; Two-dimensional electrophoretic methods for proteome analysis: an update, A67  
**Durley, R. C. E.**, *See* Cunane, L. M.  
**Dutton, P. L.**, *See* Sharp, R. E.  
—; Structure, function and dysfunction of the cytochrome  $bc_1$  complex Q<sub>o</sub> site: X-ray crystallography versus EPR spectroscopy, A81  
**Eckerskorn, C.**, *See* Schwager, S. L. U.  
**Eckner, R.**  
—; p300 and cAMP-response-element-binding-protein binding protein (CBP) in mouse development and growth control, A64  
**Edmead, C.**, *See* Falati, S.  
**Edwards, N.**  
—; Roberts, I.; High, N.  
Role of lipopolysaccharide in adhesion of *Helicobacter pylori* to gastric epithelium cells, A110  
**Edwards, P. R.**, *See* Athanassopoulou, N.  
**Edwards, R.**  
—; Turnover and sequestration of plant secondary products, A18  
**Edwards, Y. J. K.**, *See* Perkins S. J.  
**Edwardson, J. M.**, *See* Dryden, D. T. F.  
**Ehlers, M. R. W.**, *See* Schwager, S. L. U.  
**Eidne, K. A.**, *See* Heding, A.; Willars, G. B.  
**Eilers, A.**  
—; Whittfield, J.; Vekrellis, K.; Neame, S. J.; Shah, B.; Ham, J.  
c-Jun and Bax: regulators of programmed cell death in developing neurons, 790  
**Eilers, M.**, *See* Reeves, P. J.  
—; Control of cell proliferation by the *myc* proto-oncogene, A63  
**El Far, O.**, *See* O'Connor, V.  
**Eliopoulos, A. G.**, *See* Young, L. S.  
**Elliott, J.**, *See* Grieve, D. J.  
**Elliott, M. C.**, *See* Fowler, M. R.  
**Ellis, D. J.**, *See* Dryden, D. T. F.  
**Elmore, M. A.**, *See* McKenzie, E. A.  
—; McKenzie, E. A.; Stamps, A. C.; Hill, M. E.; Makda, A. A.; Maughfling, E. J. R.; Finnen, M. J.  
Conserved His and Asp residues are critical for enzyme activity in human homologues of lysophosphatidic acid acyltransferases, A125  
**Embleton, M. L.**, *See* Halford, S. E.  
**Emsley, J.**  
—; Structural studies of the integrin  $\alpha 2$ -I domain, A131  
**Espositi, M. D.**  
—; Ghelli, A.  
Ubiquinone and inhibitor sites in complex I: one, two or three?, 606  
**Evans, A. T.**, *See* Brant, S.  
**Evans, B.**, *See* Clark, L.  
**Evans, D.**, *See* Myers, F. A.  
**Evans, N.**  
—; Kingston, A.  
Effects of Pertussis toxin on group 1 metabotropic glutamate receptors expressed in a Syrian hamster tumour cell line, A116  
**Evans, P. D.**, *See* Rudling, J. E.  
**Fágáin, C. Ó.**, *See* Green, S.  
**Faig, M.**, *See* Bianchet, M. A.  
**Fakhoury, H.**, *See* Baldock, C.; Shuttleworth, A.  
**Falati, S.**  
—; Edmead, C.; Poole, A.  
Activation of glycoprotein GP Ib-IX, a receptor for von Willebrand factor, initiates a cascade of tyrosine-phosphorylation-signalling events in human platelets, A120  
**Falson, P.**, *See* Groves, J. D.  
**Fanti, P.**, *See* Franke, A. A.  
**Farndale, R. W.**, *See* Knight, C. G.  
**Farrow, S. N.**  
—; Death receptors, NF- $\kappa$ B activation and apoptosis: the potential for therapeutic intervention, A134, 812  
**Faulder, P. F.**  
—; Nieh, Y. P.; Raftery, J.; Habash, J.; Haedener, A.; McSweeney, S.; Schotte, F.; Ursby, T.; Wulff, M.; Thompson, A. W.; Helliwell, J. R.  
Structure and function studies of hydroxymethylbilane synthase using SRS and ESRF, A39  
**Fedorovich, I. B.**  
—; Converse, C. A.; Ostrovsky, M. A.  
Interphotoreceptor retinoid-binding protein (IRBP): photosensitized light-induced damage and binding properties, A130  
**Feinmark, S. J.**, *See* Bailey, J. M.  
**Fell, D. A.**, *See* Brightman, F. A.; Thomas, S.  
—; Traditional concepts of metabolic control mislead more than enlighten, A20  
**Feng, J.**, *See* Allen, P. B.  
**Fennell, J.**, *See* Alexander, M. Y.  
**Ferguson, G.**  
—; Palmer, T. M.  
Regulation of A<sub>3</sub> adenosine receptor internalization by receptor phosphorylation, A115  
**Ferguson, M. A. J.**, *See* Allen, S.; Mehler, A.  
**Ferguson, S. M.**, *See* Ward, A.  
**Finnen, M. J.**, *See* Elmore, M. A.; McKenzie, E. A.  
**Firbank, S.**, *See* Johnson, M. S.  
**Fisher, N.**, *See* Rich, P.  
**Fiskerstrand, C. E.**, *See* Mackenzie, A.; Lovejoy, E.; Quinn, J. P.  
Transcriptional regulation of the serotonin transporter gene, A94  
**Fitzgerald, K. A.**  
—; O'Neill, L. A. J.  
Hyaluronic acid fragments activate nuclear factor (NF) $\kappa$ B in ECV304 cells via its principal cell-surface receptor CD44, A43  
**FitzGerald, R.**, *See* O'Cinn, G.  
**Flachmann, R.**  
—; Overexpression of eukaryotic membrane proteins in transgenic tobacco: pioneering the 'green expression system' with the purification and crystallization of recombinant light-harvesting complex II, 923  
—; Purification and crystallization of His<sub>6</sub>-tagged membrane proteins produced in transgenic tobacco, A142  
**Flaus, A.**, *See* Whithouse, I.  
**Fletcher, L. M.**  
—; Foran, P. G. P.; Oatey, P. B.; Mohammed, N.; Dolly, J. O.; Tavaré, J. M.  
Protein kinase B stimulates translocation of GLUT4, but not GLUT1 or transferrin receptors: the involvement of 23 kDa synaptosome-associated protein (SNAP-23) and cellubrevin, A105  
—; Tavaré, J. M.  
Divergent signalling mechanisms involved in insulin-stimulated GLUT4 vesicle trafficking to the plasma membrane, 677  
**Fletcher, S.**, *See* Horsnell, W. G. C.  
**Flick, K.**, *See* Stoddard, B. L.  
**Flint, D. J.**, *See* Allen, G. J.  
**Flint, H. J.**, *See* Robertson, J. M.  
**Fong, C. W.**, *See* Milligan, G.  
**Foord, S. M.**  
—; Wise, A.; Brown, J.; Main, M. J.; Fraser, N. J.  
The N-terminus of RAMPs is a critical determinant of the glycosylation state and ligand binding of calcitonin receptor-like receptor, A71, 535  
**Foran, P. G. P.**, *See* Fletcher, L. M.  
**Ford, A.**, *See* Bennett, A. J.  
**Ford, I.**, *See* Gaw, A.  
**Foster, C.**, *See* Bianchet, M. A.  
**Fotinopoulou, A.**  
—; Cook, A.; Turner, G. A.  
Rapid lectin methods for investigating the carbohydrate profile of therapeutic recombinant plasminogen: differences in culturing conditions result in different glycosylation patterns, A111  
**Fowler, M. R.**  
—; Atanassova, A. I.; Scott, N. W.; Slater, A.; Elliott, M. C.  
Characterization of the cell division cycle-related gene *Bvcrkl*: gene structure and expression in *Beta vulgaris*, A96  
**Fox, A. H.**  
—; Holmes, M.; Mackay, J.; Crossley, M.

- Activity of the transcription factor**  
FOG-1 is potentiated by its ability to contact GATA-1 through multiple zinc fingers, A99
- Frame, F. M.**  
—; Dalziel, R. G.  
Role of ORF50 in alcalphine herpes virus-1 gene expression, A98
- Francis, D.**, *See* Baldwin A.
- Franke, A. A.**  
—; Yu, M. C.; Maskarinec, G.; Fanti, P.; Zheng, W.; Custer, L. J.  
Phytoestrogens in human biomatrices including breast milk, A14, 308
- Fraser, N. J.**, *See* Foord, S. M.
- Frayne, J.**, *See* Beaumont, A. J.
- Freeman, H. C.**, *See* Bond, C. S.
- Freeth, J. S.**  
—; Igball, S.; Rohill, J.; Watt, S.; Lewis, C. E.; Kingsman, S. M.; Naylor, S.  
Development of retroviral transduced haematopoietic stem cells towards a novel approach to cancer gene therapy, A148
- Freissmuth, M.**, *See* O'Connor, V.
- Frère, J.-M.**  
—; Dubus, A.; Galleni, M.; Matagne, A.; Amicosante, G.  
Mechanistic diversity of  $\beta$ -lactamases, A4, 58
- Frère, J. M.**, *See* Damblon, C.
- Frervert, U.**  
—; Cell surface and intracellular binding sites for the malaria CS protein, A84  
—; Heparan sulphate and RNA-binding motifs in the malaria circumsporozoite protein, 482
- Fried, M.**, *See* Duffy, P. E.
- Friedrich, J. K.**, *See* Cabart, P.
- Friedrich, J. K.**, *See* Cabart, P.; Zomerdijk, J. C. B. M.  
Role of mammalian selectivity factor (SL1) in promoter-selective transcriptional regulation of RNA polymerase I, A98
- Fris, L. M.**, *See* Purkiss, J. R.
- Froud, D.**, *See* Guillot, C.
- Fruman, A.**  
—; Phosphoinositide 3-kinase knockout mice: role of p85 $\alpha$  in B cell development and proliferation, A73
- Fruman, D. A.**  
—; Snapper, S. B.; Yballe, C. M.; Alt, F. W.; Cantley, L. C.  
Phosphoinositide 3-kinase knockout mice: role of p85 $\alpha$  in B cell development and proliferation, 624
- Frydych, C.**, *See* Greenwood, C. J.
- Fujii, M.**, *See* Yagisawa, H.  
—; Ohtsubo, M.; Ogawa, T.; Kamata, H.; Hirata, H.; Yagisawa, H.  
Visualization of dynamic translocation of phospholipase C- $\delta$ 1 in living cells, A107
- Futerman, A. H.**  
—; Boldin, S. A.; Brann, A. B.; Pellet, D.; Meivar-Levy, I.; Zisling, R.  
Regulation of sphingolipid and glycosphingolipid metabolism during neuronal growth and development, A80, 432
- Galanis, A.**, *See* Yang, S.
- Galleni, M.**, *See* Damblon, C.; Frère, J.-M.
- Gamblin, S.**  
—; The structural basis of small G-protein deactivation by GTPase-activating proteins (GAPs), A66
- Gardner, D. S.**, *See* Langley-Evans, S. C.
- Garguilo, B.**, *See* Roberts, S.
- Garner, C. D.**, *See* Lloyd, M. D.
- Gaston, K.**, *See* Webster, K.
- Gaughan, L.**  
—; Brady, M. E.; Cook, S.; Neal, D. E.; Robson, C. N.  
The histone acetyltransferase Tip60 is a co-activator protein of the human androgen receptor protein, A121
- Gaullier, J.-M.**  
—; Gillooly, D.; Simonsen, A.; Stenmark, H.  
Regulation of endocytic membrane traffic by phosphatidylinositol 3-phosphate, 666
- Gaw, A.**  
—; Brown, E. A.; Docherty, G.; Ford, I.  
Use of the West of Scotland Coronary Prevention Study bio-bank to provide new insights into the control of plasma lipoprotein(a) concentrations, A92, 459
- Gerrard, L.**  
—; Harrison, P. T.; Dalziel, R. G.; Quinn, J. P.  
Neuronal specific and nerve-growth-factor-inducible expression directed by the preprotachykinin-A promoter delivered by an adeno-associated viral vector, A94
- Getmanova, E. V.**, *See* Reeves, P. J.
- Ghelli, A.**, *See* Esposti, M. D.
- Gibney, B. R.**, *See* Sharp, R. E.
- Gilani, A. H.**  
—; Janbaz, K. H.; Saeed, S. A.  
Anti-hepatotoxic activity of caffeoic acid: a phenolic compound from *Artemisia scoparia*, A145
- Gilardi, G.**, *See* Sadeghi, S. J.
- Gilbert, R.**  
—; Rossjohn, J.; Parker, M.; Mitchell, T.; Rowe, A.; Chen, S.; Jiménez, J.; Saibil, H.; Byron, O.; Andrew, P.  
Structure and mechanism of the bacterial protein toxin, pneumolysin, A55
- Gildberg, A.**, *See* Gilmartin, L.
- Gillingham, A. K.**  
—; Koumanov, F.; Pryor, P. R.; Reaves, B. J.; Holman, G. D.  
Association of the adaptor complexes AP1 and AP3 with GLUT4 vesicles: implications for GLUT4 compartmentalization, A100
- Gillooly, D.**, *See* Gaullier, J.-M.
- Gilmartin, L.**  
—; Roper, J.; Ravellec, R.; Gildberg, A.; Stenberg, E.; Harris, J. E.; Jervis, L.  
Immunostimulatory peptides from fish waste hydrolysates, A53
- Gilpin, M.**, *See* Brown, M. J. B.
- Gluckman, P.**  
—; The maternal, fetal and postnatal somatotrophic axes in intra-uterine growth retardation, A4
- Gluckman, P. D.**, *See* Oliver, M. H.
- Glumoff, T.**, *See* Heimo, H.
- Goan, K. A.**  
—; Thomson, F. J.  
The calcium-signalling M<sub>1</sub> muscarinic receptor regulates gene expression under cAMP-response element control, A119
- Godi, A.**  
—; Santone, I.; Pertile, P.; Marra, P.; Di Tullio, G.; Luini, A.; Corda, D.; De Matteis, M. A.  
ADP-ribosylation factor regulates spectrin skeleton assembly on the Golgi complex by stimulating phosphatidylinositol 4,5-bisphosphate synthesis, 638
- Goldman, A.**, *See* Heimo, H.
- Gondry, M.**, *See* Mowat, C. G.
- Gonzalez, A.-M.**, *See* Barrett, L. B.
- González-García, A.**, *See* Jones, D. R.
- Goodall, J. J.**, *See* Wilkinson, A.-S.  
—; Wilkinson, A.-S.; Wharton, C. W.  
Investigation of chymotrypsin-ligand complexes using IR spectroscopy: a model for the study of  $\beta$ -lactamases?, A38
- Goodchild, R. E.**  
—; Court, J. A.; Hobson, I.; Piggott, M. A.; Perry, R. H.; Ince, P.; Jaros, E.; Perry, E. K.  
Distribution of histamine H<sub>3</sub>-receptor binding in the normal human basal ganglia: comparison with Huntington's disease and Parkinson's disease cases, A33
- Goode, N. T.**, *See* Doorty, K. B.; Greenaway, E. C.; Horsnell, W. G. C.
- Gormley, N. A.**, *See* Halford, S. E.
- Gorton, L.**, *See* Ramanavicius, A.
- Gould, D.**, *See* Chernajovsky, Y.
- Gould, G. W.**  
—; Role for ADP-ribosylation factors and phosphoinositides in insulin-regulated membrane trafficking in 3T3-L1 adipocytes, A77
- Gow, N. A. R.**  
—; Bates, S.; Brown, A. J. P.; Buurman, E. T.; Thomson, L. M.; Westwater, C.  
*Candida* cell wall mannosylation: importance in host-fungus interaction and potential as a target for the development of antifungal drugs, A86, 512
- Gowers, D. M.**, *See* Halford, S. E.
- Grant, G.**, *See* Naughton, P. J.; Robertson, J. M.
- Grant, M. H.**, *See* Ning, J.
- Grant, S. G. N.**  
—; Enhanced long-term potentiation and impaired learning in post-synaptic density 95 mutant mice, A70
- Grasso, S.**, *See* Wilson, E. K.
- Green, A.**, *See* Marshall, F. H.
- Green, A. J.**, *See* Munro, A. W.  
—; Munro, A. W.; Rivers, S. L.; Chapman, S. K.; Reid, G. A.  
Bio I: is it a cytochrome P-450?, A44  
—; Rivers, S. L.; Noble, M. A.; Reid, G. A.; Chapman, S. K.; Munro, A. W.  
Expression and characterization of *Bacillus subtilis* P450 Biol, A108
- Green, S.**  
—; Fágáin, C.Ó.  
Peptide synthesis with modified trypsin, 727
- Greenaway, E. C.**  
—; Cunningham, F. M.; Goode, N. T.  
Expression and localization of protein kinase C isotypes in equine eosinophils, A106
- Greenfield, J. J. A.**, *See* High, S.
- Greengard, P.**, *See* Allen, P. B.
- Greenwood, C. J.**  
—; Moore, K. J.; Allinson, T.; Burton, G.; Frydych, C.; Harrington, F.; Nicholson, N.; Hartley, M.; Pearson, M.; Pope, A. J.  
Kinetic mechanism of aspartate- $\beta$ -semialdehyde dehydrogenase and its interaction with small molecule inhibitors, A38
- Greenwood, J.**, *See* Mills, J.
- Gribbon, P.**, *See* Hardingham, T.
- Grieve, D. J.**  
—; Avella, M. A.; Elliott, J.; Botham, K. M.  
Effects of hypercholesterolaemia on endothelial cell function and chylomicron remnant uptake by the rat aorta, A51
- Griffiths, G.**

- ; Barrett, B.; Cook, N.; Roberts, I. S.  
Biosynthesis of the *Escherichia coli* K5 capsular polysaccharide, 507
- Griffiths, L.**, *See* Binley, K.
- Grisshammer, R.**  
—; Averbeck, P.; Sohal, A. K.  
Improved purification of a rat neurotensin receptor expressed in *Escherichia coli*, A140, 899
- Groarke, A.**  
—; Milligan, G.  
Activation and desensitization of the thyrotropin-releasing hormone receptor visualized by monitoring cellular redistribution of a  $\beta$ -arrestin-1-green fluorescent protein fusion protein, A118
- Groarke, D. A.**, *See* Milligan, G.
- Grossman, E. P. S.**, *See* Hendrick, A. G.
- Groves, J. D.**  
—; Parker, M. D.; Askin, D.; Falson, P.; le Maire, M.; Tanner, M. J. A.  
Heterologous expression of the red-cell anion exchanger (band 3; AE1), A141, 917
- Groves, M. A. T.**, *See* Ward, A.
- Guillot, C.**  
—; David, A.; Coathalem, H.; Froud, D.; Tesson, L.; Moullier, P.; Le Mauff, B.; Usal, C.; Soulliou, J.-P.; Cuturi, M. C.; Anegon, I.  
Adenovirus-mediated cytokine gene transfer in heart allograft transplantation, 864
- Gul, S.**, *See* Hussain, S.; Sonkaria, S.
- Guss, J. M.**, *See* Bond, C. S.
- Gustafsson, M. C. U.**, *See* Palmer, C. N. A.
- Haass, C.**, *See* Steiner, H.
- Habash, J.**, *See* Faulder, P. F.
- Habermüller, K.**, *See* Ramananicius, A.
- Haedener, A.**, *See* Faulder, P. F.
- Hajdu, J.**  
—; Penicillin and cephalosporin biosynthesis, A4
- Halford, S. E.**  
—; Bilcock, D. T.; Stanford, N. P.; Williams, S. A.; Milsom, S. E.; Gormley, N. A.; Watson, M. A.; Bath, A. J.; Embleton, M. L.; Gowers, D. M.; Daniels, L. E.; Parry, S. H.; Szczelkun, M. D.  
Restriction endonuclease reactions requiring two recognition sites, A88, 696
- Hall, L.**, *See* Beaumont, A. J.
- Hall-Jackson, C. A.**  
—; Cross, D. A. E.; Jenkins, D. M.; Smythe, C.  
Biochemical characterization of ATR protein kinase, A97
- Ham, J.**, *See* Eilers, A.  
—; c-Jun and Bax: regulators of programmed cell death in developing neurons, A135
- Hamilton, C. A.**, *See* Alexander, M. Y.
- Handman, E.**, *See* Ilg, T.
- Hanley, J. G.**, *See* Brandon, N. J.
- Hanson, P. J.**, *See* Johal, K.
- Hanyaloglu, A.**, *See* Heding, A.
- Haran, M.**, *See* Cutler, P.
- Harding, J. E.**, *See* Oliver, M. H.
- Hardingham, G. E.**  
—; Chawla, S.; Cruzalegui, F. H.; Bading, H.  
Control of recruitment and activation of cAMP-response-element-binding protein binding protein (CBP) determines gene regulation by N-methyl-D-aspartate (NMDA) receptors and L-type calcium channels, A93
- Hardingham, T.**
- ; Heng, B. C.; Gibbon, P.  
New approaches to the investigation of hyaluronan networks, A11, 124
- Hargreaves, P. G.**, *See* Croucher, P. I.
- Harmar, A. J.**, *See* Lutz, E. M.
- Harnett, M. M.**, *See* Melendez, A. J.
- Harrington, F.**, *See* Greenwood, C. J.
- Harrington, L. S.**  
—; Baylis, H. A.; Jackson, T. R.  
Centaurin proteins as potential targets of phosphoinositide signalling in *Caenorhabditis elegans*, A104
- Harris, C.**, *See* Pilone, M. S.
- Harris, J. E.**, *See* Gilmartin, L.
- Harrison, P. T.**, *See* Gerrard, L.
- Hartley, M.**, *See* Greenwood, C. J.
- Harwood, J.**, *See* Baldwin A.
- Harwood, J. L.**, *See* Curtis, C. L.; Manaf, A. M.  
—; Ramli, U. S.; Page, R. A.; Quant, P. A.  
Modelling lipid metabolism in plants: a slippery problem?, A20, 285
- Harzallah, D.**  
—; Larouc, L.  
The decrease of tabtoxin produced by *Pseudomonas tabaci* in batch culture, A153
- Hascall, V. C.**, *See* Tammi, R.  
—; Colon-derived smooth-muscle cells treated with double-stranded RNA (poly I:C) increase adherence of mononuclear leucocytes via hyaluronan-CD44 interactions, A10
- Hastings, S. F.**, *See* Murray, L.
- Haupt, K.**  
—; Mosbach, K.  
Molecularly imprinted polymers in chemical and biological sensing, 344
- Hawkes, N. A.**  
—; Roberts, S. G. E.  
Analysis of the role of human transcription factor TFIIB in transcription-start-site selection, A93
- Hawkins, P. T.**  
—; Searching for novel targets of PtdIns(3,4,5)P<sub>3</sub> and PtdIns(3,4)P<sub>2</sub>, A78
- Hawkins, R. E.**  
—; Genetic approaches to vaccination for lymphoma, A139
- Hawtin, S. R.**  
—; Wheatley, M.  
Molecular determinants for high-affinity binding to the vasopressin V<sub>1a</sub> receptor, A33
- Hay, S. M.**, *See* Rees, W. D.
- Hazlehurst, Z. V.**  
—; Church, V. L.; Kennedy, S. M.; Ashton, B. A.  
Recovery of mRNA from chondrocytes in agarose, A42
- Hazelwood, S.**, *See* Howell, M.; Williams, T.
- Heales, S. J. R.**, *See* Stone, R.
- Heasman, L.**, *See* Bispham, J.; Wilson, V.
- Heath, P.**, *See* Stoddard, B. L.
- Heathcote, P.**  
—; The quinone-binding site in type I (ferredoxin-reducing) reaction centres, A82
- Hedge, V. L.**  
—; Williams, G. T.  
Caspases and commitment to cell death, A133, 797
- Heding, A.**, *See* Willars, G. B.  
—; Vrecl, M.; Hanyaloglu, A.; Taylor, P. L.; Sellar, R.; Byrne, B.; Willars, G. B.; Eidne, K. A.  
Gonadotropin-releasing hormone receptors with added cytoplasmic C-terminal tails undergo accelerated  $\beta$ -arrestin-dependent internalization, A34
- Heering, D.**, *See* Turner, K.
- Heikinheimo, P.**, *See* Heimo, H.
- Heimo, H.**  
—; Jaakola, V.-P.; Kapat, A.; Heikinheimo, P.; Rantanen, M.; Glumoff, T.; Goldman, A.  
Expression of human  $\alpha_2$ C2-adrenergic receptor in different host-vector systems, A151
- Heinrich, M.**, *See* Wickel, M.
- Heinrich, R.**  
—; Control and structural design of glycolysis: an evolutionary approach, A20
- ; Meléndez-Hevia, E.; Montero, F.; Nuño, J. C.; Stephani, A.; Waddell, T. G.  
The structural design of glycolysis: an evolutionary approach, 294
- Heldermon, C.**, *See* Tlapak-Simmons, V. L.
- Helin, K.**  
—; Regulation of cell proliferation by the E2F transcription factors, A64
- Helliwell, J. R.**, *See* Faulder, P. F.
- Hemmings, A. M.**, *See* Kleanthous, C.
- Hemmings, B. A.**  
—; Pleckstrin homology (PH) domains in signal transduction, A72
- Henderson, P. J. F.**, *See* Clough, J.; Venter, H.; Ward, A.
- Henderson, R. M.**, *See* Dryden, D. T. F.
- Hendrick, A. G.**  
—; Grossman, E. P. S.; Jackson, T. R.  
Centaurin  $\gamma$ —a novel G-protein?, A103
- Heng, B. C.**, *See* Hardingham, T.
- Henley, J. M.**, *See* Coutinho, V.; Noel, J.; Pickard, L.; Vernon, E.
- Herbert, R. B.**, *See* Venter, H.
- Hergenc, G.**  
—; Ozsullu, T.; Cetinalp, P.; Besoluk, S.; Sonmez, B.  
Lipoprotein(a) levels in men with coronary artery occlusion and healthy male controls, A122
- Hermans, E.**  
—; Metabotropic glutamate receptor signalling, A25
- ; Nahorski, S. R.; Challiss, R. A. J.  
Heterologous mammalian expression systems for investigating the properties of metabotropic glutamate receptors, 164
- Hermannsson, M.**  
—; Bolton, M.; Wait, R.; Saklatvala, J.  
Investigation of the effect of interleukin-1 on articular cartilage by tandem electrospray mass spectrometry, A120
- Herr, W.**  
—; The herpes simplex virus VP16-induced complex: selective assembly of a transcriptional regulatory complex, A66
- Herrick, N. C.**, *See* Murdock, P. R.
- Hewitt, C. R. A.**, *See* Wright, T. J.
- Hickman, J. A.**, *See* Taylor, S. T.
- Hicks, S. J.**, *See* Sengupta, A.
- Higgins, C. F.**  
—; Towards gene therapy for cystic fibrosis, A137
- Higgins, J. M. G.**  
—; Cernadas, M.; Brenner, M. B.  
The A-domain of integrin  $\alpha_5\beta_1$  is involved in binding to E-cadherin, A145
- High, N.**, *See* Edwards, N.
- High, S.**  
—; Greenfield, J. J. A.; Meacock, S. L.; Oliver, J. D.  
Membrane-protein biosynthesis at the endoplasmic reticulum, A139, 883
- Hill, A.**

- ; Pallister, C.; Cowell, D.; Steventon, G.  
Purification of vitamin K 2,3-epoxide reductase, A129
- Hill, A. E.**  
—; Cytochromes c from *Shewanella putrefaciens* NCIMB400, A58
- Hill, H. A. O.**  
—; Davis, J. J.  
Biosensors: past, present and future, A27, 331
- Hill, M. E.**, *See* Elmore, M. A.; McKenzie, E. A.
- Hille, R.**, *See* Basran, J.; Roberts, P.; Scrutton, N. S.
- Hills, M. J.**  
—; Hobbs, D. H.  
Diacylglycerol acyltransferase: cloning and functional expression of a cDNA from *Arabidopsis thaliana*, A124
- Hinchliffe, K. A.**, *See* Ciruela, A.; Morris, J. B.
- ; Ciruela, A.; Letcher, A. J.; Irvine, R. F.  
Phosphorylation of Type II PtdIns5P 4-kinase II $\alpha$  by casein kinase II, A101
- ; Ciruela, A.; Morris, J. A.; Divecha, N.; Irvine, R. F.  
The type II PIPKins (PtdIns5P 4-kinases): enzymes in search of a function?, 657
- Hinshelwood, J.**, *See* Perkins S. J.
- ; Spencer, D. I. R.; Perkins, S. J.  
Identification of the C3B binding site in the recombinant von Willebrand factor type-A (vWF-A) domain of complement factor B by laser desorption/ionization MS and homology modelling, A144
- Hirata, H.**, *See* Fujii, M.
- Hirata, M.**, *See* Yagisawa, H.
- Hobbs, D. H.**, *See* Hills, M. J.
- Hobson, I.**, *See* Goodchild, R. E.
- Hochstrasser, D. F.**  
—; Present status of proteomics, A67
- Hodges, S.**, *See* Webster, N. J.
- Hoekstra, D.**  
—; Zegers, M. M. P.; van IJzendoorn, S. C. D.  
Membrane flow, lipid sorting and cell polarity in HepG2 cells: role of a subapical compartment, A79, 422
- Hoffmann, R.**  
—; Baillie, G. S.; MacKenzie, S. J.; Yarwood, S. J.; Houslay, M. D.  
Effects of mitogen-activated protein kinase [extracellular signal-regulated kinase-2 (ERK2)], and protein kinase A phosphorylation upon the cAMP-specific phosphodiesterase, A128
- Hogan, E. L.**, *See* Dasgupta, S.
- Hogg, N.**, *See* Leitinger, B.
- Holland, P.**, *See* Robertson, D. N.
- Hollingdale, M. R.**  
—; The A-domain of a malaria protein mediates infectivity, A132
- Holman, G. D.**, *See* Gillingham, A. K.
- Holmes, M.**, *See* Fox, A. H.
- Holness, M. J.**, *See* Langdown, M. L.
- Honour, J.**  
—; Pre-adrenarche androgens and glucocorticoids and blood pressure control, A7
- Hood, A.**, *See* Dajani, R.
- Hood, D. W.**  
—; Richards, J. C.; Moxon, E. R.  
*Haemophilus influenzae* lipopolysaccharide, A85, 493
- Hooper, N. M.**, *See* Ofner, L. D.; Pang, S.; Turner, A. J.; Walmsley, A. R.
- ; Parvathy, S.; Karran, E. H.; Turner, A. J.
- Angiotensin-converting enzyme and the amyloid precursor protein secretases, A23, 229
- Horsnell, W. G. C.**  
—; Fletcher, S.; Goode, N. T.  
The effect of protein kinase C on dynamin and endocytosis in *Schizosaccharomyces pombe*, A59  
Protein kinase C modulates the endocytic rate in murine neuroblastoma cells, A106
- Houghton, C.**  
—; Arnold, J.; Shearman, M.; Dawson, S.; Landon, M.; Mayer, R. J.; Layfield, R.  
*In vitro* expression and metabolism of presenilin-1 protein, A150
- Houslay, M. D.**, *See* Hoffmann, R.; McPhee, I.
- Hovius, R.**, *See* Blassey, H. D.
- Howell, M.**  
—; Hazlewood, S.  
Isolation and characterization of apoptosis-controlling genes from primate herpesviruses, A148
- Howell, S.**, *See* Dubois, T.
- Hoyer, D.**  
—; Clinical exploitation of 5-hydroxytryptamine receptor diversity, A26
- Hoyle, C. K.**, *See* Ward, A.
- Hsieh-Wilson, L.**, *See* Allen, P. B.
- Huang, L.-S.**, *See* Berry, E. A.
- Hudecek, J.**, *See* Munro, A. W.
- Huganir, R.**  
—; Organization of synaptic structure in the brain, A69
- Hughes, T. R.**, *See* Tengku-Muhammad, T. S.
- ; Cryer, A.; Ramji, D. P.  
Transcriptional regulation of macrophage lipoprotein lipase by interferon- $\gamma$ , A95
- Hume, R.**, *See* Stanley, E. L.
- Humphrey, P. P. A.**, *See* Koenig, J. A.
- Hunt, A. N.**, *See* Postle, A. D.; Rodway, H. A.
- ; Wright, S. M.; Postle, A. D.  
Capacity for phosphatidylcholine synthesis in the nuclear matrix of IMR-32 neuroblastoma cells, A124
- Hunt, M. C.**  
—; Alexson, S. E. H.  
Lipid regulation of gene expression, 378
- Hunte, C.**  
—; Structure of the cytochrome bc<sub>1</sub> complex from the yeast *Saccharomyces cerevisiae*, A81
- Hunter, J. N.**, *See* Lockett, C. M.
- Huntley, S.**, *See* Sengupta, A.
- Hurst, R. D.**, *See* Stone, R.
- Hussain, R.**, *See* Siligardi, G.
- Hussain, S.**  
—; Allen, K. K.; Connerton, I. F.; Cummings, N. J.; Gul, S.; Khan, A.; Taylor, M. A. J.; Thomas, E. W.; Verma, C.; Brocklehurst, K.  
Investigation of electrostatic and hydrogen and carboxyl bonding interactions of carboxylic Asp-158 $\rightarrow$ Asn with time-dependent inhibitors, A37
- Huston, E.**, *See* McPhee, I.
- Hutchinson, J. B.**  
—; Gender-specific brain formation of oestrogen in behavioural development, A5
- Huttner, W. B.**  
—; Lipid-protein interactions in the biogenesis of neurosecretory vesicles, A74
- Hyde, E. I.**, *See* Ray, P.
- Hyttinen, M.**, *See* Tammi, R.
- Ibrahim, O. H.**  
—; Bolsover, S.; Cockcroft, S.  
Phosphatidylinositol-transfer protein  $\alpha$  availability limits Ins(1,4,5)P<sub>3</sub>-mediated Ca<sup>2+</sup> signalling, A102
- Iles, R. A.**  
—; Beech, J. S.; Burns, S. P.; Cohen, R. D.  
Modelling metabolism *in vivo*: approaches using NMR, A20, 289
- Ilg, T.**  
—; Handman, E.; Stierhof, Y.-D.  
Proteophosphoglycans from *Leishmania* promastigotes and amastigotes, A86, 518
- Ince, P.**, *See* Goodchild, R. E.
- Ingelman-Sundberg, M.**  
—; The role of the membrane for proper function of hepatic microsomal P450s, A61
- Ingleedew, W. J.**, *See* Murray, L.
- ; Quinol-binding sites and ubisemiquinone stabilization in the *Escherichia coli* quinol oxidase, cytochrome bo<sub>3</sub>; a discussion of models for structure and function, A81
- ingleton, P.**, *See* Bispham, J.
- Insall, R.**, *See* Swigart, P.
- Iqbal, S.**, *See* Binley, K.; Freeth, J. S.
- Irvine, R. F.**, *See* Ciruela, A.; Hinchliffe, K. A.; Morris, J. B.  
—; Localization and regulation of type II PIPKins (PtdIns5P 4-kinases), A76
- Isacke, C.**, *See* Townsend, P.
- Itano, N.**  
—; Mammalian hyaluronan synthases and their functions, A10
- Iwata, S.**  
—; Quinone-binding sites in the cytochrome bc<sub>1</sub> complex from bovine heart, A82
- Jaakola, V.-P.**, *See* Heimo, H.
- Jackson, A. A.**, *See* Langley-Evans, S. C.
- Jackson, C.**, *See* Middleton, J.
- Jackson, D. A.**  
—; Bligh, H. F. J.  
Identification of the amylogenin gene of rice, A52
- Jackson, S. P.**  
—; Detection, repair and signalling of DNA double-strand breaks, 1
- Jackson, T. R.**, *See* Dubois, T.; Harrington, L. S.; Hendrick, A. G.
- James, D.**  
—; Dive, C.  
Activation of v-Abl tyrosine kinase suppresses apoptosis and regulates phosphorylation of protein kinase B (PKB) and the pro-apoptotic protein Bad, A147
- James, R.**, *See* Kleanthous, C.
- Janbaz, K. H.**, *See* Gilani, A. H.
- Jang, M.-H.**, *See* Basran, J.; Scrutton, N. S.
- Jaros, E.**, *See* Goodchild, R. E.
- Jarvis, S. M.**, *See* Johnson, D.; Leadsham, J. E.; Maddock, H. L.
- Jaseja, M.**, *See* Ray, P.
- Jeffrey, L.**, *See* Beaumont, A. J.
- Jelesarov, I.**, *See* Crane-Robinson, C.
- Jenkins, D. M.**, *See* Hall-Jackson, C. A.
- Jenkins, O.**, *See* Murdock, P. R.
- Jenkins, P. V.**, *See* Perkins S. J.
- Jervis, L.**, *See* Gilmartin, L.  
—; Core biochemistry: lessons from biological sciences, A9
- ; Problem-based learning: scaling-up issues, A31
- Jesmin**  
—; Nagy, J. M.; Cass, A. E. G.; Brown, K. A.  
Construction and expression of the truncated forms of the *katG* gene

- from *Mycobacterium tuberculosis*, A47
- Jiménez, J.**, *See* Gilbert, R.
- Johal, K.**  
—; Potter, C. L.; Hanson, P. J.  
Inhibition of apoptosis by nitric oxide donors in guinea-pig gastric mucous cells, A145
- Johnson, D.**  
—; Jarvis, S. M.  
Transport of purine nucleobases by COS-1 cells occurs via a nitrobenzylthioinosine-insensitive (ei) nucleoside transporter, A149
- Johnson, E.**, *See* Roberts, S.
- Johnson, L.**  
—; Protein kinase structure and mechanism, A1
- Johnson, M. S.**, *See* Lutz, E. M.; McCulloch, D. A.; Robertson, D. N.  
—; Lutz, E. M.; Firbank, S.; MacKenzie, C. J.; Mitchell, R.  
Expression of the human serotonin transporter in HEK 293 cells; interaction with an endogenous 5-HT<sub>7</sub> receptor, A118
- Johnston, L. H.**  
—; The end of mitosis in budding yeast, A66
- Jones, A. T.**, *See* Clague, M. J.
- Jones, C. W.**, *See* Mills, J.
- Jones, D.**, *See* Morgan, C. P.  
—; Bax, B.; Cockcroft, S.  
ADP-ribosylation factor GTPases in signal transduction and membrane traffic: independent functions?, 642  
—; Cockcroft, S.  
Role of ADP-ribosylation factor and phospholipase D in coat recruitment and regulated exocytic secretion, A103
- Jones, D. R.**  
—; González-García, A.; Martínez-A., C.; Carrera, A. C.; Mérida, I.  
Identification of phosphatidylinositol 3,5-bisphosphate in T-lymphocytes and its regulation by interleukin-2, A105
- Jonson, C.**, *See* Koundouris, A.
- Jordan, D. B.**  
—; Farnsworth and oxazolidinones: potent inhibitors of cytochrome bc<sub>1</sub>, A81  
—; Kranis, K. T.; Piccolelli, M. A.; Schwartz, R. S.; Sternberg, J. A.; Sun, K. M.  
Farnsworth and oxazolidinones: potent inhibitors of cytochrome bc<sub>1</sub>, 577
- Jovanovic, J. N.**, *See* Brandon, N. J.
- Jünemann, S.**  
—; Breton, J.; Rich, P. R.  
Fourier-transform infrared (FTIR) studies on the ferrous cyanide compound of bovine heart cytochrome oxidase, A128
- Jupp, O. J.**  
—; Anderson, H. M.; McFarlane, S. M.; Vandenabeele, P.; MacEwan, D. J.  
Selective activation by tumour necrosis factor-α receptor subtypes of cytosolic phospholipase A<sub>2</sub> in CrmA-expressing cells, A112
- Jurica, M.**, *See* Stoddard, B. L.
- Jury, J. A.**, *See* Beaumont, A. J.
- Kaelin, W. G.**  
—; Selective killing of cancer cells based on derepression of E2F transcription factors, A64
- Kalkbrenner, F.**  
—; Abel, A.; Wittau, N.; Schultz, G.  
Promiscuity and fidelity in receptor-G-protein coupling: cell cycle-
- dependent coupling of the vasopressin V<sub>1</sub> receptor, 158  
—; Cell-cycle-dependent coupling of vasopressin V<sub>1</sub>-receptor to G<sub>q/11</sub> and G<sub>i3</sub>, A25
- Kamata, H.**, *See* Fujii, M.
- Kapat, A.**, *See* Heimo, H.
- Karlsson, K.-A.**  
—; Bacterium-host protein-carbohydrate interactions and pathogenicity, 471
- Karlsson, K. A.**  
—; Bacterium-host protein-carbohydrate interactions and pathogenicity, A83
- Karran, E. H.**, *See* Hooper, N. M.
- Kass, G. E. N.**, *See* Koundouris, A.
- Katanaev, V. L.**, *See* Wymann, M. P.
- Kaur, R.**, *See* Koenig, J. A.
- Kaye, J. F.**, *See* Lever, A. M. L.
- Kellendonk, C.**, *See* Reichardt, H. M.
- Kellett, E.**  
—; Carr, I. C.; Milligan, G.  
G-protein activation and effector regulation by humans 5-HT<sub>1A</sub> receptor and the α subunit of G<sub>i1</sub> fusion proteins, A114
- Kelso, E.**  
—; McLean, J.; Cardosi, M.  
Electrochemical detection of secreted placental alkaline phosphatase, A151
- Kemp, G. J.**  
—; Roussel, M.; Bendahan, D.; Lefur, Y.; Cozzone, P. J.  
Regulation of ATP synthesis and proton handling in ischaemically exercising skeletal muscle, A48
- Kempner, E. S.**, *See* Tlapak-Simmons, V. L.
- Kennedy, S. M.**, *See* Hazlehurst, Z. V.
- Kerai, P.**, *See* Dubois, T.
- Keung, W. M.**  
—; Phytoestrogen sulfoconjugates as inhibitors of sterol sulphatase, A14
- Khan, A.**, *See* Hussain, S.
- Khan, N. S.**, *See* Das, I.
- Khanna, S.**  
—; Brown, R.; Ball, K.; Dive, C.  
v-Abl-mediated up-regulation of p21<sub>WAF1</sub> in growth-arrested and proliferating myeloid cells, A147
- Khattab, A. D.**  
—; Bowley, J.; Ali, I. S.; Bowley, A.; Dils, R. R.; Rana, M. Z.  
Immunolocalization of matrix metalloproteinase-3 (stromelysin-1) in carotid artery plaques, A43
- Kholodenko, B. N.**, *See* van Heeswijk, W. C.
- Khorana, H. G.**, *See* Reeves, P. J.
- Kiefer, H.**  
—; Maier, K.; Vogel, R.  
Refolding of G-protein-coupled receptors from inclusion bodies produced in *Escherichia coli*, A141, 908
- Kieffer, B.**, *See* Massotte, D.
- Kielty, C. M.**, *See* Baldock, C.; Ball, S. G.; Shuttleworth, A.
- Kim, S.-H.**, *See* Berry, E. A.
- King, L. A.**, *See* Possee, R. D.
- Kingsman, S. M.**, *See* Binley, K.; Freeth, J. S.
- Kingsman, A.**, *See* Binley, K.
- Kingston, A.**, *See* Evans, N.
- Kitamura, Y.**, *See* Mitra, A.
- Kittler, J. T.**, *See* Brandon, N. J.
- Klaassen, C. H. W.**, *See* DeGrip, W. J.
- Klatzmann, D.**  
—; Clinical trials of brain glioblastoma using retroviral vectors, A138
- Kleanthous, C.**  
—; James, R.; Hemmings, A. M.; Moore, G. R.
- Protein antibiotics and their inhibitors**, A4, 63
- ; Macromolecular complexes involving nuclease toxins, immunity proteins and DNA, A87
- Klein-Seetharaman, J.**, *See* Reeves, P. J.
- Kneale, G.**, *See* Chant, A.; Mernagh, D.; Smith, M. A.
- Knight, B.**, *See* Aslam, M.
- Knight, B. L.**, *See* Puckey, L. H.  
—; Gene structure of apolipoprotein(a) and the regulation of its expression, A92, 447
- Knight, C. G.**  
—; Morton, L. F.; Peachey, A. R.; Tuckwell, D. S.; Farndale, R. W.; Barnes, M. J.  
The collagen sequence, GFOGER, is a binding site for integrin α1 and α2 A-domains and fully mediates α2β1-dependent cell recognition by collagen, A144
- Knol, J.**, *See* Poolman, B.
- Knowles, P.**  
—; Galactose oxidase and topoquinone (TPQ)-dependent amine oxidase, A31
- Knudson, C. B.**  
—; Nofal, G. A.; Pamintuan, L.; Aguiar, D. J.  
The chondrocyte pericellular matrix: a model for hyaluronan-mediated cell-matrix interactions, A12, 142
- Kochanek, S.**  
—; Favourable expression and safety profiles with gutless adenoviral vectors, A136
- Koenig, J. A.**  
—; Kaur, R.; Humphrey, P. P. A.  
How does the internalization of G-protein-coupled receptor agonists relate to the internalization of their receptors?, A32
- Kohler, J. A.**, *See* Rodway, H. A.
- Kolter, T.**  
—; Doering, T.; Wilkening, G.; Werth, N.; Sandhoff, K.  
Recent advances in the biochemistry of glycosphingolipid metabolism, A79, 409
- Korzeniewski, B.**  
—; Theoretical studies on how ATP supply meets ATP demand, A19, 271
- Koumanov, F.**, *See* Gillingham, A. K.
- Koundouris, A.**  
—; Jonson, C.; Sanders, P. G.; Kass, G. E. N.; Carter, M. J.  
The effect of poliovirus infection on mitochondrial function, A55
- Kranis, K. T.**, *See* Jordan, D. B.
- Krönke, M.**, *See* Wickel, M.
- Ktistakis, N.**  
—; Intracellular transport and organelle morphology in cell lines with inducible overexpression of phospholipase D1 (PLD1) or of a PLD1-derived antisense fragment, A75
- Ktistakis, N. T.**  
—; Manifava, M.; Sugars, J.; Bi, K.; Roth, M. G.  
Cellular expression and function of phospholipase D1, 634
- Kuhliman, P. A.**  
—; Sasaki, N.; Ohkura, R.; Sutoh, K.; Bagshaw, C. R.  
Characterization of *Dictyoselium* myosin II mutated in the converter region, A38
- Kupzig, S.**, *See* Lockyer, P. J.
- Kuznetsova, L. A.**, *See* Plesneva, S. A.
- Kwan, A.**, *See* Roberts, S.

- Lambert, D. G.**, *See* Cembala, T. M.; Nicol, B.
- Lambert, M. S.**  
—; Avella, M.; Berhane, Y.; Shervill, E.; Botham, K. M.
- Preparation and evaluation of an antibody to rat hepatic lipase: effect on liver chylomicron remnant uptake, A51
- Lancaster, C. R. D.**  
—; The coupling of electron and proton transfer in the photosynthetic reaction centre from *Rhodopseudomonas viridis*, A82
- ; Quinone-binding sites in membrane proteins: what can we learn from the *Rhodopseudomonas viridis* reaction centre?, 591
- Landon, M.**, *See* Houghton, C.
- Lane, D. P.**  
—; Regulation of p53 stability: role of Mdm2 and nuclear export, A64
- Langdown, M. L.**  
—; Holness, M. J.; Sugden, M. C.
- Dexamethasone administration in adulthood leads to cardiac protein kinase C expression reminiscent of early development, A49
- Lange, C.**  
—; Bading, H.
- Contribution of intragenic sequences to calcium regulation of *c-fos* transcription, A99
- Langeberg, L. K.**, *See* Tavalin, S. J.
- Langley-Evans, S. C.**  
—; Sherman, R. C.; Welham, S. J. M.; Nwagwu, M. O.; Gardner, D. S.; Jackson, A. A.
- Intrauterine programming of hypertension: the role of the renin-angiotensin system, A6, 88
- Lapinskas, P.**  
—; Competitive production systems: cost/benefit/scale effects, A16
- Larguet, F.**, *See* Djellili, H.
- ; Djellili, H.; Baghiani, A.; Benboubetra, M.
- Kinetic inhibition studies of xanthine oxidase activity of both human and bovine milk xanthine oxidase (XO) by allopurinol, alloxanthine and uric acid, A152
- Larous, L.**, *See* Harzallah, D.
- Latchman, D. S.**  
—; Herpes virus vectors for gene therapy in the nervous system, A137, 847
- Latunde-Databe, G. O.**  
—; Becker, T.; Pool-Zobel, B. L.
- Effect of quercentin on genetic damage and proliferation of human colon tumour cells, A127
- Laurinavičius, V.**, *See* Ramanavičius, A.
- Lawler, K.**, *See* Bennett, A. J.; Sims, H. M.
- Lawson, R.**, *See* Whyte, M.
- Layfield, R.**, *See* Houghton, C.
- Leadbeater, C.**, *See* McIver, L.
- ; Campopiano, D. J.; Baxter, R. L.; Webster, S. P.
- Ferrodoxin NADP<sup>+</sup> reductase: identification of key residues involved in NADPH binding and electron transfer, A56
- Leadlay, P. F.**  
—; The enzymology of polyketide antibiotic biosynthesis, A3
- Leadsham, J. E.**  
—; Jarvis, S. M.
- Comparative study of purine transporters in drug-sensitive and drug-resistant *Trypanosoma equiperdum*, A149
- Le Bourdelles, B.**, *See* Meddows, E.
- Lederer, F.**, *See* Mowat, C. G.
- Lee, H.-J.**, *See* Lloyd, M. D.
- Lee, H. J.**  
—; Basran, J.; Lian, L.-Y.; Scrutton, N. S.
- Electron transfer in  $\phi$ -hydroxylation: analysis of rubredoxin reductase and rubredoxin, A46
- Leech, M. J.**  
—; Genetic engineering of plant secondary metabolism using particle bombardment, A15
- Lefur, Y.**, *See* Kemp, G. J.
- Legg, J.**, *See* Townsend, P.
- Leitinger, B.**  
—; Hogg, N.
- Integrin 1 domains and their function, A132, 826
- le Maire, M.**, *See* Groves, J. D.
- Le Mauff, B.**, *See* Guillot, C.
- Lemon, M. A.**  
—; Structural bias for high-affinity phosphoinositide binding by pleckstrin homology domains, A73, 617
- Leslie, A. G. W.**  
—; Abrahams, J. P.; Braig, K.; Lutter, R.; Menz, R. I.; Orriss, G. L.; van Raaij, M. J.; Walker, J. E.
- The structure of bovine mitochondrial F<sub>1</sub>-ATPase: an example of rotary catalysis, A2, 37
- Letcher, A. J.**, *See* Hinckliffe, K. A.
- Leung, H. Y.**, *See* Mehta, P. B.
- Lever, A. M. L.**  
—; Kaye, J. F.; McCann, E.; Chadwick, D.; Dorman, N.; Thomas, J.; Zhao, J.
- Lentivirus vectors for gene therapy, A136, 841
- Levick, J. R.**, *See* Scott, D.
- ; A simple theory for concentration polarization during ultrafiltration across a partially reflecting membrane in a stirred cell, A41
- Levine, T.**  
—; Munro, S.
- Function of oxysterol-binding protein homologues in budding yeast, A100
- Lewis, C.**, *See* Townsend, P.
- Lewis, C. E.**, *See* Freeth, J. S.
- Lian, C. L. Y.**, *See* Damblon, C.
- Lian, L.-Y.**, *See* Barsukov, I.; Lee, H. J.
- Lian, L. Y.**, *See* Tsan, P.
- Liang, W.-j.**, *See* Ward, A.
- Liberti, S.**, *See* Wilson, E. K.
- Liehr, J. G.**  
—; 4-Hydroxylation of oestrogens as a marker for mammary tumours, A14, 318
- Lillycrop, K. A.**, *See* Rodway, H. A.
- Litherland, G. J.**, *See* Ward, A.
- Liu, H.**  
—; McKenna, L. A.; Dean, M. F.
- An N-terminal link protein peptide stimulates biosynthesis of collagen and proteoglycans by explants of human articular cartilage, A40
- Liu, J.**, *See* Mayne, R.
- Lloyd, M. D.**  
—; Lee, H.-J.; Baldwin, J. E.; Schofield, C. J.; Charnock, J. M.; Garner, C. D.
- Studies on deacetoxycephalosporin C synthase, A36
- Lockett, C. M.**  
—; Hunter, J. N.
- Synthesis of hyaluronan by bacterial fermentation, A42
- Lockyer, P. J.**, *See* Cozier, G. E.
- ; Wennström, S.; Kupzig, S.; Venkateswarlu, K.; Downward, J.; Cullen, P. J.
- Identification of the Ras GTPase-activating protein GAP1<sup>m</sup> as an *in vivo* phosphatidylinositol 3,4,5-trisphosphate-binding protein, A104
- Loewen, M. C.**, *See* Reeves, P. J.
- Logan, A.**, *See* Barrett, L. B.
- Longstaff, C.**, *See* Patel, R. R.
- Lovejoy, E.**, *See* Fiskerstrand, C. E.
- Lowe, C.**  
—; Protein-ligand interactions: the gap between experiment and theory, A90
- Lowe, C. R.**  
—; Holographic biosensors, A28
- Lowenstein, P. R.**, *See* Castro, M. G.
- ; Cowen, R.; Thomas, C.; Castro, M. G.
- The basic science of brain-tumour gene therapy, A138, 873
- Lucocq, J. M.**, *See* Ponnambalam, S.
- Lucy, J. A.**, *See* Qu, J.; Stevenson, G. V. W.
- Luini, A.**, *See* Godi, A.
- Lümmen, P.**  
—; Biochemical aspects of *N*-heterocyclic complex-1 inhibitors with insecticidal activity, A83, 602
- Lutter, R.**, *See* Leslie, A. G. W.
- Lutz, E. M.**, *See* Johnson, M. S.; McCulloch, D. A.; Robertson, D. N.
- ; MacKenzie, C. J.; Johnson, M. S.; West, K.; Harmar, A. J.; Mitchell, R.
- Juxtaposition of VIP<sub>2</sub> (VPAC<sub>2</sub>) receptor extracellular domains is necessary for VIP, but not PACP, activation of the receptor, A118
- Luzio, J. P.**, *See* Row, P. E.
- Lynch, C.**, *See* McDonnell, S.
- MacCallum, D.**, *See* Tammi, R.
- MacCarthy-Morrogh, L.**  
—; Mouzakiti, A.; Townsend, P.; Brimmell, M.; Packham, G.
- Bcl-2-related proteins and cancer, 785
- MacDonald, I. D. G.**, *See* Munro, A. W.
- ; Pritchard, M. P.
- Investigation of cytochrome P-450 3A4 by surface-enhanced resonance Raman scattering, A36
- MacEwan, D. J.**, *See* Jupp, O. J.
- Maciewicz, R. A.**, *See* Wright, T. J.
- Mackay, J.**, *See* Fox, A. H.
- MacKenzie, A.**  
—; Fiskerstrand, C. E.; Quinn, J. P.
- Neuron restrictive silencer factor regulates the substance-P-encoding preprotachykinin-A gene, A95
- MacKenzie, C. J.**, *See* Johnson, M. S.; Lutz, E. M.; McCulloch, D. A.
- MacKenzie, S. J.**, *See* Hoffmann, R.
- MacKrell, J. J.**, *See* Young, K. W.
- Mackway-Jones, K.**, *See* Chaloner, C.
- Maddock, H. L.**  
—; Vine, S.; Pearson, J. D.; Jarvis, S. M.
- Characterization of purine transporters in L6 rat skeletal-muscle cells, A149
- Magnitsky, S.**, *See* Ohnishi, T.
- Maier, K.**, *See* Kiefer, H.
- Main, M.**, *See* Marshall, F. H.
- Main, M. J.**, *See* Foord, S. M.
- Makda, A. A.**, *See* Elmore, M. A.; McKenzie, E. A.
- Makheja, A. N.**, *See* Bailey, J. M.
- Malmqvist, M.**  
—; BIACORE: an affinity biosensor system, for characterization of biomolecular interactions, A28, 335
- Malthouse, J. P. G.**  
—; Using NMR as a probe of protein structure and function, 701
- Maltin, C. A.**, *See* Sneddon, A. A.
- Man, W.**, *See* Cutler, P.
- Manaf, A. M.**  
—; Harwood, J. L.

- Acyl-CoA:glycerol-3-phosphate acyltransferase from oil palm (*Elaeis guineensis*) tissues, A123  
**Manfield, I.**, *See* Chant, A.  
**Manifava, M.**, *See* Ktistakis, N. T.  
**Marcinkevičiene, L.**, *See* Ramanavičius, A.  
**Marino-Buslje, C.**  
 —; Martin-Martinez, M.; Mizuguchi, K.; Siddle, K.; Blundell, T. L. The insulin receptor: from protein sequence to structure, 715  
**Marks, P.**, *See* Mernagh, D.  
**Marra, P.**, *See* Godi, A.  
**Marshall, C. J.**  
 —; Small GTPases and cell cycle regulation, A61, 363  
**Marshall, F. H.**  
 —; Heterodimerization of  $\gamma$ -aminobutyric acid B (GABA<sub>B</sub>) receptors, A70  
 —; White, J.; Main, M.; Green, A.; Wise, A. GABA<sub>B</sub> receptors function as heterodimers, 531  
**Marti, E.**, *See* Ortega, F.  
**Martin, G. E. M.**, *See* Ward, A.  
**Martin, I.**, *See* Dryden, D. T. F.  
**Martinez-A., C.**, *See* Jones, D. R.  
**Martin-Martinez, M.**, *See* Marino-Buslje, C.  
**März, P.**, *See* Müllberg, J.  
**Maskarinec, G.**, *See* Franke, A. A.  
**Mason, R. M.**, *See* Scott, D.  
**Massotte, D.**  
 —; Baroche, L.; Pereira, C.; Suply, T.; Perret, B.; Kieffer, B.; Pattus, F. Optimization of human  $\mu$  opioid receptor expression in baculovirus-infected insect cells, A151  
**Matagne, A.**, *See* Frère, J.-M.  
**Mathews, F. S.**, *See* Cunane, L. M.  
 —; Flavocytochromes: structures and implications for electron transfer, A29  
**Maughfling, E. J. R.**, *See* Elmore, M. A.; McKenzie, E. A.  
**Maule, C. H.**, *See* Athanassopoulou, N.  
 —; Cholera toxin and G<sub>pro</sub>: a model membrane study of IAsys, A28  
**Maxwell, A.**  
 —; DNA gyrase and the mechanism of DNA supercoiling, A87  
 —; DNA gyrase as drug target, A3, 48  
**May, V.**, *See* Taylor, S.  
**Mayer, M. J.**, *See* Mitra, A.  
**Mayer, R. J.**, *See* Houghton, C.  
**Mayne, R.**  
 —; Ren, Z.-X.; Liu, J.; Cook, T.; Carson, M.; Narayana, S. VIT-1: the second member of a new branch of the von Willebrand factor A domain superfamily, A132, 832  
**McCann, E.**, *See* Lever, A. M. L.  
**McCulloch, D. A.**, *See* Robertson, D. N.  
 —; Lutz, E. M.; Johnson, M. S.; MacKenzie, C. J.; Mitchell, R. Role of receptor intracellular loop 3 in the differential activation of phospholipase D by VPAC and PAC<sub>1</sub> receptors, A118  
**McDonnell, M.**, *See* O'Cuinn, G.  
**McDonnell, S.**  
 —; Morgan, M.; Lynch, C. Role of matrix metalloproteinases in normal and disease processes, 734  
**McEwen, R. K.**, *See* Dove, S. K.  
 —; Michell, R. H.; Dove, S. K. Mammalian PtdInsP kinases: analysis of their PtdInsP<sub>2</sub> specificity *in vivo* by expression on FAB1-deleted yeast, A102  
**McFadyen, M. C. E.**  
 —; Breeman, S.; Miller, I. D.; Melvin, W. T.; Murray, G. I. Expression of cytochrome P4501B1 in ovarian cancer, A124  
**McFarlane, S. M.**, *See* Jupp, O. J.  
**McGuire, J.**, *See* Taylor, S.  
**McIlhinney, R. A. J.**, *See* Ciruela, F.; Meddows, E.; Soloviev, M. M.  
**McIver, L.**  
 —; Leadbeater, C.; Campopiano, D. J.; Baxter, R. L.; Munro, A. W. Characterization of ferredoxin (flavodoxin) NADP<sup>+</sup> reductase and flavodoxin: key components of electron transfer in *Escherichia coli*, A56  
**McKenna, L. A.**, *See* Liu, H.  
**McKenzie, E. A.**, *See* Elmore, M. A.  
 —; Rowe, R. J.; Burfoot, M. S.; Elmore, M. A.; Hill, M. E.; Makda, A. A.; Maughfling, E. J. R.; Stamps, A. C.; Finnem, M. J. Identification and cloning of novel yeast *Saccharomyces cerevisiae* lysophosphatidic acid acyltransferase homologues, A124  
**McKeown, B. J.**, *See* Ward, A.  
**McKie, A.**, *See* Pyne, S.  
**McKnight, A. T.**, *See* Nicol, B.  
**McLauchlan, H. J.**, *See* Ponnambalam, S.  
**McLean, A.**, *See* Milligan, G.  
**McLean, A. J.**  
 —; Milligan, G. Receptor-green fluorescent protein (GFP) fusion proteins: a study of drug effects on receptor internalization, trafficking and expression, A114  
**McLean, J.**, *See* Kelso, E.  
**McMillen, I. C.**  
 —; Neuroendocrine adaptations of the fetus to nutrient restriction, A7  
**McPhee, I.**  
 —; Yarwood, S. J.; Huston, E.; Scotland, G.; Beard, M.; Ross, A. H.; Houslay, M. D. Lyn tyrosyl kinase binds to the human cAMP-specific phosphodiesterase PDE64 (HSPDE4A4B) and causes a conformational change in its catalytic unit, A129  
**McSweeney, S.**, *See* Faulder, P. F.  
**Meacock, S. L.**, *See* High, S.  
**Meaney, M.**  
 —; Early environmental events regulate neuroendocrine development, A6  
**Meddows, E.**  
 —; Le Bourdellès, B.; Whiting, P. J.; McIlhinney, R. A. J. Identification of determinants important for the assembly of the N-methyl-D-aspartate (NMDA) receptor, A119  
**Mehlert, A.**, *See* Allen, S.  
 —; Treumann, A.; Ferguson, M. A. J. Major surface glycoprotein of the procyclic form of *Trypanosoma brucei* is phosphorylated: a matrix-associated laser desorption ionization-time of flight (MALDI-TOF) study, A111  
**Mehta, P. B.**  
 —; Robson, C. N.; Neal, D. E.; Leung, H. Y. Differential activation of mitogen-activated protein kinases by members of the fibroblast growth factor family, A121  
**Meškys, R.**, *See* Ramanavičius, A.  
**Meisterernst, M.**  
 —; Molecular models for regulation of transcription by RNA polymerase III, A65  
**Meivar-Levy, I.**, *See* Futerman, A. H.  
**Melendez, A. J.**  
 —; Harnett, M. M.; Allen, J. M. FcyRI differentially activates several protein kinase C isoforms and different phospholipases depending on monocyte differentiation, A101  
**Meléndez-Hevia, E.**, *See* Heinrich R.  
**Melvin, W. T.**, *See* McFadyen, M. C. E.  
**Mendes, P.**  
 —; Using computers to learn about metabolism, A21  
**Menz, R. I.**, *See* Leslie, A. G. W.  
**Mérida, I.**, *See* Jones, D. R.  
**Merlos-Suárez, A.**  
 —; Arribas, J. Mechanisms controlling the shedding of transmembrane molecules, 243  
**Mernagh, D.**  
 —; Marks, P.; Kneale, G. *AhdI*, a new class of restriction-modification system?, A126  
**Merrill, A. H., Jr.**  
 —; Morgan, E. T.; Nikolova-Karakashian, M.; Stewart, J. Sphingomyelin hydrolysis and regulation of the expression of the gene for cytochrome P450, A62, 383  
**Metcalfe, J.**  
 —; Lipoprotein(a) and transforming growth factor  $\beta$  in atherosclerosis, A92  
**Meunier, B.**  
 —; Yeast as a eukaryotic model for inhibitor resistance and dysfunction of the bc<sub>1</sub> complex, A127  
**Mewies, M.**, *See* Roberts, P.  
**Meyer, G.**, *See* Vernon, E.  
**Meyer, T.**  
 —; Protein kinase C as a molecular machine that decodes calcium and diacylglycerol signals, A73  
**Mhaouty-Kodja, S.**, *See* Cotecchia, S.  
**Michael, A. J.**, *See* Mitra, A.  
**Michell, R. H.**, *See* Dove, S. K.; McEwen, R. K.  
**Middleton, J.**  
 —; White, S.; Parry, E.; Jackson, C.; Darby, A.; Dixey, J.; Ashton, B. Serum chondroitin sulphate epitopes in rheumatoid arthritis, A41  
**Miles, C. S.**, *See* Munro, A. W.; Noble, M. A.; Ost, T. W. B.  
**Millar, N. S.**  
 —; Heterologous expression of mammalian and insect neuronal nicotinic acetylcholine receptors in cultured cell lines, 944  
 —; Heterologous expression of nicotinic acetylcholine receptors in mammalian and *Drosophila* cell lines: the importance of the host cell environment, A143  
**Millar, T.**  
 —; Balmanno, K.; Cook, S. Both mitogen-activated protein kinase (MAPK) and phosphoinositide 3-kinase are required for cell cycle re-entry in quiescent CC139 cells, but MAPK is not required for asynchronous growth, A96  
**Miller, I. D.**, *See* McFadyen, M. C. E.  
**Milligan, G.**, *See* Drmota, T.; Groarke, A.; Kellett, E.; McLean, A. J.; Stevens, P. A.; Ward, R.; Wilson, M. A.  
 —; Groarke, D. A.; McLean, A.; Ward, R.; Fong, C. W.; Cavalli, A.; Drmota, T. Diversity in the signalling and regulation of G-protein-coupled receptors, A24, 149  
**Mills, I. G.**, *See* Clague, M. J.  
**Mills, J.**  
 —; Wyborn, N.; Williams, S.; Greenwood, J.; Jones, C. W.

- Solute transport in *Methylophilus methylotrophus*, A52
- Milsom, S. E., *See* Halford, S. E.
- Miroix, B., *See* Pecqueur, C.
- ; Expression and purification of the mitochondrial uncoupling proteins (UCPs): a comparative study between *Escherichia coli* and *Saccharomyces cerevisiae*, A140
- Missaillidis, S., *See* Ray, P.
- Mistry, M., *See* Wood, I. C.
- Mitchell, R., *See* Johnson, M. S.; Lutz, E. M.; McCulloch, D. A.; Robertson, D. N.
- Mitchell, T., *See* Gilbert, R.
- Mithen, R.
- ; Manipulating the glucosinolate content of *Brassicas*, A17
- Mitra, A.
- ; Mayer, M. J.; Michael, A. J.; Kitamura, Y.; Sewter, C.; Narbad, A.; Parr, A. J.; Walton, N. J.
- p-Hydroxycinnamoyl-CoA hydratase/lyase: a *Pseudomonas* enzyme expressed in hairy root cultures of *Datura stramonium*, A51
- Mittnacht, S.
- ; Regulation of the retinoblastoma tumour suppressor protein (pRB), A63
- Mizuguchi, K., *See* Marino-Buslje, C.
- Modi, S., *See* Tsan, P.
- Moffat, K.
- ; Time-resolved crystallography of protein intermediates, A1
- Mohammed, N., *See* Fletcher, L. M.
- Molla, G., *See* Pilone, M. S.
- Molnar, E., *See* Noel, J.; Pickard, L.
- Montero, F., *See* Heinrich R.
- Moody, P. C. E., *See* Craig, D. H.
- Moore, G. R., *See* Kleanthous, C.
- Moore, K. J., *See* Greenwood, C. J.
- Moorghen, M., *See* Arul, G. S.
- Morgan, C. P.
- ; Jones, D.; Swigart, P.; Cockcroft, S.
- Phosphorylation and the regulation of phosphatidylinositol-transfer protein  $\alpha$  function, A102
- Morgan, E. T., *See* Merrill, A. H., Jr.
- Morgan, M., *See* McDonnell, S.
- Morris, J. A., *See* Hincliffe, K. A.
- Morris, J. B.
- ; Hincliffe, K. A.; Irvine, R. F.
- Development of a mass assay for PtdIns5P, A101
- Morton, L. F., *See* Knight, C. G.
- Mosbach, K., *See* Haupt, K.
- ; Molecular imprinted biosensors, A28
- Moser, C. C., *See* Sharp, R. E.
- Moss, S. J., *See* Brandon, N. J.
- ; Synaptic targeting and regulation of ionotropic  $\gamma$ -aminobutyric acid (GABA) receptors, A70
- Moullier, P., *See* Guillot, C.
- Mouzakiti, A., *See* MacCarthy-Morrogh, L.
- Movahedi, S., *See* Pang, S.
- Mowat, C., *See* Chapman, S. K.
- Mowat, C. G.
- ; Pike, A. D.; Chapman, S. K.; Reid, G. A.; Gondry, M.; Lederer, F.
- Structure-function studies on Arg-289  $\rightarrow$  Lys mutant flavocytochrome  $b_2$ , A57
- Moxon, E. R., *See* Hood, D. W.
- Moysey, R., *See* Chapman, S. K.
- ; Welsh, F.; Chapman, S. K.; Reid, G. A.
- Characterization of a Leu  $\rightarrow$  Trp mutant of the flavodehydrogenase domain of flavocytochrome  $b_2$ , A43
- Mullaney, I.
- ; Chronic hypoxia modulates metabotropic glutamate receptor signalling in rat brain cortex, A116
- Müllerberg, J.
- ; Vollmer, P.; Althoff, K.; März, P.; Rose-John, S.
- Generation and function of the soluble interleukin-6 receptor, 211
- Muller, R.
- ; CDF-mediated transcriptional repression in cell cycle regulation and oncogenesis, A63
- Munro, A. W., *See* Chapman, S. K.; Green, A. J.; McIver, L.; Noble, M. A.; Ost, T. W. B.; Quaroni, L.
- ; Noble, M. A.; Miles, C. S.; Daff, S. N.; Green, A. J.; Quaroni, L.; Rivers, S.; Ost, T. W. B.; Reid, G. A.; Chapman, S. K.
- Flavocytochrome P-450 BM3: a paradigm for the analysis of electron transfer and its control in the P-450s, A29, 190
- ; Quaroni, L.; MacDonald, I. D. G.; Smith, W. E.; Hudecek, J.; Baumruk, V.; Anzenbacher, P.
- Analysis of flavocytochrome P-450 BM3 using resonance Raman spectroscopy, A45
- Munro, S., *See* Levine, T.
- Murdock, P. R.
- ; Tan, K. B.; Herrity, N. C.; Rennie, G. I.; Jenkins, O.
- Multiplex TaqMan<sup>®</sup> combined reverse transcriptase (RT)-PCR: a novel method for the quantification of mRNA levels in receptor-transfected mammalian cell clones, A150
- Murray, G. I., *See* McFadyen, M. C. E.
- Murray, L.
- ; Pires, R. H.; Hastings, S. F.; Ingledew, W. J.
- Models for structure and function in quinone-binding sites: the *Escherichia coli* quinol oxidase, cytochrome  $bo_3$ , 581
- Murray, N. E., *See* Dryden, D. T. F.
- Myers, F. A.
- ; Evans, D.; Thorne, A. W.; Crane-Robinson, C.
- Core histone acetylation of CpG island-associated genes in 15-day-old chicken embryo erythrocytes, A97
- Myerscough, N., *See* Arul, G. S.
- Myles, D.
- ; Applying the learning: the case for teaching in industry, A22
- Nagy, J. M., *See* Jesmin
- Nahorski, S. R., *See* Davis, R. J.; Hermans, E.; Wheldon, L. M.; Willars, G. B.; Young, K. W.
- Naidoo, K., *See* Schwager, S. L. U.
- Nakatani, Y.
- ; The PCAF histone acetylase complex, A65
- Nalivaeva, N. N., *See* Plesneva, S. A.
- Nanoff, C., *See* O'Connor, V.
- Narayana, S., *See* Mayne, R.
- Narbad, A., *See* Mitra, A.
- Naughton, P. J.
- ; Grant, G.; Bardocz, S.; Thorns, C. J.; Puszta, A.
- Expression of fimbrial lectins of the surface of *Salmonella*, A111
- Naylor, S., *See* Binley, K.; Freeth, J. S.
- Neal, D. E., *See* Gaughan, L.; Mehta, P. B.; Ozanne, D. M.
- Neame, S. J., *See* Eilers, A.
- Needham, M.
- ; Expression of seven transmembrane receptors in mammalian cells, A143
- Nelson, K., *See* Bailey, J. M.
- Neville, B., *See* Cutler, P.
- Nguyen T. K., *See* Spicer, A. P.
- Nicholls, P.
- ; Pelekou, P.; Silkstone, G.; Wilson, M. T.
- Carboxymethyl cytochrome c as artificial haem enzyme, A127
- Nicholson, N., *See* Greenwood, C. J.
- Nicol, B.
- ; Rowbotham, D. J.; Smart, D.; McKnight, A. T.; Lambert, D. G.
- Naloxone benzoylhydrazone inhibits K<sup>+</sup>-evoked glutamate release from rat brain slices, A33
- Nieh, Y. P., *See* Faulder, P. F.
- Nikolova-Karakashian, M., *See* Merrill, A. H., Jr.
- Ning, J.
- ; Grant, M. H.
- Chromium VI toxicity in osteoblasts: involvement of glutathione reductase, A128
- Noble, M. A., *See* Green, A. J.; Munro, A. W.; Ost, T. W. B.; Quaroni, L.
- ; Miles, C. S.; Reid, G. A.; Chapman, S. K.; Munro, A. W.
- Catalytic properties of key active-site mutants of flavocytochrome P-450 BM3, A44
- Determinants of substrate binding in flavocytochrome P-450 BM3, A44
- ; Ost, T. W. B.; Miles, C. S.; Robledo, L.; Chapman, S. K.; Munro, A. W.
- Electron transfer in P450 BM3/cytochrome b<sub>5</sub> complex, A108
- Noel, J., *See* Pickard, L.
- ; Scott Ralph, G.; Pickard, L.; Molnar, E.; Unney, J. B.; Collingridge, G. L.; Henley, J. M.
- Regulation of AMPA receptor surface expression by a NSF-dependent mechanism in hippocampal neurons in culture, A117
- Nofal, G. A., *See* Seeson, C. B.
- Norton, J., *See* Deed, R.
- Nuño, J. C., *See* Heinrich R.
- Nwagwu, M. O., *See* Langley-Evans, S. C.
- Nyirenda, M. J., *See* Seckl, J. R.
- Oatey, P. B., *See* Fletcher, L. M.
- Oblinger, J. L., *See* Rampersaud, A. A.
- O'Connor, V.
- ; El Far, O.; Bofill-Cardona, E.; Nanoff, C.; Freissmuth, M.; Airas, J. M.; Betz, H.; Böhm, S.
- Calmodulin-dependence of presynaptic metabotropic glutamate receptor signalling, A35
- O'Quinn, G.
- ; Fitzgerald, R.; Bouchier, P.; McDonnell, M.
- Generation of non-bitter casein hydrolysates by using combinations of a proteinase and aminopeptidases, 730
- Ofner, L. D.
- ; Hooper, N. M.
- Proteolytic fragmentation of aminopeptidase N, A54
- Ogawa, T., *See* Fujii, M.
- Ohkura, R., *See* Kuhlman, P. A.
- Ohnishi, T.
- ; Magnitsky, S.; Toulokhanova, L.; Yano, T.; Yagi, T.; Burbaev, D. S.; Vinogradov, A. D.
- EPR studies of the possible binding sites of the cluster N2, semiquinones, and specific inhibitors of the NADH:quinone oxidoreductase (complex I), 586
- Ohtsubo, M., *See* Fujii, M.
- Okun, J. G.
- ; Zickermann, V.; Brandt, U.

- Properties of the common inhibitor-binding domain in mitochondrial NADH-dehydrogenase (complex I), 596
- Oliver, C. F.**, *See* Tsan, P.
- Oliver, J. D.**, *See* High, S.
- Oliver, M. H.**
- ; Bloomfield, F. H.; Harding, J. E.; Breier, B. H.; Bassett, N. S.; Gluckman, P. D.
  - The maternal, fetal and postnatal somatotrophic axes in intrauterine growth retardation, 69
- O'Luanagh, N.**
- ; Cockcroft, S.
  - Role of ADP-ribosylation factor and phospholipase D in regulated exocytosis, A103
- O'Neill, L. A. J.**, *See* Fitzgerald, K. A.
- O'Neill, S. M.**, *See* Brady, C. P.
- O'Reilly, J.**, *See* Ward, A.
- Orriss, G. L.**, *See* Leslie, A. G. W.
- Ortega, F.**
- ; Martí, E.; Cascante, M.
  - New insights into metabolic pathway optimization by analogy with industrial manufacturing processes, 276
- Ost, T. W. B.**, *See* Munro, A. W.; Noble, M. A.
- ; Noble, M. A.; Miles, C. S.; Robledo, L.; Reid, G. A.; Chapman, S. K.; Munro, A. W.
  - Re-designing the active site of flavocytochrome BM3, A108
- Ostrovska, M. A.**, *See* Fedorovich, I. B.
- Ouimet, C. C.**, *See* Allen, P. B.
- Owen-Hughes, T.**, *See* Whithouse, I.
- Ozanne, D. M.**
- ; Brady, M. E.; Cook, S.; Neal, D. E.; Robson, C. N.
  - Characterizing the interaction between the human androgen receptor and the actin-binding protein filamin (ABP 280), A120
- Ozanne, S. E.**
- ; Programming of hepatic and peripheral tissue insulin sensitivity by maternal protein restriction, A7, 94
- Ozsullu, T.**, *See* Hergenc, G.
- Packham, G.**, *See* MacCarthy-Morrogh, L.
- ; Bcl-2 related proteins and cancer, A135
- Page, M. G. P.**, *See* Wilkinson, A.-S.
- ; Increasing the chances of discovery: how do we screen large numbers of compounds?, A91
- Page, R. A.**, *See* Harwood, J. L.
- Pallister, C.**, *See* Hill, A.
- Palmer, C.**
- ; Fatty acid metabolism and P450 activity, A62
- Palmer, C. N. A.**
- ; Gustafsson, M. C. U.; Dobson, H.; von Wachenfeldt, C.; Wolf, C. R.
  - Adaptive responses to fatty acids are mediated by the regulated expression of cytochromes P450, 374
- Palmer, S. L.**, *See* Ward, A.
- Palmer, T. M.**, *See* Ferguson, G.
- Palmitessa, A.**, *See* Sharp, R. E.
- Pamintuan, L.**, *See* Knudson, C. B.
- Pang, S.**
- ; Movahedi, S.; Hooper, N. M.
  - Insulin-stimulated release of glycosylphosphatidylinositol-anchored proteins, A54
- Panov, K. I.**, *See* Cabart, P.; Friedrich, J. K.
- Pape, S. J.**, *See* Cuttle, G.
- Parish, J.**, *See* Webster, K.
- Parker, M.**, *See* Gilbert, R.
- Parker, M. D.**, *See* Groves, J. D.
- Parker, P. J.**, *See* Dove, S. K.
- Parr, A. J.**, *See* Mitra, A.
- Parry, E.**, *See* Middleton, J.
- Parry, S. H.**, *See* Halford, S. E.
- Parsons, S.**, *See* Shield, V.
- Parvathy, S.**, *See* Hooper, N. M.
- Pass, I.**
- ; Batty, I. H.; Downes, C. P.
  - PTEN, a tumour suppressor, is a 3-phosphorylated phosphoinositide 3-phosphatase, A129
- Patel, J.**, *See* Patel, R. R.
- Patel, R. R.**
- ; Patel, J.; Brown, K. A.; Longstaff, C.
  - Characterization of the interaction of prothrombin with immobilized phospholipid membranes, A53
- Pattus, F.**, *See* Massotte, D.
- Paulsson, M.**
- ; Piecha, D.; Segat, D.; Smyth, N.; Wagener, R.
  - The matrilins: a growing family of A-domain-containing proteins, A132, 824
- Peachey, A. R.**, *See* Knight, C. G.
- Pearl, L.**
- ; Structural analysis of the Ruv AB Holliday junction branch-migration complex, A87
- Pearson, J. D.**, *See* Maddock, H. L.
- Pearson, M.**, *See* Greenwood, C. J.
- Pecqueur, C.**
- ; Vacher, D.; Miroux, B.
  - Expression and purification of the mitochondrial uncoupling proteins: a comparative study between *Escherichia coli* and *Saccharomyces cerevisiae*, 888
- Peers, C.**, *See* Roberts, D. J.; Webster, N. J.
- Pelekou, P.**, *See* Nicholls, P.
- Pelled, D.**, *See* Futerman, A. H.
- Pereira, C.**, *See* Massotte, D.
- Pereira-Chioccola, V. L.**
- ; Schenkman, S.
  - Biological role of *Trypanosoma cruzi trans-sialidase*, 516
- Perkins, N. D.**, *See* Chapman, N. R.; Snowden, A. W.
- Perkins, S. J.**, *See* Aslam, M.; Hinshelwood, J.
- ; Hinshelwood, J.; Edwards Y. J. K.; Jenkins, P. V.
  - Structural and functional modelling of von Willebrand factor type A domains in complement and coagulation, A131, 815
- Perret, B.**, *See* Massotte, D.
- Perry, D. K.**
- ; Ceramide and apoptosis, A78, 399
- Perry, E. K.**, *See* Goodchild, R. E.
- Perry, R. H.**, *See* Goodchild, R. E.
- Pertile, P.**, *See* Godi, A.
- Pertseva, M. N.**, *See* Plesneva, S. A.
- Peterson, C. L.**
- ; Regulation of transcription by chromatin remodelling machines, A65
- Phillips, S.**
- ; Galactose and amine oxidases: making the most of tyrosine residues, A2
- Pickard, L.**, *See* Noel, J.
- ; Noel, J.; Molnar, E.; Collingridge, G. L.; Henley, J. M.
  - Ionotropic glutamate receptor localization in cultured CA3-CA1 hippocampal neurons, A117
- Piccoli, M. A.**, *See* Jordan, D. B.
- Piecha, D.**, *See* Paulsson, M.
- Pienimäki, J.-P.**, *See* Tammi, R.
- ; Tammi, R.; Törrönen, K.; Tammi, M.
- Pigott, M. A.**, *See* Goodchild, R. E.
- Pike, A. C. W.**
- ; Brzozowski, A. M.; Walton, J.; Carlquist, M.
  - Structural basis of oestrogen receptor-co-activator interaction, A95
- Pike, A. D.**, *See* Mowat, C. G.
- Pilone, M. S.**
- ; Molla, G.; Harris, C.; Porrini, D.; Vegezzi, C.; Campaner, S.; Pollegioni, L.
  - Site-directed mutagenesis in the active site of *Rhodotorula gracilis* D-amino-acid oxidase, A38
- Pipe, A.**, *See* Clark, L.
- Pires, R. H.**, *See* Murray, L.
- Pirola, L.**, *See* Wymann, M. P.
- Pitsillides, A. A.**, *See* Doorty, K. B.; Ward, A. C.
- ; Hyaluronan in joint cavitation, A12
- Plesneva, S. A.**
- ; Kuznetsova, L. A.; Shpakov, A. O.; Pertseva, M. N.
  - Involvement of adenylate cyclase in the action of insulin superfamily peptides and its interaction with protein kinase C, A119
  - ; Zhuravkin, I. A.; Nalivaeva, N. N.; Dubrovskaya, N. M.
  - Modulation of the effects of cholinergic agents on rat brain adenylyl cyclase by ganglioside GM1, A112
- Podhajcer, O.**, *See* Chernajovsky, Y.
- Pollegioni, L.**, *See* Pilone, M. S.
- Ponnambalam, S.**
- ; Clough, S.; Downes, C. P.; Lucocq, J. M.; McLauchlan, H. J.; Towler, M. C.
  - Lipid kinases and *trans*-Golgi network membrane dynamics, A77, 670
- Ponnappan, R. K.**, *See* Rampersaud, A. A.
- Ponta, H.**
- ; Mode of action of hyaluronate enhancement of haemopoiesis, A13
- Poole, A.**, *See* Falati, S.
- Poolman, B.**
- ; Knol, J.
  - Amplified expression and membrane reconstitution of transport proteins, A141, 912
- Poolman, M. G.**, *See* Thomas, S.
- Pool-Zobel, B. L.**, *See* Latunde-Data, G. O.
- Pope, A. J.**, *See* Brown, M. J. B.; Greenwood, C. J.
- Porrini, D.**, *See* Pilone, M. S.
- Possee, R. D.**
- ; Thomas, C. J.; King, L. A.
  - The use of baculovirus vectors for the production of membrane proteins in insect cells, A142, 928
- Postle, A.**, *See* Rodway, H. A.
- Postle, A. D.**, *See* Hunt, A. N.
- ; Wright, S. M.; Hunt, A. N.
  - Analysis by electrospray ionization mass spectrometry of phosphatidylcholine synthesis from [<sup>3</sup><sup>13</sup>C]choline by cultured cells, A123
- Potter, C. L.**, *See* Johal, K.
- Powell, L. M.**, *See* Dryden, D. T. F.
- Prestwich, G. D.**, *See* Thomas, C. L.
- Price, A.**
- ; Brown, G. C.
  - Nitric-oxide-induced cell death of PC12 cells, A146
- Price, G. J.**, *See* Beaumont, A. J.
- Primrose, W. U.**, *See* Tsan, P.
- Pritchard, J.**, *See* Thomas, C. R.
- Pritchard, M. P.**, *See* MacDonald, I. D. G.

- Privalov, P. L.**, *See* Crane-Robinson, C. Prokop, D. J.  
—; Pleasant surprises *en route* from the biochemistry of collagen to attempts at gene therapy, 15
- Pryde, J. G.**  
—; Walker, A.  
The Golgi fragments during apoptosis, A146
- Pryor, P. R.**, *See* Gillingham, A. K.
- Puckey, L. H.**  
—; Knight, B. L.  
Sequence change in putative enhancer regions upstream of the apolipoprotein(a) gene, A122
- Purkiss, J. R.**  
—; Fris, L. M.; Doward, S.; Quinn, C. P.  
Cultured spinal cord cells take up and release [<sup>3</sup>H]noradrenaline: evidence for intrinsic noradrenergic neurons, A32
- Purohit, A.**  
—; Singh, A.; Reed, M. J.  
Regulation of steroid sulphatase and oestradiol 17 $\beta$ -hydroxysteroid dehydrogenase in breast cancer, 323
- Pusztai, A.**, *See* Naughton, P. J.
- Pyne, N.**, *See* Pyne, S.
- Pyne, S.**  
—; Rakshit, S.; Conway, A.-M.; McKie, A.; Darroch, P.; Tate, R.; Pyne, N.  
Extracellular actions of sphingosine 1-phosphate through endothelial differentiation gene products in mammalian cells: role in regulating proliferation and apoptosis, 404  
—; Sphingosine 1-phosphate signalling, A79
- Qu, J.**  
—; Bloxham, D. M.; Sampson, C.; Lucy, J. A.  
Phosphatidylserine-mediated adhesion of T cells to endothelial cells, A108
- Quant, P.**  
—; Using practicals to teach metabolic control analysis (MCA): a worked example, A21
- Quant, P. A.**, *See* Harwood, J. L.
- Quaroni, L.**, *See* Munro, A. W.  
—; Smith, W. E.; Noble, M. A.; Munro, A. W.  
The interaction of nitric oxide with flavocytochrome P-450 BM3, A44
- Quinn, C. P.**, *See* Purkiss, J. R.
- Quinn, J. F.**, *See* Fiskerstrand, C. E.; Gerrard, L.; Mackenzie, A.
- Qvarnstrom, E. E.**, *See* Carlotti, F.; Yang, L.
- Rabinovich, G. A.**, *See* Chernajovsky, Y.
- Rae, A.**  
—; Tobin, A. B.  
Role of internalization in the regulation of phospholipase-C-coupled receptor desensitization and resensitization, A55
- Raftery, J.**, *See* Faulder, P. F.
- Rahman, M. A.**, *See* Alam, N.
- Rahman, M. H.**  
—; Avella, M.; Botham, K. M.  
The conversion of chylomicrons of different fatty acid composition into chylomicron remnants *in vivo*, A51  
—; The nutritional toxicity of sweet lupin (*Lupinus angustifolius*) seed proteins, A59
- Rakshit, S.**, *See* Pyne, S.
- Ramanavičius, A.**  
—; Razumiene, J.; Laurinavičius, V.; Marcinkevičiene, L.; Bachmatova, I.; Meškys, R.; Rudomanskis, R.  
Study of intramolecular electron transfer and catalytic action of quinohaemoprotein alcohol dehydrogenase from *Gluconobacter* sp. 33, A46  
—; Schuhmann, W.; Habermüller, K.; Laurinavičius, V.; Marcinkevičiene, L.; Bachmatova, I.; Gorton, L.; Csoregi, E.  
Employment of quinohaemoprotein alcohol dehydrogenase from *Gluconobacter* sp. 33 entrapped in polypyrrole film for creation of reagentless alcohol biosensor, A52
- Rameh, B.**, *See* Zaman, N.
- Ramji, D. P.**, *See* Hughes, T. R.; Tengku-Muhammad, T. S.
- Ramli, U. S.**, *See* Harwood, J. L.
- Rampersaud, A. A.**  
—; Oblinger, J. L.; Ponnappan, R. K.; Burry, R. W.; Yates, A. J.  
Gangliosides and growth factor receptor regulation, A79, 415
- Ramphal, R.**  
—; Molecular basis of mucin-*Pseudomonas* interactions, A84, 474
- Rana, M. Z.**, *See* Khattab, A. D.
- Rantanen, M.**, *See* Heimo, H.
- Ravallec, R.**, *See* Gilmartin, L.
- Ray, P.**  
—; Smith, K. J.; Missailidis, S.; Jaseja, M.; Chittock, R.; Buck, M.; Hyde, E. I.  
Secondary structure of the C-terminal DNA-binding domain of the transcriptional activator NifA from *Klebsiella pneumoniae*, A125
- Razumiene, J.**, *See* Ramanavičius, A.
- Read, C. M.**, *See* Crane-Robinson, C.
- Reaves, B. J.**, *See* Gillingham, A. K.; Row, P. E.
- Reed, M. J.**, *See* Purohit, A.  
—; Regulation of steroid sulphatase and oestradiol 17 $\beta$ -hydroxysteroid dehydrogenase in breast cancer, A15
- Rees, D.**  
—; The return of chance discovery: generation of large numbers of compounds by combinatorial methods, A91
- Rees, W. D.**  
—; Hay, S. M.  
The effect of maternal protein deficiency on the expression of the growth-arrest-specific gene 6 (gas6) in the fetal kidney, A49
- Reeves, P. J.**  
—; Klein-Seetharaman, J.; Getmanova, E. V.; Eilers, M.; Loewen, M. C.; Smith, S. O.; Khorana, H. G.  
Expression and purification of rhodopsin and its mutants from stable mammalian cell lines: application to NMR studies, A143, 950
- Reichardt, H.**  
—; Genetic dissection of glucocorticoid receptor function, A6
- Reichardt, H. M.**  
—; Kellendonk, C.; Tronche, F.; Schütz, G.  
The Cre/loxP system—a versatile tool to study glucocorticoid signalling in mice, 78
- Reid, G. A.**, *See* Chapman, S. K.; Doherty, M. K.; Green, A. J.; Mowat, C. G.; Moysey, R.; Munro, A. W.; Noble, M. A.; Ost, T. W. B.; Welsh, F.
- Reik, W.**  
—; Control of fetal growth by genomic imprinting, A5
- Ren, Z.-X.**, *See* Mayne, R.
- Rennie, G. I.**, *See* Murdock, P. R.
- Renshaw, S.**, *See* Whyte, M.
- Resmini, M.**, *See* Sonkaria, S.
- Reynolds, J. S.**  
—; Bottomley, J. R.; Cullen, P. J.  
Structural and functional analysis of the putative inositol 1,3,4,5-tetrakisphosphate receptors GAP1<sub>IP4BP</sub> and GAP1<sup>m</sup>, A104
- Rich, P.**  
—; Fisher, N.  
Generic features of quinone-binding sites, A80, 561
- Rich, P. R.**, *See* Jünemann, S.
- Rich, T.**  
—; Stephens, R.; Trowsdale, J.  
MHC linked genes associated with apoptosis/programmed cell death, A135, 781
- Richards, J. C.**, *See* Hood, D. W.
- Riley, F.**, *See* Zaman, N.
- Rivers, S.**, *See* Munro, A. W.; Welsh, F.
- Rivers, S. L.**, *See* Green, A. J.
- Roberts, D. J.**  
—; Peers, C.; Vaughan, P. F. T.  
Muscarinic receptor (M<sub>1</sub>)-evoked increase in [Ca<sup>2+</sup>]<sub>i</sub> in SH-SY5Y cells inhibits noradrenaline release, A32
- Roberts, G. C. K.**, *See* Barsukov, I.; Damblon, C.; Tsan, P.  
—; Structural studies of the flavoprotein reductase component of the P-450 monooxygenase system, A29
- Roberts, I.**, *See* Edwards, N.
- Roberts, I. S.**, *See* Griffiths, G.  
—; Studies on the biosynthesis of the *Escherichia coli* K5 capsular polysaccharide, A85
- Roberts, P.**, *See* Rolph, C. E.; Taylor, S.  
—; Basran, J.; Mewies, M.; Hille, R.; Scrutton, N. S.  
Substrate inhibition in wild-type and mutant trimethylamine dehydrogenases, A46
- Roberts, P. E.**, *See* Ward, A.
- Roberts, S.**  
—; Johnson, E.; Garguilo, B.; Caterson, B.; Kwan, A.  
Co-localization of a proteoglycan epitope and type X collagen by human intervertebral disc cells *in vitro*, A42
- Roberts, S. G. E.**, *See* Hawkes, N. A.
- Robertson, D. J.**  
—; Characterization of L-mandelate dehydrogenase from *Rhodotorula graminis*, A58
- Robertson, D. N.**  
—; Johnson, M. S.; McCulloch, D. A.; Lutz, E. M.; Holland, P.; Mitchell, R.  
Divergent pathways of phospholipase D activation in the human 5-HT<sub>2a</sub> receptor and its Asn-376→Asp mutant, A117
- Robertson, J. M.**  
—; Grant, G.; Woodward, M. J.; Allen-Vercoe, E.; Flint, H. J.  
Use of an ileal explant model to study the contribution of *Salmonella enteritidis* fimbrial lectins to infection in the rat gut, A110
- Robledo, L.**, *See* Noble, M. A.; Ost, T. W. B.
- Robson, C. N.**, *See* Gaughan, L.; Mehta, P. B.; Ozanne, D. M.
- Roche, L.**, *See* Brady, C. P.
- Rodway, H. A.**  
—; Hunt, A. N.; Postle, A.; Kohler, J. A.; Lillycrop, K. A.  
Fatty acids induce morphological differentiation of IMR-32 cells, A100
- Roeraade, J.**  
—; Nanotechnology approaches to proteomics, A69

- Rogers, H.**, *See* Baldwin A.  
**Rohill, J.**, *See* Freeth, J. S.  
**Rolph, C. E.**, *See* Taylor, S.  
 —; Roberts, P.; Taylor, S.  
 Phospholipase-induced modulation of rat liver mixed-function oxidase activity, A61, 371  
**Roopra, A.**, *See* Wood, I. C.  
**Roper, J.**, *See* Gilmartin, L.  
**Rose-John, S.**, *See* Müllberg, J.  
 —; Shedding of the interleukin-6 receptor: mechanisms and physiological consequences, A22  
**Rosier, S.**, *See* Cutler, P.  
**Ross, A. H.**, *See* McPhee, I.  
**Ross, G. A.**  
 —; Liquid chromatography and capillary electrophoresis coupled to electrospray ionization-MS for the analysis of 2D-separated proteins, A68  
**Rossjohn, J.**, *See* Gilbert, R.  
**Roth, M. G.**, *See* Ktistakis, N. T.  
**Roussel, M.**, *See* Kemp, G. J.  
**Row, P. E.**  
 —; Reaves, B. J.; Bright, N. A.; Domin, J.; Luzio, J. P.; Davidson, H. W.  
 Mammalian Vps34p controls lysosomal enzyme delivery and the morphology of a late endosomal compartment, A107  
**Rowbotham, D. J.**, *See* Nicol, B.  
**Rowe, A.**, *See* Gilbert, R.  
**Rowe, R. J.**, *See* McKenzie, E. A.  
**Rowland, I.**  
 —; Wiseman, H.; Sanders, T.; Adlercreutz, H.; Bowey, E.  
 Metabolism of oestrogens and phytoestrogens: role of the gut microflora, A13, 304  
**Rudling, J. E.**  
 —; Evans, P. D.  
 The effect of site-directed mutagenesis of two transmembrane serine residues on agonist-specific coupling of a cloned human  $\alpha_{2A}$ -adrenergic receptor, A31  
**Rudomanskis, R.**, *See* Ramanavičius, A.  
**Rutherford, N. G.**, *See* Ward, A.  
**Rutter, A. R.**  
 —; Chazot, P. L.; Stephenson, F. A.  
 Co-transfection of post-synaptic density-95 (PSD-95) with cloned N-methyl-D-aspartate (NMDA) receptor subtypes results in a selective increase in NR2 subunit immunoreactivities, A115  
  
**Sadeghi, S. J.**  
 —; Gilardi, G.  
 Engineering non-physiological electron transfer, A58  
**Saeed, S. A.**, *See* Gilani, A. H.  
**Saggerson, D.**, *See* Venkatesan, R.  
**Sabil, H.**, *See* Gilbert, R.  
**Saklatvala, J.**, *See* Hermansson, M.  
**Salter, A. M.**, *See* Bennett, A. J.; Sims, H. M.  
**Samejima, K.**  
 —; Biochemical mechanisms of nuclear changes during apoptotic execution, A133  
**Sampson, C.**, *See* Qu, J.  
**Samulski, R. J.**  
 —; Adeno-associated virus vectors: gene therapy and viral vectors, the gap is closing, A136  
**Sanders, P. G.**, *See* Koundouris, A.  
**Sanders, T.**, *See* Rowland, I.  
**Sandhoff, K.**, *See* Kolter, T.  
**Santone, I.**, *See* Godi, A.  
**Sasaki, N.**, *See* Kuhlman, P. A.  
**Savageau, M. A.**  
 —; Design of gene circuitry by natural selection: analysis of the lactose catabolic system in *Escherichia coli*, A19, 264  
**Sayers, J. R.**, *See* Dervan, J. J.  
**Schenkman, S.**, *See* Pereira-Chioccola, V. L.  
 —; The biological role of *Trypanosoma cruzi* trans-sialidase, A86  
**Schiavo, G.**, *See* Thomas, C. L.  
 —; Phosphoinositides and neurotransmitter release, A75  
**Schmoll, D.**  
 —; Walker, K. S.; Alessi, D. R.; Walther, R.; Burchell, A.  
 Suppression of cAMP/dexamethasone-induced glucose-6-phosphate gene transcription by insulin, A106  
**Schofield, C. J.**, *See* Lloyd, M. D.  
**Schofield, D.**, *See* Zaman, N.  
**Scholle, R. R.**, *See* Schwager, S. L. U.  
**Schotte, F.**, *See* Faulder, P. F.  
**Schuhmann, W.**, *See* Ramanavičius, A.  
**Schultz, G.**, *See* Kalkbrenner, F.  
**Schütz, G.**, *See* Reichardt, H. M.  
**Schütze, S.**, *See* Wickel, M.  
 —; Sphingomyelinases in cell signalling, A78  
**Schwager, S. L. U.**  
 —; Chubb, A. J.; Scholle, R. R.; Naidoo, K.; Brandt, W. F.; Eckerskorn, C.; Sturrock, E. D.; Ehlers, M. R. W.  
 Phorbol-ester-induced juxtamembrane cleavage of angiotensin-converting enzyme is not inhibited by a disulphide-bridged stalk, A56  
**Schwartz, R. S.**, *See* Jordan, D. B.  
**Scotland, G.**, *See* McPhee, I.  
**Scott, D.**  
 —; Levick, J. R.; Coleman, P. J.; Mason, R. M.  
 Characterization of trans-synovial flow 'plateau' caused by high-molecular-mass hyaluronan, A41  
**Scott, J. D.**, *See* Tavalin, S. J.  
 —; The molecular architecture of neuronal kinase/phosphatase-signalling complexes, A72  
**Scott, N. W.**, *See* Fowler, M. R.  
**Scott, R.**  
 —; Ayar, A.; Thatcher, N.; Zehavi, U.  
 Mobilization of  $\text{Ca}^{2+}$  from intracellular stores in neonatal rat cultured dorsal root ganglion neurones by intracellular application of sphingolipids, A112  
**Scott Ralph, G.**, *See* Noel, J.  
**Scrutton, N. S.**, *See* Basran, J.; Craig, D. H.; Lee, H. J.; Roberts, P.  
 —; Basran, J.; Wilson, E. K.; Chohan, K. K.; Jang, M.-H.; Sutcliffe, M. J.; Hille, R.  
 Electron transfer in trimethylamine dehydrogenase and electron-transferring flavoprotein, A30, 196  
 —; Enzymes in the quantum world, 767  
**Seckl, J. R.**  
 —; Nyirenda, M. J.; Walker, B. R.; Chapman, K. E.  
 Glucocorticoids and fetal programming, A5, 74  
**Seed, M.**, *See* Aslam, M.  
**Segal, I.**, *See* Chaloner, C.  
**Segat, D.**, *See* Paulsson, M.  
**Sellar, R.**, *See* Heding, A.  
**Sengupta, A.**  
 —; Valdramidou, D.; Huntley, S.; Hicks, S. J.; Carrington, S. D.; Corfield, A. P.  
 Distribution of MUC1 in normal oral mucosa, A110  
**Sewter, C.**, *See* Mitra, A.  
**Seymour, L. W.**, *See* Barrett, L. B.  
 —; Gene delivery to the central nervous system (CNS) using non-viral vectors, A138  
**Shafiq, M.**  
 —; Skinner, M. A.; Brown, K. A.  
 Expression and preliminary purification of a  $\text{Zn}^{2+}$  form of *Escherichia coli* dehydroquinate synthase, A47  
**Shah, B.**, *See* Eilers, A.  
**Shand, J. H.**, *See* Allen, G. J.  
**Sharma, P.**, *See* Brant, S.  
**Sharp, R. E.**  
 —; Palmitessa, A.; Gibney, B. R.; Moser, C. C.; Dutton, P. L.  
 Probing the ubihydroquinone primary energy conversion site in the *Rhodobacter capsulatus* cytochrome bc<sub>1</sub> complex, 572  
**Sharpe, R.**  
 —; Perinatal hormone levels and their role in normal/abnormal development and function of the male reproductive system, A5  
**Sharrocks, A. D.**, *See* Yang, S.  
**Shaw, B.**  
 —; Antibiotics and CoA enzymology: some useful connections, A3  
**Shawyer, A.**, *See* Allan, D.  
**Shearman, M.**, *See* Houghton, C.  
**Sheehan, J.**  
 —; Brass, A.; Almond, A.  
 The conformations of hyaluronan in aqueous solution: comparison of theory and experiment, A11, 121  
**Sheng, M.**  
 —; The molecular organization of the post-synaptic membrane in excitatory synapses, A69  
**Sherman, R. C.**, *See* Langley-Evans, S. C.  
**Sherville, E.**, *See* Lambert, M. S.  
**Shevchenko, A.**, *See* Shevchenko, A.  
 —; Zachariac, W.; Shevchenko, A.  
 A strategy for the characterization of protein interaction networks by mass spectrometry, A68, 549  
**Shield, V.**  
 —; Clark, L.; Parsons, S.; Banks, M.  
 Studies with compounds that enhance the binding of [<sup>125</sup>I]-labelled ovine CRF in a recombinant human CRF-1 receptor scintillation proximity assay, A35  
**Shpakov, A. O.**, *See* Plesneva, S. A.  
**Shuttleworth, A.**, *See* Baldock, C.; Ball, S. G.  
 —; Ball, S.; Baldock, C.; Fakhouri, H.; Kiely, C. M.  
 Functional role of A-domains in type VI collagen, A131, 821  
**Siddle, K.**, *See* Marino-Buslje, C.  
**Sigler, P. B.**  
 —; Trimeric G-proteins: structure, mechanism and regulation, A1  
**Siligardi, G.**  
 —; Hussain, R.  
 CD spectroscopy in hyaluronan research, A40  
**Silkstone, G.**, *See* Nicholls, P.  
**Simon, T.**, *See* Bailey, J. M.  
**Simonsen, A.**, *See* Gaullier, J.-M.  
**Sims, H. M.**, *See* Bennett, A. J.  
 —; Bennett, A. J.; Lawler, K.; Billett, M. A.; White, D. A.; Salter, A. M.  
 Mechanism of regulation of microsomal triglyceride-transfer protein gene expression by dietary cholesterol, A122  
**Singh, A.**, *See* Purohit, A.  
**Sjoberg, B. M.**  
 —; Ribonucleotide-reductase-coupled electron-/proton-transfer mechanisms, A30  
**Skehel, M.**, *See* Cutler, P.

- Skinner, M. A.**, *See* Shafiq, M.  
—; Brown, K. A.  
Site-directed mutagenesis of an active-site residue in *Salmonella typhimurium* dehydroquinate synthase, A47
- Skipp, P.**  
—; Proteome analysis without gels: current status of capillary isoelectric focusing-electrospray ionization (CIEF-ESI)-MS, A68
- Slabas, T.**  
—; Checks and balances in the lipid pathways/network, A18
- Slater, A.**, *See* Fowler, M. R.
- Smart, D.**, *See* Nicol, B.
- Smart, T. G.**, *See* Brandon, N. J.
- Smiley, D. W. M.**  
—; Special effects from plants, A16
- Smirnoff, N.**  
—; Ascorbate: the light in mid-pathway, A16
- Smith, G. L.**  
—; Poxvirus strategies to prevent apoptosis of infected cells, A134
- Smith, K. J.**, *See* Ray, P.
- Smith, M. A.**  
—; Kneale, G.  
Characterization of structural domains of the HsdS subunit of M.EcoR124I, A126
- Smith, S. O.**, *See* Reeves, P. J.
- Smith, W. E.**, *See* Munro, A. W.; Quaroni, L.
- Smith-Arca, J.**, *See* Castro, M. G.
- Smyth, N.**, *See* Paulsson, M.
- Smythe, C.**, *See* Hall-Jackson, C. A.
- Snapper, S. B.**, *See* Fruman, D. A.
- Sneddon, A. A.**  
—; Delday, M. I.; Steven, J.; Maltin, C. A.  
Clenbuterol and denervation up-regulate insulin-like growth factor-II and H19 mRNA expression in rat skeletal muscle, A121
- Snoep, J. L.**, *See* van Heeswijk, W. C.  
—; Towards understanding the extras of metabolic pathways: the implementation of quantitative analyses, A21
- Snowden, A. W.**  
—; Anderson, L. A.; Webster, G. W.; Perkins, N. D.  
Regulation of the p300/cAMP-response-element-binding-protein binding protein (CBP) co-activators by the cyclin-dependent kinase inhibitor p21<sub>WAF1/CIP1</sub>, A99
- Sohal, A. K.**, *See* Grisshammer, R.
- Soloviev, M. M.**, *See* Ciruela, F.  
—; Ciruela, F.; Chan, W. Y.; McIlhinney, R. A. J.  
Molecular characterization of a family of Homer proteins which are expressed constitutively in mammalian brain and mammalian cell lines, A113
- Somogyi, P.**  
—; Organization of G-protein-coupled receptors and ion channels at the synapse, A26
- Somsen, O. J. G.**, *See* van Heeswijk, W. C.
- Sonkaria, S.**  
—; Gul, S.; Resmini, M.; Brocklehurst, K.  
Evaluation of a kinetic approach to the determination of catalytic-site content in enzymes and enzyme-like catalysts, A37
- Sonmez, B.**, *See* Hergenc, G.
- Sooranna, S. R.**, *See* Das, I.
- Soto, R. P.**, *See* Damblon, C.
- Soulillou, J.-P.**, *See* Guillot, C.
- Spearman, H.**, *See* Binley, K.
- Spencer, D. I. R.**, *See* Hinshelwood, J.  
Spicer, A. P.  
—; Nguyen, T. K.  
Mammalian hyaluronan synthases: investigation of functional relationships *in vivo*, A10, 109
- Spicer, R. D.**, *See* Arul, G. S.
- Spillmann, D.**, *See* Barragan, A.
- Spooner, P. J. R.**, *See* Venter, H.
- Stamps, A. C.**, *See* Elmore, M. A.; McKenzie, E. A.
- Stanford, N. P.**, *See* Halford, S. E.
- Stanley, E. L.**  
—; Coughtrie, M. W. H.; Hume, R.  
Sulphotransferase activity in the human placenta, A49
- Steel, A.**, *See* Ward, A.
- Steel, J.**, *See* Thomas, C. L.
- Steiner, H.**  
—; Capell, A.; Haass, C.  
Proteolytic processing and degradation of Alzheimer's disease relevant proteins, A23, 234
- Stenberg, E.**, *See* Gilmartin, L.
- Stenmark, H.**, *See* Gaullier, J.-M.  
—; Regulation of endocytic membrane traffic by phosphatidylinositol 3-phosphate, A76
- Stephani, A.**, *See* Heinrich R.
- Stephens, R.**, *See* Rich, T.
- Stephenson, F. A.**, *See* Rutter, A. R.
- Stephenson, T.**, *See* Bispham, J.; Symonds, M. E.; Wilson, V.
- Sternberg, J. A.**, *See* Jordan, D. B.
- Steven, J.**, *See* Sneddon, A. A.
- Stevens, P. A.**  
—; Milligan, G.  
Internalization of wild-type and mutant  $\alpha_{1\alpha}$ -adrenergic receptors, A114
- Stevenson, G. V. W.**  
—; Lucy, J. A.  
Adhesion of Jurkat T cells to endothelial cells under conditions of laminar flow, A107
- Steventon, G.**, *See* Hill, A.
- Steventon, G. B.**, *See* Begent, L. A.  
—; Diurnal variation in S-oxidation of S-carboxymethyl-L-cysteine metabolism in humans, A121
- Stewart, J.**, *See* Merrill, A. H., Jr.
- Stewart, V. C.**, *See* Stone, R.
- St. Germain, D. L.**  
—; Deiodinase protection of the fetus from thyroid hormones, A6  
—; Development effects of thyroid hormone: the role of deiodinases in regulatory control, 83
- Stierhof, Y.-D.**, *See* Ilg, T.
- Stockley, P.**  
—; RNA crystallography without RNA crystals: translational operators, aptamers and other motifs, A89
- Stoddard, B. L.**  
—; Jurica, M.; Heath, P.; Flick, K.  
The structure, function and convergent evolution of intron-encoded homing endonucleases, A39  
—; Time-resolved intermediate trapping and X-ray crystallographic studies of enzyme mechanism: isocitrate dehydrogenase and nuclelease catalysts, A2  
—; Visualizing enzyme intermediates using fast diffraction and reaction trapping methods: isocitrate dehydrogenase, 42
- Stolz, J.**  
—; Characterization and purification of a plant sucrose transporter produced in *Saccharomyces cerevisiae*, A141
- Stone, R.**  
—; Stewart, V. C.; Hurst, R. D.; Clark, J. B.; Heales, S. J. R.
- Astrocytes release and preserve antioxidants: implications for neuroprotection, A152
- Strange, P. G.**  
—; Dopamine receptor antagonists or inverse agonists as anti-psychotics?, A26  
—; Mechanisms of action of anti-psychotic drugs, 175
- Sturrock, E. D.**, *See* Schwager, S. L. U.
- Suckling, K.**  
—; Pharmacological modification of lipoprotein(a), A93, 466
- Sugars, J.**, *See* Ktistakis, N. T.
- Sugden, M. C.**, *See* Langdown, M. L.
- Sumathipala, R.**  
—; Clegg, R.  
The catalytic subunit of cAMP-dependent protein kinase: re-engineering the N-terminal extension and C-terminal 'tail' to investigate structure-function relationships, A117
- Sun, K. M.**, *See* Jordan, D. B.
- Suply, T.**, *See* Massotte, D.
- Sutcliffe, M. J.**, *See* Basran, J.; Scrutton, N. S.; Tsan, P.
- Sutoh, K.**, *See* Kuhlman, P. A.
- Sutton, C.**  
—; Automated post-source decay (PSD) analysis on complex peptide mixtures, A68
- Swigart, P.**, *See* Morgan, C. P.  
—; Insall, R.; Cockcroft, S.  
Identification of phosphatidylinositol-transfer proteins from *Dictyoselium*, A102
- Symonds, M. E.**, *See* Bispham, J.  
—; Stephenson, T.  
Maternal nutrition and endocrine programming of fetal adipose tissue development, A7, 97
- Symonds, M. E.**, *See* Wilson, V.
- Szczelkun, M. D.**, *See* Halford, S. E.
- Sze, K.-H.**, *See* Barsukov, I.
- Talalay, P.**, *See* Bianchet, M. A.
- Tammi, M.**, *See* Pienimäki, J.-P.; Tammi, R.
- Tammi, R.**, *See* Pienimäki, J.-P.  
—; MacCallum, D.; Hascall, V. C.; Pienimäki, J.-P.; Hyttinen, M.; Tammi, M.  
Hyaluronan bound to CD44 on keratinocytes is displaced by hyaluronan decasaccharides and not hexasaccharides, A40
- Tan, K. B.**, *See* Murdock, P. R.
- Tanner, M. J. A.**, *See* Groves, J. D.
- Tate, C. G.**  
—; Whiteley, E.; Betenbaugh, M. J.  
Molecular chaperones improve functional expression of the serotonin (5-hydroxytryptamine) transporter in insect cells, A142, 932
- Tate, R.**, *See* Pyne, S.
- Tavalin, S. J.**  
—; Westphal, R. S.; Colledge, M.; Langeberg, L. K.; Scott, J. D.  
The molecular architecture of neuronal kinase/phosphatase signalling complexes, 539
- Tavaré, J. M.**, *See* Fletcher, L. M.  
—; Analysis of protein and vesicle trafficking using green fluorescent protein, A77
- Taylor, A.**, *See* Allan, D.
- Taylor, M. A. J.**, *See* Hussain, S.
- Taylor, P.**, *See* Brandon, N. J.
- Taylor, P. L.**, *See* Heding, A.
- Taylor, S.**, *See* Rolph, C. E.  
—; Roberts, P.; Rolph, C. E.  
Effect of the phosphatidylcholine biosynthetic pathway on mouse

- hepatic mixed-function oxidase activity, A109
- ; Rolph, C. E.; May, V.; McGuire, J.; Roberts, P.
- Selective hydrogenation of microsomal membranes and its effect on cytochrome P450 activity, A109
- Taylor, S. T.**
- ; Hickman, J. A.; Dive, C.
- Micro-environmental survival stimuli combine to regulate Bcl-X<sub>L</sub> and Bax and suppress drug-induced apoptosis in B lymphoma cells, A147
- Teesdale-Spittele, P. H.**, *See* Brophy, P. M.
- Tengku-Muhammad, T. S.**
- ; Hughes, T. R.; Cryer, A.; Ramji, D. P.
- Regulation of macrophage lipoprotein lipase by cytokines, A95
- Tesson, L.**, *See* Guillot, C.
- Teusink, B.**, *See* van Heeswijk, W. C.
- Thatcher, N.**, *See* Scott, R.
- Theibert, A. B.**, *See* Dubois, T.
- Thillet, J.**
- ; Genetic polymorphisms of the gene for apolipoprotein(a) and their association with lipoprotein(a) levels and myocardial infarction, A93, 463
- Thomas, C.**, *See* Lowenstein, P. R.
- Thomas, C. J.**, *See* Possee, R. D.
- Thomas, C. L.**
- ; Steel, J.; Prestwich, G. D.; Schiavo, G.
- Generation of phosphatidylinositol-specific antibodies and their characterization, 648
- Thomas, C. R.**
- ; Baldwin, J.; Wang, L.; Pritchard, J.; Burrows, K.
- ; Micromanipulation measurement of plant cell mechanical properties, A15, Correction, 961
- Thomas, E. W.**, *See* Hussain, S.
- Thomas, J.**, *See* Lever, A. M. L.
- Thomas, P.**, *See* Brandon, N. J.
- Thomas, S.**, *See* Brightman, F. A.
- ; Poolman, M. G.; Fell, D. A.
- Computer simulation and evolution strategies in the study of rat heart glucose metabolism, A48
- Thompson, A. W.**, *See* Faulder, P. F.
- Thomson, F. J.**, *See* Goan, K. A.
- Thomson, L. M.**, *See* Gow, N. A. R.
- Thorne, A. W.**, *See* Myers, F. A.
- Thorns, C. J.**, *See* Naughton, P. J.
- Thornton, J. M.**
- ; Protein-DNA interactions, A88
- Tipton, K. F.**
- ; Kinetics for the numerically challenged, A21
- Tlapak-Simmons, V. L.**
- ; Helderman, C.; Kempner, E. S.; Weigel, P. H.
- Properties of the hyaluronan synthase from Group A *Streptococcus pyogenes*, 105
- Tobin, A. B.**, *See* Budd, D. C.; Rae, A.
- Todd, J. A.**
- ; From genomics to aetiology in the multifactorial disease type-1 diabetes, A1
- Törönen, K.**, *See* Pienimäki, J.-P.
- Tort, J.**, *See* Brady, C. P.
- Touloukhanova, L.**, *See* Ohnishi, T.
- Towler, M. C.**, *See* Ponnambalam, S.
- Townsend, P.**, *See* MacCarthy-Morrough, L.
- ; Lewis, C.; Legg, J.; Isacke, C.
- Regulation of the cell-surface hyaluronan receptor, CD44, A42
- Treumann, A.**, *See* Melhert, A.
- Tronche, F.**, *See* Reichardt, H. M.
- Trowsdale, J.**, *See* Rich, T.
- Tsan, P.**
- ; Oliver, C. F.; Modi, S.; Primrose, W. U.; Sutcliffe, M. J.; Lian, L. Y.; Roberts, G. C. K.
- Cytochrome P-450 BM3: NMR, modelling, mutagenesis and substrate specificity, A57
- Tuckwell, D.**
- ; Evolution of von Willebrand factor A (VWA) domains, 835
- Tuckwell, D. S.**, *See* Knight, C. G.
- ; The evolution of A-domains, A133
- Turley, E.**
- ; Hyaluronan receptors: the regulation of the cytoskeleton and their impact on skin wound, A12
- Turley, E. A.**, *See* Cheung, W.-F.
- Turner, A. J.**, *See* Hooper, N. M.
- ; Hooper, N. M.
- Role for ADAM-family proteinases as membrane protein secretases, A24, 255
- Turner, G. A.**, *See* Fotinopoulou, A.
- Turner, K.**
- ; Doherty, M.; Chapman, S.; Heering, D.; Armstrong, F.
- Voltammetric navigation of a flavocytochrome film, A45
- Turner, K. L.**, *See* Chapman, S. K.
- Ulukaya, E.**
- ; Wood, E. J.
- 4-Hydroxyphenyl retinamide-induced apoptosis in squamous cell carcinoma cells of vulva: role of Ca<sup>2+</sup>, A146
- Uney, J. B.**, *See* Noel, J.
- ; Targeting the hypothalamus: curing salt loss in Brattleboro rats, A139
- Ünlü, M.**
- ; Difference gel electrophoresis, A67, 547
- Urbé, S.**, *See* Clague, M. J.
- Uren, J.**, *See* Brandon, N. J.
- Ureta, T.**, *See* Cárdenas, M. L.
- Ursby, T.**, *See* Faulder, P. F.
- Usal, C.**, *See* Guillot, C.
- Vacher, D.**, *See* Pecqueur, C.
- Vaithanomsat, P.**
- ; Brown, K. A.
- Purification of 5-enolpyruvylshikimate-3-phosphate synthase from *Haemophilus influenzae*, A47
- Valdramidou, D.**, *See* Sengupta, A.
- Vandenabeele, P.**, *See* Jupp, O. J.
- van der Heyden, J.**, *See* Beaumont, A. J.
- Vanderhoek, J. Y.**, *See* Bailey, J. M.
- van Eldick, A.-M.**, *See* Brophy, P. M.
- van Heeswijk, W. C.**
- ; Bakker, B. M.; Teusink, B.; Khodenko, B. N.; Somsen, O. J. G.; Snoep, J. L.; Westerhoff, H. V.
- Live control of the living cell, 261
- van IJzendoorn, S. C. D.**, *See* Hoekstra, D.
- van Raaij, M. J.**, *See* Leslie, A. G. W.
- Van Regenmortel, M. H. V.**
- ; Analysis of structure-activity relationships with biosensors, A27, 329
- van Tunen, A. J.**
- ; Metabolic pathway engineering of plant secondary metabolites, A15
- Varani, G.**
- ; Molecular interactions in complex assemblies of proteins and nucleic acids, A88
- Vaughan, P. F. T.**, *See* Roberts, D. J.; Webster, N. J.
- Vegezzi, C.**, *See* Pilone, M. S.
- Vekrellis, K.**, *See* Eilers, A.
- Venkatesan, R.**
- ; Sagerson, D.
- Substrate specificity of rat heart phosphatidate phosphohydrolase, A123
- Venkateswarlu, K.**, *See* Cullen, P. J.; Lockyer, P. J.
- Venter, H.**, *See* Ward, A.
- ; Herbert, R. B.; Spooner, P. J. R.; Watts, A.; Henderson, P. J. F.
- Expression of isotopically labelled membrane transport proteins, A150
- Verdone, L.**
- ; RNA-protein interactions in nuclear pre-mRNA splicing, A89
- Verma, C.**, *See* Hussain, S.
- Vernon, E.**
- ; Meyer, G.; Vinh, N.; Workman, C.; Henley, J. M.
- Identification of  $\gamma$ -aminobutyric acid (GABA)<sub>b</sub>-R1-interacting proteins using the yeast two-hybrid system, A120
- Villadares, M. H.**, *See* Damblon, C.
- Vine, S.**, *See* Maddock, H. L.
- Vinh, N.**, *See* Vernon, E.
- Vinnicombe, H. G.**
- ; Derrick, J. P.
- Dehydropteroate synthase: an old drug revisited, 53
- Vinogradov, A. D.**, *See* Ohnishi, T.
- Virji, M.**
- ; Glycans in meningococcal pathogenesis, A85, 498
- Vogel, H.**, *See* Blassey, H. D.
- ; Design of molecular biosensor surfaces for screening ligand-receptor interactions by functional assay, A27
- Vogel, R.**, *See* Kiefer, H.
- Vollmer, P.**, *See* Müllberg, J.
- von Wachenfeldt, C.**, *See* Palmer, C. N. A.
- Vrecl, M.**, *See* Heding, A.
- Waddell, T. G.**, *See* Heinrich R.
- Wagener, R.**, *See* Paulsson, M.
- Wahlgren, M.**, *See* Barragan, A.
- ; Cell-to-cell interactions of importance for the development of severe *Plasmodium falciparum* malaria, A85
- Wait, R.**, *See* Hermansson, M.
- Walker, A.**, *See* Pryde, J. G.
- Walker, B. R.**, *See* Seckl, J. R.
- Walker, D. M.**, *See* Clague, M. J.
- Walker, J. E.**, *See* Leslie, A. G. W.
- Walker, K. S.**, *See* Schmoll, D.
- Walmsley, A. R.**
- ; Zeng, F.; Hooper, N. M.
- Detergent solubility and proteolytic processing of the prion protein, A54
- Walther, R.**, *See* Schmoll, D.
- Walton, J.**, *See* Pike, A. C. W.
- Walton, N. J.**, *See* Mitra, A.
- Wang, F.**, *See* Croucher, P. I.
- Wang, J.**
- ; White, A. L.
- Role of N-linked glycans, chaperone interactions and proteasomes in the intracellular targeting of apolipoprotein(a), 453
- Wang, L.**, *See* Thomas, C. R.
- Wang, M. F.**, *See* Brophy, P. M.
- Ward, A.**
- ; O'Reilly, J.; Rutherford, N. G.; Ferguson, S. M.; Hoyle, C. K.; Palmer, S. L.; Clough, J. L.; Venter, H.; Xie, H.; Litherland, G. J.; Martin, G. E. M.; Wood, J. M.; Roberts, P. E.; Groves, M. A. T.; Liang, W.-j.; Steel, A.; McKeown, B. J.; Henderson, P. J. F.
- Expression of prokaryotic membrane transport proteins in *Escherichia coli*, A140, 893
- Ward, A. C.**

- ; Dowthwaite G. P.; Pitsillides, A. A. Hyaluronan in joint cavitation, 128
- Ward, R.**, *See* Milligan, G.
- ; Milligan, G.  
Construction and analysis of  $\alpha_{2a}$ -adrenoceptor G<sub>i</sub>/G<sub>o</sub>  $\alpha$ -subunit fusion proteins, A115
- Ward, S.**, *See* Wilkinson, A.-S.
- Watford, M.**  
—; Mrs. Spratt, young penguins and drunken elephants: teaching metabolic regulation in relation to health and disease requires a whole-body approach, A22
- Watson, K. A.**  
—; Computers in drug design, A90
- Watson, M. A.**, *See* Halford, S. E.
- Watt, S.**, *See* Freeth, J. S.
- Watts, A.**, *See* Venter, H.  
—; The need for expression expertise in solid-state NMR studies of membrane protein and peptides: successes and wish lists, A131
- Way, G.**, *See* Wiedemann, C.
- Weber, T.**, *See* Wickel, M.
- Webster, G. W.**, *See* Snowden, A. W.
- Webster, K.**  
—; Parish, J.; Gaston, K.  
Induction of apoptotic cell death by human papillomavirus type 16 E2 protein, A97
- Webster, N. J.**  
—; Hodges, S.; Peers, C.; Vaughan, P. F. T.  
The effect of A $\beta$ -amyloid peptides on the uptake of choline and noradrenaline by the human neuroblastoma SH-SY5Y, A53
- Webster, S. P.**, *See* Leadbeater, C.
- Weigel, P. H.**, *See* Tlapak-Simmons, V. L.  
—; Properties of the hyaluronan synthase from Group A *Streptococcus pyogenes*, A10
- Welham, S. J. M.**, *See* Langley-Evans, S. C.
- Welsh, F.**, *See* Chapman, S. K.; Moysey, R.  
—; Rivers, S.; Chapman, S. K.; Reid, G. A.  
Altering the electron acceptor specificity of flavocytochrome b<sub>2</sub>, A45
- Wennström, S.**, *See* Lockyer, P. J.
- Werth, N.**, *See* Kolter, T.
- West, K.**, *See* Lutz, E. M.
- Westerhoff, H. V.**, *See* van Heeswijk, W. C.  
—; Live control of the living cell, A18
- Westphal, R. S.**, *See* Tavalin, S. J.
- Westwater, C.**, *See* Gow, N. A. R.
- Wharton, C. W.**, *See* Goodall, J. J.; Wilkinson, A.-S.  
—; Chance discovery versus rational design: implications for biochemistry degree courses, A91
- Wheatley, M.**, *See* Hawtin, S. R.
- Wheldon, L. M.**  
—; White, P. J.; Nahorski, S. R.; Willars, G. B.  
A comparative study of growth factor receptor and G-protein-coupled receptor phosphoinositide and Ca<sup>2+</sup> signalling in SH-SY5Y neuroblastoma cells, A34
- White, A. L.**, *See* Wang, J.  
—; Synthesis, secretion and assembly of lipoprotein(a) in hepatocyte cultures, A92
- White, D. A.**, *See* Bennett, A. J.; Sims, H. M.
- White, I.**, *See* Cutler, P.
- White, J.**, *See* Marshall, F. H.
- White, P. J.**, *See* Wheldon, L. M.
- White, R.**
- ; RNA polymerase III transcription: its control by tumour suppressors and its deregulation in cancers, A66
- White, S.**, *See* Middleton, J.
- Whiteley, E.**, *See* Tate, C. G.
- Whitfield, J.**, *See* Eilers, A.
- Whithouse, I.**  
—; Flaus, A.; Owen-Hughes, T.  
Catalytic nucleosome mobilization mediated by the SWI/SNF complex, A96
- Whiting, P. J.**, *See* Meddows, E.
- Whyte, M.**  
—; Renshaw, W. S.; Lawson, R.; Bingle, C.  
Apoptosis and the regulation of neutrophil lifespan, A134, 802
- Wickel, M.**  
—; Heinrich, M.; Weber, T.; Brunner, J.; Krönke, M.; Schütze, S.  
Identification of intracellular ceramide target proteins by affinity chromatography and TID-ceramide photoaffinity labelling, 393
- Wiedemann, C.**  
—; Way, G.; Cockcroft, S.  
Localization of phosphatidylinositol-transfer proteins in granulocytes, A103
- Wieland, F.**  
—; Mechanisms of COPI-vesicle biogenesis, A74
- Wilce, M. C. J.**, *See* Bond, C. S.
- Wilkening, G.**, *See* Kolter, T.
- Wilkinson, A.-S.**, *See* Goodall, J. J.  
—; Wharton, C. W.; Chittock, R.; Ward, S.; Page, M. G. P.; Goodall, J. J.  
Hydrogen bonding and protein perturbation in  $\beta$ -lactam acylenzymes of *Streptococcus pneumoniae* penicillin-binding protein PBP2x, A36
- Willars, G. B.**, *See* Heding, A.; Wheldon, L. M.  
—; Nahorski, S. R.; Eidne, K. A.; Heding, A.  
Absence of rapid desensitization and agonist-dependent phosphorylation of the mammalian gonadotropin-releasing hormone receptor is associated with the absence of a cytoplasmic C-terminal tail, A34
- Williams, G. T.**, *See* Hedge, V. L.
- Williams, S.**, *See* Mills, J.
- Williams, S. A.**, *See* Halford, S. E.
- Williams, T.**  
—; Hazlewood, S.  
Isolation and characterization of Epstein-Barr virus (EBV) BHRF1 homologues from Herpesvirus papio, A147
- Wilson, E. K.**, *See* Scrutton, N. S.  
—; Belletti, A.; Brzezinski, P.; Arese, M.; Grasso, S.; Liberti, S.; Cutruzzola, F.; Brunori, M.  
Photo-induced internal electron transfer in nitrite reductase from *Pseudomonas aeruginosa*, A57
- Wilson, M. A.**  
—; Anderson, N. G.; Milligan, G.  
Cell cycle regulation in rat 1 fibroblasts expressing a murine  $\delta$  opioid G<sub>i</sub>-linked receptor, A114
- Wilson, M. T.**, *See* Nicholls, P.
- Wilson, V.**  
—; Heasman, L.; Dandrea, J.; Stephenson, T.; Symonds, M. E.  
Developmental changes in the appearance of leptin in ovine adipose tissue, A50
- Windeatt, S.**, *See* Castro, M. G.
- Wise, A.**, *See* Foord, S. M.; Marshall, F. H.
- Wiseman, H.**, *See* Rowland, I.
- ; Importance of oestrogen, xenoestrogen and phytoestrogen metabolism in breast cancer risk, A13, 299
- Wisniewski, H.-G.**  
—; TSG-6: a hyaladherin associated with inflammation, A13
- Wittau, N.**, *See* Kalkbrenner, F.
- Witty, D.**, *See* Brown, M. J. B.
- Wolf, C. R.**, *See* Palmer, C. N. A.
- Wolffe, A. P.**  
—; Chromatin, co-activators and co-repressors: molecular mechanisms to establish and maintain states of gene activity, A65
- Wood, E. J.**, *See* Ulukaya, E.  
—; Overview of the biochemistry curriculum, A8
- Wood, I. C.**  
—; Mistry, M.; Roopra, A.; Buckley, N. J.  
Role of the transcription factor REST/NRSF in regulating endogenous gene expression, A125
- Wood, J. M.**, *See* Ward, A.
- Woodward, M. J.**, *See* Robertson, J. M.
- Workman, C.**, *See* Vernon, E.
- Worley, P.**  
—; Immediate-early gene modulation of synaptic function, homer and metabotropic signalling, A71
- Worrall, D. M.**  
—; Blacque, O. E.; Barnes, R. C.  
The expanding superfamily of serpins: searching for the real targets, 746
- Worthington, H. V.**, *See* Zaman, N.
- Wrigglesworth, J. M.**  
—; Core biochemistry: the Society's view, A8
- Wright, M. C.**  
—; The cytochrome P450 3A4 inducer metyrapone is an activator of the human pregnane X receptor, 387  
—; Induction of CYP3A expression by metyrapone is mediated through the pregnane X receptor, A62
- Wright, S. M.**, *See* Hunt, A. N.; Postle, A. D.
- Wright, T. J.**  
—; Maciewicz, R. A.; Hewitt, C. R. A.  
Use of neoepitope antibodies to study membrane processing of CD23, A54
- Wulff, M.**, *See* Faulder, P. F.
- Wyborn, N.**, *See* Mills, J.
- Wylie, P. G.**  
—; Challiss, R. A. J.; Blank, J. L.  
The role of calcium in muscarinic receptor activation of extracellular signal-related protein kinase and c-Jun N-terminal kinase pathways, A59
- Wymann, M. P.**  
—; Pirola, L.; Katanacav, V. L.; Bulgarelli-Leva, G.  
Phosphoinositide 3-kinase signalling: no lipids, A74, 629
- Xie, H.**, *See* Ward, A.
- Yagi, T.**, *See* Ohnishi, T.
- Yagisawa, H.**, *See* Fujii, M.
- ; Fujii, M.; Hirata, M.  
Phospholipase C- $\delta$  and related molecules, A76, 652
- Yan, Z.**, *See* Allen, P. B.
- Yang, L.**, *See* Carlotti, F.  
—; Carlotti, F.; Qwarnstrom, E. E.  
Preferential degradation of I $\kappa$ B $\alpha$  associated with nuclear factor (NF)- $\kappa$ B, but reassociation of NF- $\kappa$ B with free I $\kappa$ B $\alpha$  before nuclear translocation, A94
- Yang, S.**  
—; Galanis, A.; Sharrocks, A. D.

- Activation of transcription factors by mitogen-activated protein kinases: the role of kinase docking domains, A97
- Yano, T.**, *See* Ohnishi, T.
- Yarwood, S. J.**, *See* Hoffmann, R.; McPhee, I.
- Yates, A. J.**, *See* Rampersaud, A. A.
- Yballe, C. M.**, *See* Fruman, D. A.
- Yeung, D.**, *See* Athanassopoulou, N.
- Ying, W.**, *See* Barrett, L. B.
- Yoshikawa, S.**  
—; Crystal structure and reaction mechanism of bovine heart cytochrome *c* oxidase, A61  
—; X-ray structure and reaction mechanism of bovine heart cytochrome *c* oxidase, 351
- Young, K. W.**, *See* Budd, D. C.  
—; Mackrill, J. J.; Channing, D. R.; Challiss, R. A. J.; Nahorski, S. R.
- Lysophosphatidic acid-induced  $\text{Ca}^{2+}$  mobilization in SH-SY5Y cells is independent of phosphoinositide turnover, but dependent on sphingosine kinase stimulation, A112
- Young, L. S.**  
—; Dawson, C. W.; Eliopoulos, A. G. Epstein-Barr virus and apoptosis: viral mimicry of cellular pathways, A134, 807
- Yu, M. C.**, *See* Franke, A. A.
- Zachariae, W.**, *See* Shevchenko, A.
- Zachos, G.**  
—; Conner, J. Jun protein is involved in suppression of apoptosis during herpes simplex virus type-1 infection, A145
- Zaidi, A.**, *See* Chaloner, C.
- Zaman, N.**  
—; Rameh, B.; Worthington, H. V.; Rieley, F.; Schofield, D.; Braganza, J. M. Gall-stones and acute pancreatitis: more than a mechanistic connection?, A109
- Zegers, M. M. P.**, *See* Hoekstra, D.
- Zehavi, U.**, *See* Scott, R.
- Zeng, F.**, *See* Walmsley, A. R.
- Zhang, Z.**, *See* Berry, E. A.
- Zhao, J.**, *See* Lever, A. M. L.
- Zheng, W.**, *See* Franke, A. A.
- Zhuravin, I. A.**, *See* Plesneva, S. A.
- Zickermann, V.**, *See* Okun, J. G.
- Zisling, R.**, *See* Futerman, A. H.
- Zomerdijk, J. C. B. M.**, *See* Cabart, P.; Friedrich, J. K.

- A domains  
of collagen type VI, 821  
evolution of, A133, 835  
of integrin, E-cadherin binding of, A145  
of malaria protein, A132  
of von Willebrand factor: *see von Willebrand factor type A domain.*
- Actin-binding protein, androgen receptor interaction with, A120
- ADAMs (a disintegrin and metalloproteinase-like) proteinases  
characterisation of, 219  
in IL-6 receptor shedding, 224  
as membrane protein secretases, A24, 255
- Adenosine receptor A<sub>3</sub>, internalisation of, receptor phosphorylation in regulation of, A115
- Adenosine-associated viral vector, preprotachykinin-A promoter delivery by, A94
- Adenoviral vector  
for gene therapy, A136  
heart allograft survival and, A137, 864  
gutless, A136  
to treat ischaemic disease, A148
- Adenyl cyclase  
in action of insulin superfamily peptides and protein kinase C interaction, A119  
in brain, cholinergic agent effects on, ganglioside GM1 modulation of, A112
- Adipose tissue  
brown, prolactin receptor in, effect of birth and ambient temperature on, A49  
fetal, maternal nutrient restriction and, A7, 97  
leptin in, developmental changes in appearance of, A50
- Adolescent, preadrenarche, androgens and glucocorticoids effect on blood pressure in, A7
- ADP-ribosylation, in insulin-regulated membrane trafficking, A77
- ADP-ribosylation factor, Golgi complex spectrin skeleton assembly regulation by, 638
- ADP-ribosylation factor 6 signalling, phosphatidylinositol 3,4,5-trisphosphate regulation of, 683
- ADP-ribosylation factor GTPases, in signal transduction and membrane traffic, 642
- ADP-ribosylation factor proteins  
exocytic secretion and, A103  
phospholipase D regulation of, A75
- $\alpha_{1B}$ -Adrenergic receptor  
functions of, regulation of, 154  
internalisation of, A114
- $\alpha_{2A}$ -Adrenergic receptor, agonist-specific coupling of, transmembrane serine residue effect on, A31
- $\alpha_{2A}$ -Adrenergic receptor subunit fusion proteins, construction and analysis of, A115
- $\alpha_2$ C2-Adrenergic receptor receptor, human, expression in different host-vector systems, A151
- $\beta_2$ -Adrenergic receptor, phosphorylation and regulation of, by phospholipase C-coupled muscarinic receptor, A34
- Adrenomedulin, glycosylation state and ligand binding of, RAMP amino terminus and, A71, 535
- Agarose, recovery of mRNA from chondrocytes in, A42
- Ahd1*, as new class of restriction-modification system, A126
- Alcelaphine herpesvirus-1 gene expression, ORF50 in, A98
- Alcohol, metabolism of, in biochemistry curriculum, A22
- Alcohol biosensor, reagentless, from *Gluconobacter quinohaeomoprotein* alcohol dehydrogenase, A52
- Alkaline phosphatase, placental, electrochemical detection of, A151
- Allopurinol, in kinetic studies of xanthine oxidase activity in milk, A152
- Alloxanthine, in kinetic studies of xanthine oxidase activity in milk, A152
- Alzheimer's amyloid precursor protein(s)  
angiotensin-converting enzymes and, 229  
effect on neuroblastoma uptake of choline and noradrenaline, A53  
proteolytic cleavage and release of, A23  
transmembrane molecule shedding and, 243
- Alzheimer's disease, eicosanoids and, A125
- Amastigotes, from *Leishmania*, proteophosphoglycans from, 518
- Amine oxidases, tyrosine residues in, A2
- $\gamma$ -Aminobutyric acid receptor  
as heterodimer, 530  
heterodimerisation of, A70  
ionotropic, synaptic targeting and regulation of, A70  
regulation of, synaptic targeting and, 527
- $\gamma$ -Aminobutyric acid receptor-interacting proteins, identification of, A120
- Aminopeptidase(s), proteinase with, in generation of non-bitter casein hydrolysates, 730
- Aminopeptidase N, proteolytic fragmentation of, A54
- AMPA receptor, hippocampal neuron expression of, NSF-dependent regulation of, A117
- Amylogenin gene, of rice, A52
- $\alpha$ -Amyloid precursor protein(s)  
proteolytic processing and degradation of, 234  
transmembrane molecule shedding and, 243
- $\beta$ -Amyloid precursor protein  
secretases, angiotensin-converting enzymes and, 229
- $\beta$ -Amyloid protein(s), effect on neuroblastoma uptake of choline and noradrenaline, A53
- Anandamide, in placenta, A48
- Androgen(s), preadrenarche, blood pressure and, A7
- Androgen receptor, filamin interaction with, A120
- Androgen receptor protein, Tip60 as co-activator protein of, A121
- Angiotensin: *see Renin-angiotensin system.*
- Angiotensin-converting enzyme  
amyloid precursor protein secretases and, 229  
phorbol ester-induced juxtamembrane cleavage of, disulphide-bridged stalk and, A56  
proteolytic cleavage and release of, A23
- Antibiotics  
coenzyme A and, A3  
DNA gyrase as target of, A3, 48  
polyketide, biosynthesis of, A3  
protein, inhibitors of, A4, 63
- Antifungal drug(s), development of, *Candida* cell wall mannosylation and, A86
- Antifungal drugs, targeting of, *Candida* cell wall mannosylation and, 512
- Antioxidant  
astrocytes in release and preservation of, in neuroprotection, A152  
flavonoids as, A16
- Antipsychotic agents  
action mechanisms of, 175  
dopamine receptor antagonists vs inverse agonists as, A26
- Antisperm antibodies, in male infertility, A152
- Aorta, chylomicron remnant uptake by, hypercholesterolaemia and, A51
- AP1 and AP3, in GLUT4 compartmentalisation, A100
- Apolipoprotein(a): *see also Lipoprotein(a).*  
expression of and, 447  
genetic structure of, A92, 447, 463  
myocardial infarction and, 463  
intracellular targeting of, role of N-linked glycans, chaperone interactions, and proteasomes in, 453  
regulation of, A92
- Apolipoprotein(a) gene: *see also Lipoprotein(a).*  
putative enhancer regions in, A122
- Apoptosis  
caspase and, A133, 797  
in cell-free systems, A133  
ceramide and, A78, A80, 399, 428  
of developing neurons, c-Jun and Bax in, A135, 785, 790  
drug-induced, Bcl and Bax suppression of, A147
- Epstein-Barr virus and, A134, 807  
in gastric mucous cells, nitric oxide synthase and, A145  
genes controlling, in herpesvirus, A148
- Golgi complex in, A146  
in herpes simplex virus type 1 infection, Jun protein suppression of, A145  
human papillomavirus type 16 induction of, A97
- hydroxyphenyl retinamide-induced, in vulvar squamous cell carcinoma, A146
- of infected cells, poxvirus strategies in, A134
- MHC and, A135, 781
- of neutrophils  
inflammation and, A134, 802  
regulation of, 802
- NF- $\kappa$ B and, A94, A134, 812
- nitric oxide induction of, in PC12 cells, A146
- phosphoinositide 3-kinase in, A74  
of T cells, A135
- TNF and its receptors in, A134
- v-Abl protein tyrosine kinase suppression of, A136, A147
- Arabidopsis thaliana*, cloning and expression of diacylglycerol acyltransferase from, A124
- AreA protein, from *Aspergillus nidulans*, A126
- ARF: *see ADP-ribosylation factor (ARF) proteins.*
- Arginine vasopressin  
coupling of, 158  
S100 protein translocation induced by, in renal tissue discs, A59
- Arginine vasopressin receptor  
coupling of, cell cycle-dependent, A25  
high affinity binding to, molecular determinants of, A33
- Aromatase, breast cancer risk and, A14
- b-Arrestin, GnRH receptor internalisation dependent on, A34
- Arthritis, rheumatoid, chondroitin sulphate epitopes in, A41
- Articular cartilage  
in collagen synthesis stimulated by N-terminal link protein peptide, A40
- IL-1 effect on, A120

- Ascorbate, in midpathway, A16
- Aspartate- $\beta$ -semi-aldehyde dehydrogenase, kinetic mechanism of and interaction with small molecule inhibitors, A38
- Aspergillus nidulans*, AreA protein from, A126
- Astrocytes, antioxidant release and preservation by, in neuroprotection, A152
- Atherosclerosis, lipoprotein(a) and TGF- $\beta$  in, A92
- ATP, supply and consumption of, A19, 271
- ATP synthesis, in ischaemically exercising skeletal muscle, A48
- ATR protein kinase, biochemical characterisation of, A97
- Autoimmune disease, gene transfer for, A137, 869
- B cell, development and proliferation of, in phosphoinositide 3-kinase knockout mice, p85 $\alpha$  in, 624
- Bacteria, ribosomal RNA structure in, A89
- Bacterial fermentation, hyaluronan synthesis by, A42
- Bacterial-host protein-carbohydrate interactions, pathogenicity and, A83, 471
- Baculovirus
- insect cells infected with, opioid receptor- $\mu$  in, A151
  - visual pigment functional expression based on, A142
- Baculovirus vectors, for production of membrane proteins in insect cells, A142, 928
- Barrett's oesophagus, mucin genes in, A41
- Basal ganglia, histamine H<sub>2</sub> receptor binding distribution in, in Huntington's disease, A33
- Bax
- drug-induced apoptosis suppression by, A147
  - in regulation of apoptosis of developing neurons, A135, 790
- Bcl, drug-induced apoptosis suppression by, A147
- Bcl-2-related proteins, cancer and, A135, 785, 790
- Behavioural development, oestrogen in, A5
- Beta vulgaris*, *Bvcrk1* gene structure and expression in, A96
- Biacore, A28, 335
- bio 1* gene, as a cytochrome P450, A44
- Biochemistry curriculum
- alcohol metabolism in, A22
  - assessment of, A8
  - chemistry necessity in, A9
  - enzyme kinetics in, A21
  - computers in, A21
  - European perspective on, A8
  - fuel supply in starvation and weight loss in, A22
  - inborn errors of metabolism in, A22
  - industrial perspective on, A9, A22
  - lessons from biological sciences on, A9
  - linking research and teaching in, A22
  - metabolism in relation to health and disease in, A22
  - overview of, A8
  - pharmaceutical perspective on, A9
  - problem-based learning in, A31
- Biological fluids, and surface chemistry of silicon semiconductors, A52
- Biomolecule, structure-activity relationships of, biosensory analysis of, A27
- Biosensors
- in analysis of biomolecular structure-activity relationships, A27, 329
- Biacore as, A28, 335
- for environmental monitoring, A27
  - holographic, A28
  - molecular imprinted, A28, 344
  - past, present, and future of, A27, 331
  - reagentless alcohol, from *Gluconobacter quinohaemoprotein* alcohol dehydrogenase, A52
  - to screen ligand-receptor interactions, A27
- Birth, effect on prolactin receptor in brown adipose tissue, A49
- Blood fluke, cathepsin L-like proteinases of, 740
- Blood pressure: *see also* Hypertension. control of, preadrenarche androgens and glucocorticoids and, A7
- Brain
- adenylyl cyclase in, cholinergic agent effects on, ganglioside GM1 modulation of, A112
  - gender-specific formation of, A5
  - glyco- and lyso-sphingolipids in, A113
  - Homer proteins in, molecular characterisation of, A113
  - K<sup>+</sup>-evoked glutamate release from, naloxone benzolhydrazone inhibition of, A33
  - synaptic structure of, A69
- Brain tumour, gene therapy for, A138, 873
- Brassica*, glucosinolate content of, A17
- Breast cancer
- cyclin D1 in, A63
  - oestradiol 17 $\beta$ -hydroxysteroid dehydrogenase in, A15, 323
- risk of
- aromatase and, A14
  - oestrogen, xeno-oestrogen, and phyto-oestrogen metabolism in, A13, 299
  - oestrogen 4-hydroxylation and, A14, 318
  - steroid sulphatase regulation in, A15, 323
- Bvcrk1* gene, structure of and expression in *Beta vulgaris*, A96
- Caffeic acid, anti-hepatotoxic activity of, A145
- Calcitonin gene-related peptide, glycosylation state and ligand binding of, RAMP amino terminus and, A71, 535
- Calcium
- c-fos* transcription regulation by, A99
  - intracellular, muscarinic-evoked increase in, noradrenaline release and, A32
  - in muscarinic receptor activation of ERK and JNK pathways, A59
  - signalling by in neuroblastoma cells, growth factor receptors and G protein-coupled receptors in, A34
- Calcium channel
- neuronal, in G protein modulation, A25
  - presynaptic, SNARE protein interaction with, in neurotransmitter release, A71
  - regulation by, CBP activation and, A93
- Calcium mobilisation
- lysophosphatidic acid induction of, sphingosine kinase dependence of, A112
  - sphingolipids and, A112
- Calcium oscillations, purinoceptor P2Y-mediated, in L-fibroblasts, A32
- Calcium signals, protein kinase C decoding of, A73
- Calmodulin, glutamate receptor presynaptic metabotropic signalling dependent on, A35
- Cancer, Bcl-2-related proteins and, A135, 785, 790
- Cancer cell, killing of, E2F and, A64
- Candida*, cell wall mannosylation in, antifungal drug targeting and, 512
- Candida* cell wall, mannosylation of, antifungal drug development and, A86
- Carbohydrate, bacterium and protein host interaction with, pathogenicity and, A83, 471
- Carbohydrate profile, of therapeutic recombinant plasminogen, A111
- Carboxymethyl cytochrome c, as artificial heme enzyme, A127
- Cardiovascular disease, eicosanoids and, A125
- Caricain, electrostatic and hydrogen bonding interactions of, with time-dependent inhibitors, A37
- Carotid artery plaques, matrix metalloproteinase-3 immunolocalisation in, A43
- Cartilage, articular, IL-1 effect on, A120
- Casein hydrolysates, non-bitter, generation of, 730
- Casein kinase I, centaurin- $\alpha$  association with, A105
- Casein kinase I $\alpha$  binding site, in muscarinic M3 receptor, A116
- Casein kinase II, phosphorylation of phosphatidylinositol 5-phosphate 4-kinases by, A101
- Caspase
- apoptosis and, A133, 797
  - nitric oxide and, in macrophages, A146
- Catalytic site content, of enzymes and enzyme-like catalysts, kinetic approach to determination of, A37
- Catecholamine sulphotransferase, glutamate 146 and substrate specificity of, A36
- Cathepsin L-like proteinases, of liver fluke and blood fluke parasites, 740
- C3B binding site, in von Willebrand factor type A domain, A144
- CBP, activation of, NMDA receptor and calcium channel regulation and, A93
- CCK<sub>A</sub>-binding inhibitors, screening for, A35
- CD44
- hyaluronan interactions with on keratinocytes, displacement of, A40
  - in mononuclear leukocyte adherence, in colon-derived smooth muscle cells, A10
  - in hyaluronic acid fragment activation of NF<sub>κ</sub>B, A43
  - regulation of, A42
- CD23, membrane processing of, neopeptope antibodies in study of, A54
- Cell cycle
- CDF and, A63
  - Id protein interaction with transcriptional regulators in, A98
  - vasopressin receptor coupling dependent on, A25
- Cell cycle re-entry, MAP kinase and phosphoinositide 3-kinase effect on, A96
- Cell cycle regulation
- in fibroblasts,  $\delta$  opioid G<sub>i</sub>-linked receptor and, A114
  - small GTPases and, 363
- Cell polarity
- membrane flow and lipid sorting and, 422
  - subapical compartment in, A79
- Cell proliferation
- E2F regulation of, A64
  - Myc proto-oncogene and, A63
  - p85 $\alpha$  in, in phosphoinositide 3-kinase knockout mice, A73
  - small GTPases and, A61

- Cell signalling, sphingomyelinases in, A78  
 Cell wall, of plants, mechanical properties of, A15, 961  
 Cell walls, of *Candida*, antifungal drugs and, A86  
 Cell-free systems, apoptosis in, A133  
 Cellubrevin, in protein kinase B translocation of GLUT4, A105  
 Centaurin protein(s), as phosphoinositide signalling target, A104  
 Centaurin protein  $\alpha$ , casein kinase I association with, A105  
 Centaurin protein  $\gamma$ , as G protein, A103  
 Cephalosporin, biosynthesis of, A4  
 Ceramide, apoptosis and, A78, A80, 399, 428  
 Ceramide target proteins, intracellular, identification of, 393  
 c-fos transcription, calcium regulation of, A99  
 CGRP: see Calcitonin gene-related peptide.  
 Chance discovery, of compounds, A91  
 Chaperone interactions, in intracellular targeting of apolipoprotein(a), 453  
 Cholera toxin, G<sub>M1</sub> and, IAsys study of, A28, 340  
 Cholesterol, dietary  
     hepatic microsomal triglyceride transfer protein and, A50  
     metabolism of, oestrogen and, A50  
     triglyceride transfer protein gene expression and, A122  
 Choline  
     neuroblastoma uptake of, A $\beta$ -amyloid peptide effect on, A53  
     phosphatidylcholine synthesis from, A123  
 Cholinergic agent, effects on brain adenylyl cyclase, ganglioside GM1 modulation of, A112  
 Chondrocyte  
     mRNA recovery from, in agarose, A42  
     n-3 fatty acid mediation of proteinase activity in, A96  
     pericellular matrix of, A12  
     hyaluronan in, 142  
 Chondroitin sulphate, in malaria during pregnancy, 478  
 Chondroitin sulphate epitopes, in rheumatoid arthritis, A41  
 Chromatin  
     gene activity and, A65  
     transcription and, A65  
 Chromium VI, toxicity in osteoblasts, glutathione reductase and, A128  
 Chylomicron(s), of different fatty acid composition, conversion of to chylomicron remnants, A51  
 Chylomicron cholesterol metabolism, oestrogen and, A50  
 Chylomicron remnant  
     aorta uptake of, hypercholesterolaemia and, A51  
     conversion of chylomicrons of different fatty acid composition to, A51  
     liver uptake of, effect of antibody to hepatic lipase on, A51  
 Circumsporozoite protein, in malaria, heparan sulphate RNA binding motifs and, 482  
 c-Jun, in regulation of apoptosis of developing neurons, A135, 790  
 Clenbuterol, skeletal muscle IGF-II upregulation by, A121  
 Clot dissolution therapy, pancreatic acinar cell injury after, A109  
 Coenzyme A, antibiotics and, A3  
 Colicins, inhibitors of, 63  
 Collagen  
     biochemistry of, gene therapy and, 15  
     biosynthesis of, N-terminal link protein peptide and, A40  
     sequence GFOGER, as integrin binding site, A144  
     type VI, A-domain function in, A131, 821  
     type X, proteoglycan epitope colocalisation with, A42  
 Collagen VI assembly  
     MIDAS in, A144  
     in vitro, A144  
 Colon tumour cells, quercetin effect on, A127  
 Colon-derived smooth muscle cells, mononuclear leukocyte adherence in, hyaluronan-CD44 interactions in, A10  
 Complex I, ubiquinone and inhibitor sites in, A83, 586, 596, 602, 606  
 Complex I inhibitors  
     binding sites of, A83, 586, 596, 602, 606  
     insecticidal activity of, A83  
     N-heterocyclic, with insecticidal activity, 602  
 Compounds, chance discovery of, A91  
 Computer simulation, of glucose metabolism in heart, A48  
 Computers, in drug design, A90  
 Concentration polarisation, during ultrafiltration, A41  
 COPI-vesicle biogenesis, A74  
 Coronary artery occlusion, lipoprotein(a) level in, A122  
 Coumarin antibiotics, DNA gyrase as target of, A3, 48  
 CpG island-associated gene, core histone acetylation of, in chicken embryo erythrocytes, A97  
 Cre/loxP system, in glucocorticoid signalling, 78  
 CRF, binding of, compounds enhancing, A35  
 Cyclic AMP response element, control of muscarinic M<sub>1</sub> receptor-regulated gene expression, A119  
 Cyclic AMP/dexamethasone, suppression of, by insulin-induced glucose-6-phosphatase transcription, A106  
 Cyclic GMP level, nitric oxide metabolism and, in schizophrenia, A50  
 Cyclin D1, in breast cancer, A63  
 6-S Cysteinyl FMN, stepwise electron transfer to, in trimethylamine dehydrogenase, A45  
 Cystic fibrosis, gene therapy for, A137  
 Cytochrome *b*, flavocytochrome P450 BM3 in complex with, electron transfer in, A108  
 Cytochrome *bc*  
     famoxadone and oxazolidinones inhibition of, 577  
     inhibition of, by famoxadone and oxazolidinones, A81  
     inhibitor resistance and dysfunction of, yeast as eukaryotic model for, A127  
     membrane protein quinone-binding sites in, 565  
     functional implications of, 565  
     in *Rhodobacter capsulatus*, 572  
 Q sites of  
     cardiac, A82  
     in mitochondria, A80  
     structure, function, and dysfunction of, A81  
     ubisemiquinone stabilisation in, A81  
     in yeast, A81  
 Cytochrome *bo*, membrane protein quinone-binding sites in, in *Escherichia coli*, 581  
 Cytochrome *c*, from *Shewanella putrefaciens*, A58  
 Cytochrome *c* oxidase, cardiac crystal structure and reaction mechanism of, A61  
     X-ray structure and reaction mechanism of, 351  
 Cytochrome oxidase, cardiac, ferrous cyanide compound of, A128  
 Cytochrome P450: *see also* Flavocytochrome entries.  
     in adaptive responses to fatty acids, 374  
     *bio 1* gene as, A44  
     effect of microsomal membrane hydrogenation on, A109  
     fatty acid metabolism and, A62  
     genetic regulation of, by lipid, 378  
     hepatic microsomal, membrane and, A61  
     lipid modulation of  
         in liver, 371  
         metyrapone activation of pregnane X receptor in, 387  
         sphingomyelin hydrolysis and, 383  
         sphingomyelin metabolism and, A62  
 Cytochrome P450 BioI, from *Bacillus subtilis*, expression and characterisation of, A108  
 Cytochrome P450 BM3, NMR, modelling, mutagenesis, and substrate specificity of, A57  
 Cytochrome P450 mono-oxygenase system, flavoprotein reductase in, A29, A30  
 Cytochrome P450 1B1, in ovarian cancer, A124  
 Cytochrome P450 3A, metyrapone-mediated induction of, pregnane X receptor in, A62  
 Cytochrome P450 3A4, surface enhanced resonance Raman scattering of, A36  
 Cytokines, macrophage lipoprotein lipase regulation by, A95  
 Cytoskeleton, hyaluronan receptors and, A12  
*Datura stramonium*, hairy root cultures of, *p*-hydroxycinnamoyl-CoA hydratase/lyase in, A51  
 Deacetoxyccephalosporin C synthase, studies on, A36  
 Dehydroquinate synthase  
     from *Escherichia coli*, Zn<sup>2+</sup> form of, A47  
     from *Salmonella typhimurium*, site-directed mutagenesis of active site residue in, A47  
 Deiodinase, fetal protection by, from thyroid hormones, A6  
 Deiodinases, thyroid hormone and, 83  
 Dendrite, protein phosphatase I in, A72, 543  
 Denervation, skeletal muscle IGF-II upregulation by, A121  
 Dexamehtasone, cardiac protein kinase C expression and, A49  
 Diabetes mellitus, insulin-dependent, genomics and aetiology of, A1  
 Diacylglycerol acyltransferase, cloning and expression of, from *Arabidopsis thaliana*, A124  
 Diacylglycerol signals, protein kinase C decoding of, A73  
*Dictyostelium myosin II* mutants, characterisation of, A38  
 Diet, cholesterol in, hepatic microsomal triglyceride transfer protein and, A50  
 Difference gel electrophoresis, A67, 547  
 Dihydropteroate synthase, as drug target, A3, 53  
 Disulfide-bridged stalk, and phorbol ester-induced juxtamembrane cleavage of angiotensin-converting enzyme, A56  
 DNA  
     complex with nuclear toxins and immunity proteins, A87  
     double-strand breaks in, detection and repair of, 1

**EcoKI** restriction/modification enzyme interaction with, A87, 691  
 minor groove of, HMG box interactions with, A126  
 protein interactions with, A88  
 restriction enzymes acting simultaneously at two sites of, A88  
 supercoiling of, DNA gyrase and, A87  
**DNA gyrase**, as drug target, A3, 48  
**Dopamine receptor**, antagonists vs inverse agonists of, as antipsychotics, A26  
**Drug design**, computers in, A90  
**Dyanmin**, protein kinase C and, in *Schizosaccharomyces pombe*, A59

**Early endosomal antigen-1**, lipid binding by, A107  
**Early endosome dynamics** phosphatidylinositol 3-phosphate regulation of, 662 phosphatidylinositol 3-phosphate-binding protein regulation of, 662  
**E-cadherin**, integrin A domain binding to, A145  
**EcoKI** restriction/modification enzyme, DNA interaction with, A87, 691  
**EcoRV** restriction enzyme, acting simultaneously at two DNA sites, A88  
**Education**: see Biochemistry curriculum.  
**EEA1**, early endosome dynamic regulation by, A76  
**EGF**: see Epidermal growth factor.  
**EGR-1**, NF- $\kappa$ B transcription and, A99  
**Eicosanoids**, in cardiovascular and Alzheimer's diseases, A125  
**Electron and proton transfer coupling**, in photosynthetic reaction centre, from *Rhodopseudomonas viridis*, A82  
**Electron transfer** in ferredoxin NADP<sup>+</sup> reductase, in *Escherichia coli*, A56 ferredoxin NADP<sup>+</sup> residues in, A56 in flavocytochrome P450 BM3 in complex with cytochrome b, A108 flavocytochromes in, A29, A30, 179, 185, 190, 196 in  $\omega$ -hydroxylation, rubredoxin reductase and rebredoxin in, A46 methylamine dehydrogenase in, A30 non-physiological, A58 photo-induced, in nitrite reductase from *Pseudomonas aeruginosa*, A57 in protein film voltammetry, A31, 206 ribonucleotide reductase in, A30 stepwise, to 6-S cysteinyl FMN, in trimethylamine dehydrogenase, A45 in trimethylamine dehydrogenase, 196 flavoprotein in, 196 structure and function of, 201  
**Electrostatic interactions**, of carboxin and time-dependent inhibitors, A37  
**Embryogenesis**, hyaluronan in, A11  
**Endocytic membrane traffic**, phosphatidylinositide trisphosphate regulation of, A76  
**Endocytic rate**, protein kinase C and, in neuroblastoma cells, A106  
**Endocytosis**, protein kinase C and, in *Schizosaccharomyces pombe*, A59  
**Endonucleases**, intron-encoding homing, A39  
**Endoplasmic reticulum**, membrane protein biosynthesis at, A139, 883  
**Endothelial cells** functioning of, hypercholesterolaemia and, A51 T cell adhesion to in laminar flow, A107 phosphatidylserine and, A108  
**Endothelial differentiation gene products**, sphingosine 1-phosphate extracellular actions through, 404

**5-Enolpyruvylshikimate-3-phosphate synthase**, from *Haemophilus influenzae*, A47  
**Environment** monitoring of, biosensors for, A27 neuroendocrine development and, A6  
**Enzyme(s)**, in quantum world, 767  
**Enzyme catalysis** rotary, 33 single molecule, 33 visualising intermediates in, 42  
**Enzyme kinetics** in biochemistry curriculum, A21 computers in, A21 from metabolic perspective, A19, 281 of myosin ATPases, A2  
**Epidermal growth factor** regulation of keratinocyte hyaluronan metabolism by, A40 signal transduction pathway of, stimulation of, A48  
**Epithelial cells** gastric, *Helicobacter pylori* adhesion to, lipopolysaccharide in, A110 malignant, differentiation of by contact with peripheral nerve tissue, A35  
**Epstein-Barr virus** apoptosis and, A134, 807 latent membrane protein 1 from, apoptosis suppression by, A148  
**Epstein-Barr virus BHRF1 homologues**, from *Herpesvirus papio*, A147  
**ERK pathway**, muscarinic receptor activation of, calcium in, A59  
**Erythrocytes**, of chicken embryo, core histone acetylation of CpG island-associated gene in, A97  
*Escherichia coli* aminopeptidase P from, structure of, A130 capsular polysaccharide from, biosynthesis of, A85 cytochrome bo in, membrane protein quinone-binding site structure and function and, 581 dehydroquinate synthase from, Zn<sup>2+</sup> form of, A47 ferredoxin NADP<sup>+</sup> reductase electron transfer in, A56 FucP expression in, A150 GPCR in for neuropeptins, A140 refolding of, A141, 908 K5 capsular polysaccharide of, biosynthesis of, 507 lactose catabolic system in, A19, 264 membrane transport proteins in, A140, 893 mitochondrial uncoupling proteins in, expression and purification of, 888 neuropeptin receptor in, 899 outer membrane iron transporter from, A140, 903  
**Estrogen**: see Oestrogen.  
**Eukaryotic gene expression**, x-ray crystallographic studies of, A88  
**Excitatory synapses**, post-synaptic membrane in, A69  
**Exocytic secretion**, ARF and phospholipase D in, A103  
**E2F** cancer cell death and, A64 cell proliferation and, A64  
**Famoxadone**, cytochrome bc inhibition by, A81, 577  
*Fasciola*, cathepsin L-like proteinases of, 740  
**Fast diffraction**, to visualise enzyme intermediates, 42  
**F<sub>1</sub>-ATPase**, mitochondrial, structure of, A2, 33  
**Fatty acid composition**, of chylomicrons, conversion of to chylomicron remnants, A51

**Fatty acid metabolism**, cytochrome P450 activity and, A62  
**Fatty acids** adaptive responses to, cytochrome P450 and, 374 IMR-32 cellular morphological differentiation and, A100 oxidation of, plant lipoxygenases and, A17 very long chain, herbicide inhibition of synthesis of, A123  
**Fc<sub>y</sub>RI** in association of SHIP with Shc, A128 protein kinase C and phospholipase activation by, monocyte differentiation and, A101  
**Ferredoxin NADP<sup>+</sup>**, NADPH binding and electron transfer residues in, A56  
**Ferredoxin NADP<sup>+</sup> reductase**, electron transfer in, in *Escherichia coli*, A56  
**Ferredoxin-reducing centres**, quinone binding site in, A82  
**Ferrous cyanide compound**, of cardiac cytochrome oxidase, A128  
**Fetus** adult disease programming in, A8 deiodinase protection of, from thyroid hormones, A6 glucocorticoids and, A5 growth of: see also Intrauterine growth retardation genomic imprinting and, A5 hypertension in, renin-angiotensin system in, A6, 88 kidney of, growth arrest specific gene 6 in, maternal protein deficiency and, A49 maternal nutrient restriction and fetal adipose tissue and, A7, 97 insulin sensitivity and, A7, 94 neuroendocrine adaptation to, A7 programming of, glucocorticoids and, 74 thyroid hormone effects on, 83  
**FGF**: see Fibroblast growth factor.  
**Fibrinolysis**, trypsinogen activation and, in acute pancreatitis, A110  
**Fibroblast**, cell cycle regulation in,  $\delta$  opioid G<sub>i</sub>-linked receptor and, A114  
**Fibroblast growth factor**, MAP kinase activation by, A121  
**Filamin**, androgen receptor interaction with, A120  
**Fimbrial lectins**, from *Salmonella enteritidis*, A111 intestinal infection and, A110  
**Fish waste hydrolysates**, immunostimulatory peptides from, A53  
**Flavocytochrome(s)**, structure and electron transfer implications of, A29, A30, 179, 185  
**Flavocytochrome b**, flavodehydrogenase domain of, Leu-Trp mutant of, A43  
**Flavocytochrome b<sub>2</sub>** electron acceptor specificity of, alteration of, A45 R289K mutant of, structure-function studies of, A57  
**Flavocytochrome c<sub>3</sub>** film, voltammetric navigation of, A45  
**Flavocytochrome P450 BM3** active site mutants of, catalytic properties of, A44 active site of, re-designing of, A108 cytochrome b complex with, electron transfer in, A108 electron transfer and, 190 nitric oxide interaction with, A44 resonance Raman spectroscopic analysis of, A45 substrate binding in, A44

- Flavodehydrogenase domain, of flavocytochrome *b*, Leu-Trp mutant of, A43**  
**Flavonoids, as antioxidants, A16**  
**Flavoprotein reductase, in P450 monooxygenase system, A29**  
**Flavovirus, inhibition of, by nucleoside and PFA analogues, A152**  
**FOG-1, zinc fingers in potentiation of, A99**  
**Fucose membrane protein FucP, in *Escherichia coli*, A150**  
**Fuel supply, in starvation and weight loss, in biochemistry curriculum, A22**  
**Fumarate reductase, kinetic analysis of, A57**  
  
**G<sub>M1</sub>, cholera toxin and, IAsys study of, A28, 340**  
**G protein(s)**  
 activation of, by serotonin receptor and G fusion proteins, A114  
 centaurin  $\gamma$  as, A103  
 GAP deactivation of, A66  
 modulation of, neuronal calcium channels in, A25  
 trimeric, A1  
**G protein-coupled receptor(s): see also Protease-activated receptors.**  
 acute and chronic regulation of, A25  
 in adaptative neuronal processes, A26  
 and  $\text{Ca}^{2+}$  and phosphoinositide signalling, in neuroblastoma cells, A34  
 for neuropeptidin, in *Escherichia coli*, A140  
 promiscuity and fidelity in, 158  
 refolding of, in *Escherichia coli*, A141, 908  
 signalling and regulation diversity in, A24, 149  
 synapse ion channels and, A26  
 visual pigment expression and, 937  
**G protein-coupled receptor agonists, internalisation of, receptor internalisation and, A32**  
**GABA receptor: see  $\gamma$ -Aminobutyric acid receptor.**  
**Galactose, tyrosine residues in, A2**  
**Galactose oxidase, TPO-dependent amine oxidase and, A31**  
**Gallstones, acute pancreatitis and, A109**  
**Ganglioside(s), growth factor receptors and, A79, 415**  
**Ganglioside G<sub>M1</sub>, modulation of cholinergic agent effects on brain adenyl cyclase, A112**  
**GAP, G protein deactivation by, A66**  
**GAP1**  
 inositol 4-phosphate binding by, A104  
 as phosphatidylinositol 3-phosphate-binding protein, A104  
**Gastric epithelial cells, *Helicobacter pylori* adhesion to, lipopolysaccharide in, A110**  
**Gastric mucosa, apoptosis in, nitric oxide synthase and, A45**  
**GATA-1, FOG-1 contact with, zinc fingers in, A99**  
**Gel electrophoresis, difference, 547**  
**Gender, brain formation and, A5**  
**Gene circuitry, design of, by natural selection, 264**  
**Gene therapy**  
 adenoviral vectors for, A136  
 heart allograft survival and, A137, 864  
 for brain tumour, A138, 873  
 for cancer, retroviral transduced haemopoietic stem cells for, A148  
 and cell type-specific expression in pituitary, 858  
 collagen biochemistry and, 15  
 for cystic fibrosis, A137  
  
**herpes virus vectors for, A137, 847**  
**lentivirus vectors for, A136, 841**  
**for pituitary adenomas, A139**  
**poly(D-lysine)-cholera toxin b chain conjugate in, 851**  
**Gene transfer**  
 for autoimmune diseases, A137, 869  
 to central nervous system, non-viral vectors for, A138  
 for hypothalamic salt loss, A139  
 for neurodegenerative diseases, A138  
**Genetic approaches, to vaccination for lymphoma, A139**  
**Genetic engineering, of plant isoprenoid pathway, A17**  
**Genomic imprinting, fetal growth and, A5**  
**Glucocorticoid(s)**  
 fetal programming and, A5, 74  
 preadrenarche, blood pressure control and, A7  
**Glucocorticoid receptors, genetic dissection of, A6**  
**Glucocorticoid signalling, Cre/loxP system in, 78**  
**Gluconobacter, quinohaemoprotein alcohol dehydrogenase from, to create reagentless alcohol biosensor, A52**  
**Glucose metabolism, in heart, computer simulation of, A48**  
**Glucose transporter GLUT4 compartmentalisation of, AP1 and AP3 in, A100**  
 insulin-stimulated trafficking of to plasma membrane, signalling mechanisms in, 677  
 protein kinase B translocation of, SNAP-23 and cellubrevin in, A105  
**Glucose-6-phosphatase, insulin-induced transcription of, suppression of cAMP/dexamethasone by, A106**  
**Glucosinolate, in *Brassica*, A17**  
**Glutamate, catecholamine sulphotransferase substrate specificity and, A36**  
**Glutamate receptor**  
 ionotropic, in hippocampal neuron, A117  
 metabotropic  
   fusion of green fluorescent protein with, A119  
   hippocampal CA1 synapses potentiated by, 170  
   pertussis toxin and, in tumour cells, A116  
 properties of, 164  
 signalling by, A25  
   hypoxia modulation of, A116  
   presynaptic metabotropic signalling by, calmodulin dependence of, A35  
**Glutamate receptor type 1 $\alpha$ , cell surface targeting of, Homer-1 $\alpha$  in, A113**  
**Glutamate release, K $^{+}$ -evoked, from brain, naloxone benzolhydrazone inhibition of, A33**  
**Glutathione conjugates,  $\beta$ -substituted, as inhibitors of *Oncocerca volvulus* glutathione S-transferase, A39**  
**Glutathione reductase, role of in chromium VI toxicity in osteoblasts, A128**  
**Glycans**  
 in malaria, 487  
 in meningococcal pathogenesis, A85, 498  
 N-linked, in intracellular targeting of apolipoprotein(a), 453  
**Glycerol-3-phosphate acyltransferase, from oil palm tissue, A123**  
**Glycine receptor, gephyrin interaction with, A70**  
**Glycolysis**  
 control and structural design of, A20  
 structural design of, 294  
  
**Glycoprotein, of *Trypanosoma cruzi*, phosphorylation of, A111**  
**Glycoprotein GP Ib-V-IX, tyrosine phosphorylating signalling event activation by, in platelets, A120**  
**Glycosphingolipid, metabolism of, biochemistry of, A79, 409**  
**Glycosphingolipids**  
 in brain, A113  
 metabolism of, regulation of during neuronal growth and development, 432  
**Glycosylphosphatidylinositol-anchored protein, insulin-stimulated release of, A54**  
**Glycosylphosphatidylinositol, from *Trypanosoma cruzi* mucins, macrophage activation by, A86**  
**GnRH receptors: see Gonadotropin-releasing hormone receptors.**  
**Golgi complex**  
 in apoptosis, A146  
 membrane dynamics of, lipid kinases and, A77, 670  
 phosphoinositide 4-kinase and small GTPases in, A75  
 spectrin skeleton assembly of, ARF regulation of, 638  
**Gonadotropin-releasing hormone receptors: see also G protein-coupled receptors.**  
 absence of rapid desensitisation and agonist-dependent phosphorylation of, A34  
 b-arrestin-dependent internalisation of, A34  
**GPCR: see G protein-coupled receptor(s).**  
**GPI: see Glycosylphosphatidylinositol-anchored protein.**  
**Granulocytes, phosphatidylinositol transfer proteins in, A103**  
**Green expression system, of membrane protein in transgenic tobacco, 923**  
**Green fluorescent protein fusion to metabotropic glutamate receptor, A119**  
**protein and vesicle trafficking analysis by, A77**  
 in study of drug effects on receptor internalisation, trafficking, and expression, A114  
 in visualising activation and desensitisation of thyrotropin-releasing hormone receptor, A118  
**Growth**  
 fetal, retarded: *see* Intrauterine growth retardation.  
 p300 and, A64  
**Growth arrest specific gene 6, in fetal kidney, maternal protein deficiency and, A49**  
**Growth factor receptors**  
 and  $\text{Ca}^{2+}$  and phosphoinositide signalling, in neuroblastoma cells, A34  
 gangliosides and, A79  
 regulation of, gangliosides and, 415  
**Growth hormone receptor, species specificity of, switching of, A43**  
**GTPases, small**  
 cell cycle regulation and, 363  
 cell proliferation and, A61  
 phosphoinositide 4-kinase and, in Golgi complex, A75  
**Gut: see Intestinal infection; Intestines.**  
  
**Haem enzyme, artificial, carboxymethyl cytochrome *c* as, A127**  
***Haemophilus influenzae***  
 5-enolpyruvylshikimate-3-phosphate synthase from, A47  
 lipopolysaccharide from, A85, 493  
**Haemopoiesis, hyaluronated-enhanced, A13**

- Heart**  
 cytochrome *bc* complex Q sites in, A82  
 cytochrome *c* oxidase in, crystal structure and reaction mechanism of, A61  
 cytochrome *c* oxidase of, X-ray structure and reaction mechanism of, 351  
 cytochrome oxidase in, ferrous cyanide compound of, A128  
 glucose metabolism in, computer simulation of, A48  
 phosphatidate phosphohydrolase, substrate specificity of, A123  
**Heart allograft survival**, role of gene therapy with adenoviral vectors in, A137, 864  
*Helicobacter pylori*, lipopolysaccharide from in adhesion to gastric epithelial cells, A110  
 host interaction with, A84  
**Heparan sulphate**, RNA binding motifs and, in malaria circumsporozoite protein, 482  
**Hepatic lipase**, preparation of antibody to, A51  
**Herbicide**, inhibition of very long chain fatty acid synthesis by, A123  
**Herpes simplex virus**  
 apoptosis and, Jun protein suppression of, A145  
 VP16 and, A66  
**Herpes virus vectors**, for gene therapy, A137, 847  
**Herpesvirus**  
 apoptosis-controlling genes from, A148  
 Epstein-Barr virus BHRF1 homologues from, A147  
**Hexokinases**, evolution of, A56  
**Hippocampal neurons**  
 AMPA receptor expression in, NSF-dependent regulation of, A117  
 glutamate receptor localisation in, A117  
**Hippocampus**, CA1 synapses at, metabotropic glutamate receptor potentiation of, 170  
**Histamine H<sub>2</sub> receptors**, distribution of binding in basal ganglia, in Huntington's disease, A33  
**Histidines**, in zinc  $\beta$ -lactamases, A37  
**HMG box**, interactions with minor groove of DNA, A126  
**Holographic biosensors**, A28  
**Homer protein(s)**  
 in brain, molecular characterisation of, A113  
 signalling by, immediate-early gene modulation of, A71  
**Homer protein-1 $\alpha$** , in cell surface targeting of glutamate receptor type 1 $\alpha$ , A113  
**Homer-related protein**, in brain, A113  
**Hormone levels**, perinatal, male reproductive development and, A5  
**Host-bacterial protein-carbohydrate interactions**, pathogenicity and, A83  
**HSPDE4A4B**, Lyn tyrosyl kinase binding to, A129  
**HSPDE4D3**, effects of MAP kinase and protein kinase A phosphorylation on, A128  
**Human papillomavirus type 16**, apoptosis induction by, A97  
**Huntington's disease**, histamine H<sub>2</sub> receptor binding distribution in basal ganglia in, A33  
**Hyaladherin**, inflammation-associated, A13  
**Hyaluronan**  
 in aqueous solution, A11  
 biomedical applications of, A11  
 CD spectroscopy of, A40  
 CD44-bound on keratinocytes, displacement of, A40  
 cell-matrix interactions mediated by, A12, 142  
 conformation of, in aqueous solution, 121  
 in embryogenesis, A11  
 high molecular weight, trans-synovial flow plateau and, A41  
 in joint cavitation, A12, 128  
 metabolism of, in keratinocytes, EGF and, A40  
 protein binding by, structural regulations of, A11  
 synthesis of, by bacterial fermentation, A42  
**Hyaluronan networks**, investigation of, A11, 124  
**Hyaluronan receptors**, in cytoskeleton regulation and skin wounds, A12  
**Hyaluronan synthase**  
 functions of, 109  
 mammalian, A10  
 from *Streptococcus pyogenes* group A, A10, 105  
**Hyaluronan-binding proteins**, structure and regulation of, 115  
**Hyaluronan-CD44 interactions**, in mononuclear leukocyte adherence, in colon-derived smooth muscle cells, A10  
**Hyaluronan-mediated motility**, receptor for, 135  
**Hyaluronate**  
 haemopoiesis enhanced by, A13  
 NF $\kappa$ B activation by, CD44 in, A43  
**Hydrogen bonding**  
 of caricaein, time-dependent inhibitors and, A37  
 of *Streptococcus pyogenes* penicillin-binding protein PBP2x  $\beta$ -lactam acylenzymes, A36  
**p-Hydroxycinnamoyl-CoA**  
 hydratase/lyase, in hairy root cultures of *Datura stramonium*, A51  
 **$\omega$ -Hydroxylation**, electron transfer in, rubredoxin reductase and rebredoxin in, A46  
**Hydroxymethylbilane synthase**, structure and function of, A39  
**Hydroxyphenyl retinamide**, apoptosis induced by, in vulvar squamous cell carcinoma, A146  
**5-Hydroxytryptamine**: *see Serotonin entries.*  
**Hypercholesterolaemia**  
 effect on chylomicron remnant uptake by aorta, A51  
 endothelial cell function and, A51  
**Hypertension**  
 fetal  
   intruterine growth retardation and, A6  
   renin-angiotensin system in, A6, 88  
   vasculature in, nitric oxide manipulation in, A149  
**Hypothalamus**, salt loss in, gene transfer for, A139  
**Hypoxia**, metabotropic glutamate receptor signalling and, in brain cortex, A116  
**I domains**, of integrin functions of, A132, 826  
 structural studies of, A131  
**IAsys**, cholera toxin and G<sub>M1</sub> study with, A28, 340  
**Id proteins**, transcriptional regulator interaction with, in cell cycle control, A98  
**IDDM**: *see Diabetes mellitus, insulin-dependent.*  
**IGF-II**: *see Insulin-like growth factor II.*  
**I $\kappa$ B**, NF- $\kappa$ B association with, A94  
**IL**: *see Interleukin entries.*  
**Immediate-early gene**, in modification of synaptic function, Homer signalling and metabotropic signalling, A71  
**Immunity proteins**, nuclear toxins and DNA complexes with, A87  
**Immunoglobulin G anti-xanthine oxidoreductase antibodies**, effect on NADH and oxidase activity, A151  
**Immunostimulatory peptides**, from fish waste hydrolysates, A53  
**Imprinted biosensors**, A28, 344  
**IMR-32 cells**, morphological differentiation of, fatty acids and, A100  
**Inborn errors of metabolism**, in biochemistry curriculum, A22  
**Infertility**, male, semen and antisperm antibodies in, A152  
**Inflammation**  
 hyaladherin associated with, A13  
 neutrophil apoptosis and, A134, 802  
**Inositol 3-phosphate**, calcium signalling mediated by, phosphatidylinositol transfer protein effect on, A102  
**Inositol 4-phosphate**, GAP1 binding of, A104  
**Insect cells**  
 membrane protein production in, baculovirus vectors in, A142, 928  
 nicotinic acetylcholine receptors in, A143, 944  
 serotonin transporter in improving expression of, A142, 932  
 molecular chaperones and, A142, 932  
**Insecticidal activity**, *N*-heterocyclic complex I inhibitors with, A83  
**Insulin**  
 glucose-6-phosphatase transcription induced by, suppression of cAMP/dexamethasone by, A106  
 GLUT4 trafficking to plasma membrane stimulated by, signalling mechanisms in, 677  
 GPI release stimulated by, A54  
 membrane trafficking regulated by, ADP-ribosylation and phosphoinositides in, A77  
**Insulin receptor**, protein sequence and structure of, 715  
**Insulin sensitivity**, fetal, maternal nutrient restriction and, A7, 94  
**Insulin superfamily peptides**, adenylyl cyclase and, A119  
**Insulin-dependent diabetes**, genomics and aetiology of, A1  
**Insulin-like growth factor II**, upregulation of in skeletal muscle, by clenbuterol and denervation, A121  
**Integrin**, collagen sequence GFOGER as binding site for, A144  
**Integrin A domain**, E-cadherin binding of, A145  
**Integrin I domain**  
 functions of, A132, 826  
 structural studies of, A131  
**Interferon- $\gamma$** , macrophage lipoprotein lipase regulation by, A95  
**Interleukin-1**, effect on articular cartilage, A120  
**Interleukin-1 $\beta$** , NK- $\kappa$ B activation by, A94  
**Interleukin-2**, regulation of phosphatidylinositol 2-phosphate in T lymphocytes, A105  
**Interleukin-6 receptor**  
 shedding of ADAM family in, 224  
 mechanisms and physiological consequences of, A22  
 soluble, generation and function of, 211  
**Interphotoreceptor retinoid-binding protein**, photosensitised light-

- induced damage and binding properties of, A130  
 Intervertebral disc cells, colocalisation of proteoglycan epitope and type X collagen by, A42  
 Intestinal infection, *Salmonella enteritidis* fimbrial lectins and, A110  
 Intestines, microflora in, oestrogen and phyto-oestrogen metabolism in, A13, 304  
 Intrauterine growth retardation fetal hypertension and, renin-angiotensin system in, A6 maternal, fetal, and postnatal somatotrophic axes in, A4, 69  
 Ion channels, at synapse, G protein-coupled receptors and, A26  
 Iron transporter, in *Escherichia coli* outer membrane, A140, 903  
 Ischaemic disease, adenoviral vector for treatment of, A148  
 Isocitrate dehydrogenase intermediate trapping and crystallographic studies of, A2 visualising intermediates of, 42  
 Isoprenoid pathway, of plants, genetic engineering of, A17  
 JNK pathway, muscarinic receptor activation of, calcium in, A59  
 Joint cavitation, hyaluronan in, A12, 128  
 Jun protein, suppression of apoptosis in herpes simplex virus type 1 infection, A145  
 Jurkat T cells, adhesion to endothelial cells, in laminar flow, A107  
*katG* gene, truncated, from *Mycobacterium tuberculosis*, A47  
 Keratinocytes hyaluronan bound to CD44 on, displacement of, A40 hyaluronan metabolism in, EGF and, A40  
 Kinase docking domains, in MAP kinase activation of transcription factors, A97  
 Kinase/phosphate signalling complexes, neuronal, molecular architecture of, A72  
*Klebsiella pneumoniae*, transcriptional activator NIFA from, A125  
 $\beta$ -Lactam acylenzymes, of *Streptococcus pyogenes* penicillin-binding protein PBP2x, hydrogen bonding and protein perturbation in, A36  
 $\beta$ -Lactamase infrared spectroscopy of, A38 mechanistic diversity of, A4, 58 in zinc, histidines in, A37  
 Lactose, catabolic system of, in *Escherichia coli*, A19, 264  
 Laminar flow, Jurkat T cell adhesion to endothelial cells in, A107  
 Laser capture microdissection, proteomic analysis and, A67  
 Latent membrane protein 1, from Epstein-Barr virus, apoptosis suppression by, A148  
 Learning, impaired, post-synaptic density-95 and, A70  
*Leishmania* promastigotes and amastigotes of, proteophosphoglycans from, 518 proteophosphoglycans from, A86  
 Lentivirus vectors, for gene therapy, A136, 841  
 Leptin, in adipose tissue, developmental changes in appearance of, A50 L-fibroblasts, purinoceptor-mediated  $\text{Ca}^{2+}$  oscillations in, A32  
 Ligand, protein interaction with, A90  $\gamma$ -Linolenic acid, sources of, A16  
 Lipid(s)
- cytochrome P450 gene regulation by, 378  
 gene expression and, A62  
 metabolism of, A20 in plants, 285  
 pathways/network of, A18 protein binding of, A107  
 Lipid kinases, *trans*-Golgi network membrane dynamics and, A77, 670  
 Lipid modulation, of P450 in liver, 371 metyrapone activation of pregnane X receptor in, 387 sphingomyelin hydrolysis and, 383  
 Lipid sorting effect on membrane flow and cell polarity, 422 subapical compartment in, A79  
 Lipid-protein interactions, in neurosecretory vesicle biogenesis, A74  
 Lipopolysaccharide in *Haemophilus influenzae* infection, A85, 493 from *Helicobacter pylori*, host interaction with, A84 in *Helicobacter pylori* adhesion to gastric epithelial cells, A110  
 Lipoprotein(a), A91 genetic structure and expression of, myocardial infarction and, 463 apolipoprotein(a) genetic polymorphisms and, myocardial infarctions and, 463 in atherosclerosis, A92 domain structure of, A122 genetic structure and expression of, 447 in health and disease, 439 in hepatocyte cultures, A92 level of apo(a) gene polymorphisms and, A93 control of, A92 in patients with and without coronary artery occlusion, A122 pharmacological modification of, A93, 466 plasma concentration of, bio-bank study and, 459  
 Lipoprotein lipase, in macrophage cytokine regulation of, A95 IFN- $\gamma$  regulation of, A95  
 Lipoxygenases, from plants, fatty acid oxidation and, A17  
 Liver lipid modulation of P450 in, 371 microsomal cytochrome P450 in, A61 microsomal triglyceride transfer protein in, dietary cholesterol regulation of, A50 mixed function oxidase activity in phosphatidylcholine biosynthetic pathway effect on, A109 phospholipase and, A61  
 Liver fluke, cathepsin L-like proteinases of, 740  
 Living cell, live control of, 261  
*Lupinus angustifolius*, seed proteins of, nutritional toxicity of, A59  
 Lymphoma, vaccination for, genetic approaches to, A139  
 Lyn tyrosyl kinase, binding of to HSPDE4A4B, A129  
 Lysophosphatidic acid, calcium mobilisation induced by, sphingosine kinase dependence of, A112  
 Lysophosphatidic acid acyl transferase homologues enzyme activity in, A125 from *Saccharomyces cerevisiae*, A124  
 Lysosomal enzyme delivery, Vps34p and, A107  
 Lysosomolipids, in brain, A113
- Macrophage activation of, by *Trypanosoma cruzi* mucin glycosylphosphatidylinositol, A86  
 lipoprotein lipase in cytokine regulation of, A95 IFN- $\gamma$  regulation of, A95  
 Major histocompatibility complex, apoptosis and, A135, 781  
 Malaria circumsporozoite protein in, heparan sulphate RNA binding motifs and, 482 glycans in, 487 *Plasmodium falciparum*, cellular interactions and, A85 in pregnancy, A84, 478  
 Malaria protein A-domain of, A132 cell surface and intercellular binding sites for, A84  
 Malignant epithelial cells, differentiation of by contact with peripheral nerve tissue, A35  
 Mannosylation, of *Candida* cell wall, antifungal drug development and, A86  
 MAP: see Mitogen-activated protein.  
 Mass spectrometry, of protein interaction networks, 549  
 Matrilins, von Willebrand factor type A domains in, A132, 824  
 Matrix metalloproteases in carotid artery plaques, A43 in normal and disease processes, 734  
 Mdm2, p53 stability and, A64  
 M.EcoR124I, HsdS subunit of, A126  
 MEKK2 and MEKK3, MKK6 and MKK7 activation by, A58  
 Membrane flow sphingolipid sorting and cell polarity and, 422 subapical compartment in, A79  
 Membrane protein biosynthesis of, at endoplasmic reticulum, A139, 883 6 $\times$ His-tagged, in transgenic tobacco, A142 insect cell production of, baculovirus vectors for, A142, 928 NMR studies of, expression expertise in, A131 quinone-binding sites in, general features of, 561 in transgenic tobacco, green expression system and, 923  
 Membrane protein quinone-binding sites in cytochrome bc complexes functional implications of, 565 in *Rhodobacter capsulatus*, 572 in cytochrome bo complexes, in *Escherichia coli*, 581 NADH:quinone oxidoreductase inhibitors and, 586, 596 N-heterocyclic complex I inhibitors and, A83, 602, 606 in *Rhodopseudomonas viridis*, 591  
 Membrane protein secretases, ADAMs as, A24, 255  
 Membrane trafficking ARF GTPases in, 642 endocytic, phosphatidylinositol 3-phosphate regulation of, 666 insulin-regulated, ADP-ribosylation and phosphoinositides in, A77 linking of stress response to, phosphatidylinositol 3,5-bisphosphate in, 674 stress response linkage to, in yeast, phosphatidylinositol bisphosphate in, A77  
 Membrane transport protein amplified expression and reconstitution of, A141, 912 in *Escherichia coli*, A140, 893

- isotopically labeled, A150  
 Meningococcal pathogenesis, glycans in, A85, 498  
 Metabolic control analysis of, A18  
     teaching of, A21  
     traditional concepts of, A20  
 Metabolic pathways optimization of, industrial manufacturing processes and, A19, 276  
     quantitative analysis of, A21  
 Metabolism inborn errors of, in biochemistry curriculum, A22  
     modelling of  
         NMR in, 289  
         in plants, 285  
 Metabotropic signalling, immediate-early gene modulation of, A71  
 Metal ion-dependent adhesion site (MIDAS), in collagen VI assembly, A144  
 Metallo- $\beta$ -lactamases, substrate turnover and inhibition of, A39  
 Methylamine dehydrogenase, in electron transfer complexes, A30  
*Methylphilus methylotrophus*, solute transport in, A52  
 Metyrapone cytochrome P450 3A induction by, pregnane X receptor in, A62  
     pregnane X receptor activation by, 387  
 MHC: *see* Major histocompatibility complex.  
 Microsomal membrane hydrogenation, effect on cytochrome P450, A109  
 Microsomal triglyceride transfer protein, hepatic, dietary cholesterol regulation of, A50  
 MIDAS: *see* Metal ion-dependent adhesion site.  
 Milk  
     human, phyto-oestrogen in, A14, 308  
     xanthine oxidase activity in,  
         allopurinol, alloxanthine, and uric acid kinetic studies of, A152  
 Milk protein, secretion of, phospholipase D and, A100  
 Mitochondria  
     cytochrome bc complexes in, Q site structure in, A80  
     F<sub>1</sub>-ATPase structure in, 33  
     F<sub>1</sub>-ATPase in, structure of, A2  
     uncoupling proteins in, expression and purification of, A140, 888  
 Mitochondrial function, poliovirus infection effect on, A55  
 Mitogen-activated protein kinase binding of to phosphatases, A72  
 cell cycle re-entry and, A96  
 effect on HSPD4D3, A128  
 FGF activation of, A121  
     in osteoblast response to  
         prostaglandins, A105  
 Mitosis, in budding yeast, A66  
 Molecular chaperones, improvement of serotonin transporter expression in insect cells by, A142, 932  
 Mononuclear leukocyte, adherence of in colon-derived smooth muscle cells, hyaluronan-CD44 interactions in, A10  
 Morphine reductase, structure and mechanism of, A46  
 Mucin, *Pseudomonas* interaction with, 474  
 Mucin genes, in Barrett's oesophagus, A41, A84  
 Mucosa, oral, MUC1 distribution in, A110  
 Muscarine, intracellular calcium increase evoked by, noradrenaline release and, A32  
 Muscarinic receptor
- casein kinase I $\alpha$  binding site in, A116  
 ERK and JNK pathway activation by, calcium and, A59  
 gene expression regulated by, under cAMP response element control, A119  
 phospholipase C coupled to, phosphorylation and regulation of  $\beta_2$ -adrenergic receptor by, A34  
 Myc proto-oncogene, cell proliferation and, A63  
*Mycobacterium tuberculosis*, truncated katG gene from, A47  
 Myeloid cells, growth-arrested and proliferating, v-Abl-mediated p21<sup>WAF-1</sup> regulation in, A147  
 Myocardial infarction  
     apolipoprotein(a) genetic polymorphisms and, 463  
     clot dissolution therapy after, pancreatic acinar cell injury and, A109  
     lipoprotein(a) concentration and, effect of apo(a) gene polymorphisms on, A93  
 Myosin ATPase, single molecule kinetics of, A2, 33
- n-3 fatty acids, proteinase activity mediated by, in chondrocytes, A96  
 NADH, effect of IgG anti-xanthine oxidoreductase antibodies on, A151  
 NADH-dehydrogenase, mitochondrial, common inhibitor binding domain in, A82  
 NADH:quinone oxidoreductase inhibitors, binding sites of, A83, 586, 596, 602, 606  
 NADPH binding, ferredoxin NADP<sup>+</sup> residues in, A56  
 Naloxone benzohydrazone, inhibition of K<sup>+</sup>-evoked glutamate release from brain by, A53  
 Natural selection, gene circuitry design by, 264  
 Neonate, thyroid hormone effects on, 83  
 Nerve growth factor, expression induced by, preprotachykinin-A promoter direction of, A94  
 Neuroblastoma  
     Ca<sup>2+</sup> and phosphoinositide signalling in, growth factor receptors and G protein-coupled receptors in, A34  
     choline and noradrenaline uptake by,  $\beta$ -amyloid peptide effect on, A53  
 Neuroblastoma cells  
     endocytic rate in, protein kinase C and, A106  
     nuclear matrix of, phosphatidylcholine synthesis in, A124  
 Neurodegenerative disease, gene transfer for, A138  
 Neuroendocrine development environmental events and, A6  
     in nutrient restriction, A7  
 Neuron(s)  
     developing  
         apoptosis of, c-Jun and Bax in, A135  
         sphingolipid metabolism during, 432  
         growth and development of, sphingolipids in, A80  
         kinase/phosphate signalling complexes in, molecular architecture of, A72  
     Neuron restrictive silencer factor, substance P-encoding preprotachykinin-A promoter regulation by, A95  
     Neuronal calcium channels, in G protein modulation, A25  
     Neuronal cells, targeted transfection of, using poly(D-lysine)-cholera toxin b chain conjugate, 851  
     Neuronal kinase/phosphatase signalling, molecular architecture of, 539
- Neuronal processes, G protein-coupled receptors in, A26  
 Neuroprotection, astrocytes in antioxidant release and preservation, A152  
 Neurosecretory vesicles, biogenesis of, lipid-protein interactions in, A74  
 Neurotensin, GPCR for, in *Escherichia coli*, A140  
 Neurotensin receptor, in *Escherichia coli*, 899  
 Neurotransmitter release  
     phosphoinositides and, A75  
     presynaptic calcium channel interaction with SNARE protein in, A71  
 Neutrophils, apoptosis of  
     inflammation and, A134, 802  
     regulation of, 802  
 NF- $\kappa$ B: *see* Nuclear factor- $\kappa$ B.  
 Nicotinic acetylcholine receptors, in mammalian and insect cell lines, A143, 944  
 NIFA transcriptional activator, from *Klebsiella pneumoniae*, A125  
 Nitric oxide  
     apoptosis induced by, in PC12 cells, A146  
     caspase activity and, in macrophages, A146  
     flavocytochrome P450 BM3 interaction with, A44  
     manipulation of, in hypertensive vasculature, A149  
     metabolism of, in schizophrenia, A50  
 Nitric oxide synthase, gastric mucosa apoptosis and, A145  
 Nitrite reductase, from *Pseudomonas aeruginosa*, photo-induced electron transfer in, A57  
 Nitrobenzylthiophosphonate-insensitive nucleoside transporter, purine nucleoside transport by, A149  
 N-linked glycans, in intracellular targeting of apolipoprotein(a), 453  
 NMDA receptor: *see* N-Methyl-D-aspartate receptor.  
 N-Methyl-D-aspartate receptor assembly of, A119  
     cotransfection of PSD-95 with, immunoreactivity and, A115  
     regulation by, CBP activation and, A93  
 Noradrenaline  
     neuroblastoma uptake of,  $\beta$ -amyloid peptide effect on, A53  
     release of  
         muscarinic-evoked intracellular calcium increase and, A32  
         steroidal neuromuscular blocking drugs and, A33  
         spinal cord cell uptake and release of, A32  
 NSF, regulation of AMPA receptor expression in hippocampal neuron dependent on, A117  
 Nuclear factor- $\kappa$ B  
     anti-apoptosis by, A94, A134, 812  
     hyaluronic acid fragment activation of, CD44 in, A43  
     I $\kappa$ B association with, A94  
     IL-1 $\beta$  activation of, A94  
     transcription of, EGR-1 and, A99  
 Nuclear magnetic resonance, as probe of protein structure and function, 701  
 Nuclear matrix, of neuroblastoma cells, phosphatidylcholine synthesis in, A124  
 Nuclear toxins, immunity proteins and DNA complexes with, A87  
 Nucleic acid, protein complexes with, A88  
 Nucleoside analogues, inhibition of phlebo-, retro-, flavo, and poxviruses by, A152

- Nutrient deficiency in mother, fetal effects of adipose tissue in, A7, 97 insulin sensitivity in, A7, 94 neuroendocrine adaptation in, A7 renal growth arrest specific gene 6 in, A49
- Oesophagus, Barrett's, mucin genes in, A41
- Oestradiol 17 $\beta$ -hydroxysteroid dehydrogenase, in breast cancer, A15, 323
- Oestrogen in brain formation and behavioural development, A5 chylomicron cholesterol metabolism and, A50 4-hydroxylation of, breast cancer risk and, A14, 318 metabolism of breast cancer risk and, A13, 299 gut microflora in, A13, 304
- Oestrogen receptor, coactivator interaction with, A95
- Oil palm tissue, glycerol-3-phosphate acyltransferase from, A123
- Oncocerca volvulus* glutathione S-transferase,  $\beta$ -substituted glutathione conjugates as inhibitors of, A39
- Opiate-transforming redox enzyme, morphine reductase as, A46
- $\delta$ -Opioid G<sub>i</sub>-linked receptor, in cell cycle regulation in fibroblasts, A114
- Opioid receptor- $\mu$ , in baculovirus-infected insect cells, A151
- ORF50, in alcelaphine herpesvirus-1 gene expression, A98
- Osteoblasts chromium VI toxicity in, glutathione reductase and, A128 response to prostaglandins, MAP kinases in, A105
- Ovarian cancer, cytochrome P450 1B1 in, A124
- Oxazolidinones, cytochrome bc inhibition by, A81, 577
- Oxysterol binding protein homologues, in budding yeast, A100
- p53, stability of, Mdm2 and, A64
- p85 $\alpha$  in B cell development and proliferation in phosphoinositide 3-kinase knockout mice, 624 in cell development and proliferation, in phosphoinositide 3-kinase knockout mice, A73
- p300, in mouse development and growth control, A64
- p300/CBP coactivators, p21<sup>WAF1/CIP1</sup> regulation of, A99
- PAC<sub>1</sub> receptor, phospholipase D activation by, A118
- Pancreatic acinar cell injury, after clot dissolution therapy, A109
- Pancreatitis, acute gallstones and, A109 trypsinogen activation and fibrinolysis in, A110
- PCAF histone acetylase complex, A65
- Penicillin, biosynthesis of, A4
- Peptide mixtures, automated PSD analysis of, A68
- Peptide synthesis, with modified trypsin, 727
- Peripheral nerve tissue, malignant epithelial cells differentiated by contact with, A35
- Pertussis toxin, effect on metabotropic glutamate receptor, in tumour cells, A116
- PFA analogues, inhibition of phlebo-, retro-, flavo, and poxviruses by, A152
- Pharmaceutical research and development, proteomics in, 555
- Phlebovirus, inhibition of, by nucleoside and PFA analogues, A152
- Phorbol ester, juxtamembrane cleavage of angiotensin-converting enzyme induced by, disulphide-bridged stalk and, A56
- Phosphatases, MAP kinase binding to, A72
- Phosphate/kinase signalling complexes, neuronal, molecular architecture of, A72
- Phosphatidate phosphohydrolase, cardiac, substrate specificity of, A123
- Phosphatidylcholine synthesis from choline, A123 synthesis of, in nuclear matrix of neuroblastoma cells, A124
- Phosphatidylcholine biosynthetic pathway, hepatic mixed function oxidase activity and, A109
- Phosphatidylinositol 4,5-bisphosphatase synthesis, in ARF regulation of Golgi complex spectrin skeleton assembly, 638
- Phosphatidylinositol 3,5-bisphosphate, linking of stress responses to membrane trafficking events by, 674
- Phosphatidylinositol 2-phosphate in linking of stress responses to membrane trafficking in yeast, A77 novel targets of, A78 in T lymphocytes, IL-2 regulation of, A105
- Phosphatidylinositol 3-phosphate endocytic membrane traffic regulation by, A76, 666 novel targets of, A78
- Phosphatidylinositol 5-phosphate, mass assay for, A101
- Phosphatidylinositol 5-phosphate 4-kinases casein kinase II phosphorylation of, A101 differential localisation of, A101 functions of, 657
- Phosphatidylinositol 2-phosphate 4-kinases, localisation and regulation of, A76
- Phosphatidylinositol 5-phosphate kinases, phosphatidylinositol 2-phosphate specificity of, A102
- Phosphatidylinositol 3-phosphate-binding protein EEA1 as, A76 GAP1 as, A104
- Phosphatidylinositol 3-phosphate-binding proteins, early-endosome dynamics regulation by, 662
- Phosphatidylinositol transfer proteins from *Dictyostelium*, A102 effect on inositol 3-phosphate-mediated calcium signalling, A102 in granulocytes, A103 phosphorylation and regulation of, A102
- Phosphatidylinositol 3,4,5-trisphosphate, ARF-6 signalling regulation by, 683
- Phosphatidylinositol-specific antibodies, generation and characteristics of, 648
- Phosphatidylserine, in T cell adhesion to endothelial cells, A108
- Phosphoinositide binding of, at pleckstrin homology domains, A73 in insulin-regulated membrane trafficking, A77 neurotransmitter release and, A75
- pleckstrin homology domain binding of, 617 signalling by in neuroblastoma cells, growth factor receptors and G protein-coupled receptors in, A34
- Phosphoinositide 3-kinase cell cycle re-entry and, A96 in cell survival and apoptosis, A74 signalling by, A74
- Phosphoinositide 4-kinase, small GTPases in, A75
- Phosphoinositide 3-kinase effector molecules, A78
- Phosphoinositide 3-kinase knockout mice, B cell development and proliferation in, p85 $\alpha$  in, A73, 624
- Phosphoinositide 3-kinase signalling, 629
- Phosphoinositide signalling target, centaurin proteins as, A104
- 3-Phosphoinositide-dependent protein kinase-1, lipid binding by, A107
- Phosphoinositide-3-phosphatase, phosphorylated, PTEN as, A129
- Phospholipase(s) Fc $\gamma$ RI activation of, monocyte differentiation and, A101 hepatic mixed function oxidase activity and, A61
- Phospholipase A<sub>2</sub>, TNF- $\alpha$  activation of, A112
- Phospholipase C $\delta$ , and related molecules, A76, 652
- Phospholipase C, coupled to muscarinic receptor, phosphorylation and regulation of  $\beta_2$ -adrenergic receptor by, A34
- Phospholipase C- $\delta$ 1, dynamic translocation of, in living cells, A107
- Phospholipase C-coupled receptor, desensitisation and resensitisation of, A55
- Phospholipase D activation of, in serotonin receptor, A117 ARF protein regulation by, A75 cellular expression and function of, 634 in exocytic secretion, A103 inducible overexpression of, in intracellular transport and organelle morphology, A75 milk protein secretion and, A100 VPAC and PAC<sub>1</sub> receptor activation of, A118
- Phospholipid membranes, prothrombin interaction with, A53
- Phosphosaccharide glycans, of *Trypanosoma cruzi*, structure of, A111
- Photosynthetic reaction centre, from *Rhodopseudomonas viridis*, electron and proton transfer coupling in, A82
- Phyto-oestrogen in human milk and other biomatrices, A14, 308 metabolism of breast cancer risk and, A13, 299 gut microflora in, A13, 304 sulphoconjugates of, sterol sulphatase inhibition by, A14
- Pituitary, cell type-specific expression in, gene therapy and, 858
- Pituitary adenoma, gene therapy for, A139
- Placenta alkaline phosphatase in, electrochemical detection of, A151 anandamide in, A48 sulphotransferase activity in, A49
- Plant(s) cellular mechanical properties in, micromanipulation measurement of, A15, 961 isoprenoid pathway of, genetic engineering of, A17

- lipid metabolism in, 285  
 lipoxygenases, fatty acid oxidation and, A17  
 secondary metabolites, metabolic pathway engineering of, A15  
 secondary metabolites of genetic engineering of, A15  
 turnover and sequestration of, A18  
 special effects from, A16  
 sucrose transporter in, produced in *Saccharomyces cerevisiae*, A141  
**Plasminogen**, therapeutic recombinant, carbohydrate profile of, A111  
**Plasmodium falciparum** malaria, cellular interactions and, A85  
**Platelets**, glycoprotein GP Ib-V-IX initiation of tyrosine phosphorylating signalling events in, A120  
**Pleckstrin homology domain** phosphoinositide binding at, A73 phosphoinositide binding by, 617 in signal transduction, A72  
**Pneumolysin**, structure and mechanism of, A55  
**Polarisation**, of concentration, during ultrafiltration, A41  
**Poliovirus infection**, mitochondrial function and, A55  
**Poly(d-lysine)-cholera toxin b chain conjugate**, for targeted transfection of neuronal cells, 851  
**Polyketide antibiotic biosynthesis**, enzymology of, A3  
**Polysaccharide**, *Escherichia coli* K5 capsular, biosynthesis of, A85, 507  
**Post-synaptic density** of complex peptide mixtures, analysis of, A68 impaired learning and, A70  
**Post-synaptic membrane** assembly of, glycine receptor–gephyrin interaction during, A70 in excitatory synapses, A69  
**Potassium**, glutamate release from brain evoked by, naloxone benzohydrazone inhibition of, A33  
**Potassium channels**, building of, A71  
**Poxvirus** inhibition of, by nucleoside and PFA analogues, A152 prevention of infected cell apoptosis by, A134  
**pRB**, regulation of, A63  
**Pregnancy**: *see also Fetus*. malaria during, A84, 478  
**Preprotachykinin-A promoter** neuronal specific and NGF-inducible expression directed by, A94 substance P-encoded, neuron restrictive silencer factor regulation of, A95  
**Presenilin-1 protein**, expression and metabolism of, A150  
**Prion protein**, detergent solubility and proteolytic processing of, A54  
**Problem-based learning**, A31  
**Prolactin receptor**, in brown adipose tissue, effect of birth and ambient temperature on, A49  
**Promastigotes**, from *Leishmania*, proteophosphoglycans from, 518  
**Prostaglandins**, osteoblast response to, MAP kinases in, A105  
**Protease-activated receptors**, A24  
**Proteasomes**, in intracellular targeting of apolipoprotein(a), 453  
**Protein(s)**: *see also Membrane protein*.  
**Protein(s)** cell surface, shedding of, TNF- $\alpha$ -converting enzyme in, A23, A24 hyaluronan binding of, structural regulations of, A11 ligand interaction with, A90 nucleic acid complexes with, A88 RNA interaction with, in nuclear pre-mRNA splicing, A89 structure and function of, NMR as probe of, 701 two-dimensionally separated, analysis of, A68  
**Protein antibiotics**, inhibitors of, A4, 63  
**Protein film voltammetry**, electron transfer in, A31, 206  
**Protein host**, bacterium and carbohydrate interaction with, pathogenicity and, 471  
**Protein interaction networks** characterization of, A68 mass spectrometry of, 549  
**Protein intermediates**, time-resolved crystallography of, A1  
**Protein kinase(s)**, structure and mechanism of, A1  
**Protein kinase A**, catalytic subunit of, re-engineering of, A117  
**Protein kinase A phosphorylation**, effect on HSPDE4D3, A128  
**Protein kinase B** GLUT4 translocation by, SNAP-23 and cellubrevin in, A105 lipid binding by, A107 phosphorylation of at serine 473, A73, A106 v-Ab1 tyrosine kinase regulation of, A147  
**Protein kinase C** adenylyl cyclase interaction with, A119 cardiac, expression of, dexamethasone administration and, A49 in decoding of calcium and diacylglycerol signals, A73 effect on *Schizosaccharomyces pombe* dynamin and endocytosis, A59 endocytic rate and, in neuroblastoma cells, A106 FcyRI activation of, monocyte differentiation and, A101 isotypes of, in eosinophils, A106  
**Protein phosphatase I**, in dendrite, A72, 543  
**Protein phosphorylation**, reversible, structural studies of, 751  
**Protein trafficking**, green fluorescent protein in analysis of, A77  
**Proteinase** aminopeptidases with, in generation of non-bitter casein hydrolysates, 730 cathepsin L-like, of liver fluke and blood fluke, 740  
**Proteinase activity**,  $n-3$  fatty acid mediation of, in chondrocytes, A96  
**Protein–carbohydrate interactions** and pathogenicity, in bacteria–host, A83  
**protein–DNA interactions**, A88  
**Proteoglycan epitope**, colocalisation of with type X collagen, A42  
**Proteolytic enzymes**, in health and disease, 727, 730, 734, 740, 746  
**Proteome analysis** laser capture microdissection and, A67 two-dimensional electrophoretic methods for, A67 without gels, A68  
**Proteomics** difference gel electrophoresis in, 547 in mass spectrometry of protein interaction networks, 549 nanotechnologic approaches to, A69 in pharmaceutical research and development, A69, 555 present status of, A67  
**Proteophosphoglycans**, from *Leishmania*, A86, 518  
**Prothrombin**, phospholipid membrane interaction with, A53  
**Proton handling**, in ischaemically exercising skeletal muscle, A48  
**Pseudomonas**, mucin interaction with, A84, 474  
**Pseudomonas aeruginosa**, nitrite reductase from, photo-induced electron transfer in, A57  
**PTEN**, as a phosphorylated phosphoinositide-3-phosphatase, A129  
**Purine nucleosides**, transport of, via nitrobenzylthioinositide-insensitive nucleoside transporter, A149  
**Purine transporters** in drug-sensitive and drug-resistant *Trypanosoma equiperdum*, A149 in skeletal muscle cells, A149  
**Purinoceptor P2Y**,  $\text{Ca}^{2+}$  oscillations mediated by, in L-fibroblasts, A32  
**Q sites** common features of, A80 in cytochrome bc complexes cardiac, A82 in mitochondria, A80 structure, function, and dysfunction of, A81 in ferredoxin-reducing reaction centres, A82  
**Quercetin**, effect on colon tumour cells, A127  
**Quinohaemoprotein alcohol dehydrogenase**, from *Gluconobacter*, to create reagentless alcohol biosensor, A52  
**Quinol binding sites**, in cytochrome bc complexes, A81  
**Quinolone drugs**, DNA gyrase as target of, A3, 48  
**Quinone binding sites** in membrane proteins in cytochrome bc complexes functional implications of, 565 in *Rhodobacter capsulatus*, 572 in cytochrome bo complexes, in *Escherichia coli*, 581 general features of, 561  
**NADH:quinone oxidoreductase inhibitors** and, A83, 586, 596, 602, 606  
*N*-heterocyclic complex I inhibitors and, A83, 586, 596, 602, 606 in *Rhodopseudomonas viridis*, 591  
**Quinone reductases** chemoprotection and chemoactivation enzymes in, A83 cytosolic, structure and mechanism of, 610  
**Quinoprotein dehydrogenases**, A30  
**RAMP amino terminus**, in glycosylation state and ligand binding of CRLR and adrenomedullin, A71, 535  
**Reaction trapping**, to visualise enzyme intermediates, 42  
**Receptor transfected cell clones**, quantitating mRNA in, TaqMan reverse transcriptase polymerase chain reaction for, A150  
**Red cell anion exchanger**, band 3, A141, 917  
**Renal tissue discs**, arginine vasopressin-induced S100 protein translocation in, A59  
**Renin–angiotensin system**, in fetal hypertension and intrauterine growth retardation, A6, 88  
**Reproductive system**, male, perinatal hormone levels and, A5  
**Resonance Raman spectroscopy**, of flavocytochrome P450 BM3, A45  
**REST/NRSF**, in endogenous gene expression, A125  
**Restriction endonuclease reactions**, requiring two recognition sites, 696  
**Restriction-modification system**, *AhdI* as new class of, A126  
**Retinoblastoma protein**, in RNA polymerase I transcription, A98

- Retroviral transduced haemopoietic stem cells, in gene therapy for cancer, A148
- Retroviral vectors, brain glioblastoma trials using, A138
- Retrovirus, inhibition of, by nucleoside and PFA analogues, A152
- Rheumatoid arthritis, chondroitin sulphate epitopes in, A41
- Rhodobacter capsulatus*, cytochrome bc complexes of, membrane protein quinone-binding sites in, 572
- Rhodopseudomonas viridis* membrane protein quinone-binding sites in, 591
- photosynthetic reaction centre from, electron and proton transfer coupling in, A82
- Rhodopsin and its mutants, in mammalian cell lines, A143, 950
- Rhodotorula gracilis* amino acid oxidase, site-directed mutagenesis in, A38
- Rhodotorula graminis*, mandelate dehydrogenase from, A58
- Rho-GDI-Rac interactions, NMR of, A37
- Ribonucleotide reductase, in electron transfer, A30
- Ribosomal RNA, bacterial, three-dimensional structure of, A89
- Rice, amylogenin gene of, A52
- RNA crystallography of without RNA crystals, A89
- protein interaction with, in nuclear pre-mRNA splicing, A89
- trp* RNA-binding protein interaction with, A89
- RNA polymerase I promoter selective transcriptional regulation of, mammalian SL1 in, A98
- transcription of, retinoblastoma protein and, A98
- RNA polymerase III, transcription and, A65, A66
- Rubredoxin and rubredoxin reductase, analysis of, A46
- Ruv AB holliday junction branch migration complex, structural analysis of, A87
- S100 proteins, vasopressin-induced translocation of, in renal tissue discs, A59
- Saccharomyces cerevisiae* lysophosphatidic acid acyl transferase homologues from, A124
- mitochondrial uncoupling proteins in, expression and purification of, 888
- plant sucrose transporter produced in, A141
- Salmonella enteritidis* fimbrial lectins, A111
- intestinal infection and, A110
- Salmonella typhimurium*, dehydroquinate synthase from, site-directed mutagenesis of active site residue in, A47
- Salt loss, in hypothalamus, gene transfer for, A139
- S-carboxymethyl-L-cysteine metabolism, S-oxidation of, diurnal variation in, A121
- Schistosoma*, cathepsin L-like proteinases of, 740
- Schizophrenia, nitric oxide metabolism in, A50
- Schizosaccharomyces pombe*, dynamin and endocytosis in, protein kinase C effect on, A59
- Semen, antibodies for, in male infertility, A152
- Serine proteases, receptors activated by, A24
- Serine 473, protein kinase B phosphorylation at, A106
- Serotonin receptors diversity of, A26
- expression technologies of, case study of, A143, 956
- G protein activation by, A114
- interaction of serotonin transporter with, A118
- phospholipase D activation in, A117
- Serotonin transporter, expression in insect cells, molecular chaperones and, A142, 932
- Serotonin transporter gene, transcriptional regulation of, A94
- Serpins, expanding superfamily of, 746
- Shc, SHIP association with, Fc<sub>Y</sub>RI and, A128
- Shewanella putrefaciens*, cytochrome c from, A58
- SHIP, Shc association with, Fc<sub>Y</sub>RI and, A128
- trans-Sialidase, from *Trypanosoma cruzi*, biological role of, A86
- Signal transduction ARF GTPases in, 642
- pleckstrin homology domains in, A72
- Silicon semiconductors, nanostructured surface chemistry of, biological fluids and, A52
- viability of mammalian cells on, A53
- Skeletal muscle IGF-II upregulation in, by clenbuterol and denervation, A121
- ischaemically exercising, ATP synthesis and proton handling in, A48
- purine transporters in, A149
- Skin wound, hyaluronan receptors and, A12, 142
- SL1, mammalian, in promoter selective transcriptional regulation of RNA polymerase I, A98
- Smooth muscle cells, colon-derived, mononuclear leukocyte adherence to, hyaluronan-CD44 interactions in, A10
- SNAP-23, in protein kinase B translocation of GLUT4, A105
- SNARE protein, presynaptic calcium channel interaction with, in neurotransmitter release, A71
- Solute transport in *Methylophilus methylotrophicus*, A52
- Somatotrophic axes, maternal, fetal, and postnatal, in intrauterine growth retardation, 69
- Sphingolipids apoptosis and, 399, 428
- calcium mobilisation and, A112
- growth factor receptor regulation and, 415
- intracellular, identification of, 393
- metabolism of biochemistry of, 409
- regulation of during neuronal growth and development, 432
- neuronal growth and development and, A80
- sorting of, effect on membrane flow and cell polarity, 422
- Sphingomyelin hydrolysis, in lipid modulation of P450, 383
- Sphingomyelin metabolism, cytochrome P450 expression and, A62
- Sphingomyelinases, in cell signalling, A78
- Sphingosine kinase, lysophosphatidic acid induction of calcium mobilisation dependence on, A112
- Sphingosine 1-phosphate, extracellular actions of, through endothelial differentiation gene products, 404
- Sphingosine 1-phosphate signalling, A79
- Spinal cord cells, noradrenaline uptake and release by, A32
- Squamous cell carcinoma, vulvar, hydroxyphenyl retinamide-induced apoptosis in, A146
- Stem cells, retroviral transduced haemopoietic, in gene therapy for cancer, A148
- Steroid sulphatase, regulation of, in breast cancer, A15, 323
- Steroidal neuromuscular blocking drugs, noradrenaline release and, A33
- Sterol sulphatase, phyto-oestrogen sulphoconjugates as inhibitors of, A14
- Streptococcus pyogenes* group A, hyaluronan synthase from, A10, 105
- Streptococcus pyogenes* penicillin-binding protein PBP2x,  $\beta$ -lactam acylenzymes of, hydrogen bonding and protein perturbation in, A36
- Stress response linking of to membrane trafficking events, phosphatidylinositol 3,5-bisphosphate in, 674
- membrane trafficking linkage to, in yeast, phosphatidylinositol bisphosphate in, A77
- Stromelysin-1, in carotid artery plaques, A43
- Substance P, preprotachykinin-A promoter encoded by, neuron restrictive silencer factor regulation of, A95
- Sucrose transporter, for plant, *Saccharomyces cerevisiae* production of, A141
- Sulphotransferase, in placenta, A49
- Surface enhanced resonance Raman scattering, of cytochrome P450 3A4, A36
- Sweet lupin, seed proteins of, nutritional toxicity of, A59
- SWI/SNF complex, catalytic nucleosome mobilisation mediated by, A96
- Synapses, excitatory, post-synaptic membrane in, A69
- Synaptic function, immediate-early gene modulation of, A71
- Synaptic structure, of brain, A69
- Synaptic targeting, GABA receptor regulation and, 527
- T5 5'-3' exonuclease, helix-loop-helix region of, A127
- T lymphocytes adhesion to endothelial cells in laminar flow, A107
- phosphatidylserine and, A108
- apoptosis of, A135
- phosphatidylinositol 2-phosphate in, IL-2 regulation of, A105
- Tabtoxin, produced by *Pseudomonas tabaci*, decrease of in batch culture, A153
- TaqMan reverse transcriptase polymerase chain reaction, to quantitate mRNA in receptor transfected cell clones, A150
- Temperature, effect on prolactin receptor in brown adipose tissue, A49
- Terpenoids, structural diversity in, A17
- TGF- $\beta$ : see Transforming growth factor- $\beta$
- Thrombin receptors, heptahelical, 246
- Thyroid hormones deiodinase protection of fetus from, A6
- developmental effects of, 83
- Thyrotropin-releasing hormone receptor activation and desensitisation of, A118
- subtypes of, characterisation of, A115
- Tip60, as co-activator protein of androgen receptor protein, A121
- TNF: see Tumour necrosis factor entries.
- Tobacco, transgenic, membrane protein in, green expression system and, 923

- TPQ-dependent amine oxidase**, A31  
**Transcription**  
  chromatin and, A65  
  RNA polymerase III and, A65, A66  
**Transcription factor IIB**, in transcription start site selection, A93  
**Transcription factors**, MAP kinase activation of, kinase docking domains in, A97  
**Transcriptional activator NIFA**, from *Klebsiella pneumoniae*, A125  
**Transforming growth factor- $\beta$** , in atherosclerosis, A92  
*trans*-Golgi network membrane dynamics, lipid kinases and, A77, 670  
**Transmembrane receptors**, mammalian, A143  
*trans*-Sialidase, from *Trypanosoma cruzi*, biological role of, A86  
**Triglyceride transfer protein gene**, dietary cholesterol and, A122  
**Trimethylamine dehydrogenase**  
  electron transfer in  
    flavoprotein in, 196  
    stepwise, to 6-S cysteinyl FMN in, A45  
  structure and function of, 201  
  substrate inhibition in, A46  
**trp** RNA-binding protein, RNA interaction with, A89  
*Trypanosoma cruzi*  
  glycoprotein of, phosphorylation of, A111  
  mucin glycosylphosphatidylinositols from, macrophage activation by, A86  
  phosphosaccharide glycans of, structure of, A111  
  *trans*-sialidase from, biological role of, A86  
*Trypanosoma cruzi* trans-sialidase, biological role of, 516  
*Trypanosoma equiperdum*, drug-sensitive and drug-resistant, purine transporters in, A149  
**Trypsin**, modified, peptide synthesis with, 727  
**Trypsin receptors**, heptahelical, 246  
**Trypsinogen**, activation and fibrinolysis, in acute pancreatitis, A110  
**Tryptase receptors**, heptahelical, 246  
**Tumour necrosis factor**, apoptosis and, A134  
**Tumour necrosis factor- $\alpha$** , macrophate lipoprotein lipase regulation by, A95  
**Tumour necrosis factor- $\alpha$  receptor**, phospholipase A<sub>2</sub> activation of, A112  
**Tumour necrosis factor- $\alpha$ -converting enzyme**  
  characterisation of, 219  
  orthologue of, sequence analysis and characterisation of, A55  
  in shedding of cell surface proteins, A23  
  control of, A24  
**Tyrosine phosphorylating signalling event**, glycoprotein GP Ib-V-IX initiation of, in platelets, A120  
**Tyrosine residues**, in galactose and amine oxidases, A2  
**Ubiquinone and inhibitors**: *see also Quinone binding sites in membrane proteins*  
  in complex I, A83, 602, 606  
**Ubisemiquinone stabilisation**, in cytochrome bc complexes, A81  
**Uncoupling proteins**, mitochondrial, expression and purification of, A140, 888  
**Uric acid**, in kinetic studies of xanthine oxidase activity in milk, A152  
**v-Abl protein tyrosine kinase**  
  apoptosis suppression by, A136, A147  
  p21<sup>WAF-1</sup> regulation mediated by, in growth-arrested and proliferating myeloid cells, A147  
**Vaccination**, for lymphoma, genetic approaches to, A139  
**Vasculature**, in hypertension, nitric oxide manipulation in, A149  
**Vasopressin receptor**: *see Arginine vasopressin receptor*.  
**VIP**<sub>2</sub> and VPAC<sub>2</sub> receptor juxtaposition, in VIP activation of receptor, A118  
**Visual pigments**  
  baculovirus-based functional expression of, A142  
  GPCRs and, 937  
**Vitamin K2,3-epoxide reductase**  
  kinetics of, A129  
  purification of, A129  
**Vitrin**, von Willebrand factor type A domain in, A132, 832  
**von Willebrand factor type A domain**  
  C3B binding site in, A144  
  evolution of, A133, 835  
  in matrilins, A132, 824  
  structure and function of, A131, 815  
  in vitrin, A132, 832  
**VP16**, herpes simplex virus induced by, A66  
**VPAC receptor**, phospholipase D activation by, A118  
**VPAC<sub>2</sub> and VIP<sub>2</sub> receptor juxtaposition**, in VIP activation of receptor, A118  
**Vps34p**, lysosomal enzyme delivery and, A107  
**Vulva**, squamous cell carcinoma in, hydroxyphenyl retinamide-induced apoptosis in, A146  
**West of Scotland Coronary Prevention Study bio-bank**, lipoprotein(a) plasma concentration in, 459  
**Wound**, on skin, hyaluronan receptors and, A12, 142  
**Xanthine oxidase**, in milk, allopurinol, alloxanthine, and uric acid kinetic studies of, A152  
**Xanthine oxidoreductase**, effect of IgG anti-xanthine oxidoreductase antibodies on, A151  
**Xeno-oestrogen**, metabolism of, breast cancer risk and, A13, 299

**Yeast**  
**budding**  
  end of mitosis in, A66  
  oxysterol binding protein homologues in, A100  
  cytochrome bc complexes in, A81

- Zinc fingers, FOG-1 activity and, A99  
Zinc ion form, of *Escherichia coli* dehydroquinate synthase, A47  
Zinc  $\beta$ -lactamases, histidines in, A37