

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).
 - 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). 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

A negon, I. 864	F akhouri, H. 821	L iu, J. 832	S 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 aird, A. 851	G etmanova E. V. 950	M 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	T anner, M. J. A. 917
Bernard, A. R. 955	Guillot, C. 864	Meacock, S. L. 883	Tate, C. G. 932
Berry, M. 851	H 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	N arayana, S. 832	Townsend, P. 785
937	Hogg, N. 826	Neame, S. J. 790	Trowsdale, J. 781
Brimmell, M. 785	Hovius, R. 955	O liver, J. D. 883	Tuckwell, D. 835
Buchanan, S. K. 903	Hoyle, C. K. 893	O'Reilly, J. 893	U sal, C. 864
C arson, M. 832	J enkins, P. V. 815	P ackham, G. 785	V acher, D. 888
Castro, M. G. 858, 873	K 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	W 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
D aly, G. 869	L atchman, D. S. 847	R 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	X ie, H. 893
Dorman, N. 841	Leitinger, B. 826	Rich, T. 781	Y ing, W. 851
Dreja, H. 869	Lever, A. M. L. 841	Roberts, P. E. 893	Young, L. S. 807
E dwards, Y. J. K. 815	Liang, W.-j. 893	Rutherford, N. G. 893	Z hao, J. 841
Eilers, A. 790	Litherland, G. J. 893	S 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) β 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_{M1}: 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- α -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-HT₃ 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_A 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.
 β -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- β -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 α -binding site in the third intracellular loop of the human muscarinic M₃ receptor, A116
—; Young, K. W.; Challiss, R. A. J.; Tobin, A. B.
Phosphorylation and functional regulation of the β_2 -adrenergic receptor by the phospholipase-C-coupled M₃-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_{RI}) 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)- κ B activation in single living cells: analysis of anti-apoptosis and kinetics of activation by interleukin-1 β , 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 [³H]noradrenaline release from SH-SY5Y cells, A33
Cernadas, M., *See* Higgins, J. M. G.
Cerretti, D. P.
—; Characterization of the tumour necrosis factor α -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- κ 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 PtdInsP₄-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 α , 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_A-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⁺ 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_{IP4BP} and GAP1^m 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 β -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 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 β 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- α , 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_o 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- κ 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 A₃ 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) κ 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 His₆-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 β -lactamases, A4, 58
- Frère, J. M.**, *See* Damblon, C.
- Frévert, 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 α 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 α 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- δ 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 M₁ 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 β -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 H₃-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- β -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 β -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)P₃ and PtdIns(3,4)P₂, 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_{1a} 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 β -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 α_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 γ —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 α 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- γ , 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 bc₁ 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 α availability limits Ins(1,4,5)P₃-mediated Ca²⁺ 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 bo₃; 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 bc₁ 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-HT₇ 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 bc₁, A81
—; Kranis, K. T.; Piccolelli, M. A.; Schwartz, R. S.; Sternberg, J. A.; Sun, K. M.
Farnsworth and oxazolidinones: potent inhibitors of cytochrome bc₁, 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 A₂ 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 V₁ receptor, 158
—; Cell-cycle-dependent coupling of vasopressin V₁-receptor to G_{q/11} and G_{i3}, 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_{1A} receptor and the α subunit of G_{i1} 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_{WAF1} 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
- Kuhlman, 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⁺ 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 ϕ -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 F₁-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^m 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 VIP₂ (VPAC₂) 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 γ -aminobutyric acid B (GABA_B) receptors, A70
 —; White, J.; Main, M.; Green, A.; Wise, A. GABA_B 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 μ 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_{αi}: 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 PAC₁ 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 PtdInsP₂ 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⁺ 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 β in atherosclerosis, A92
Meunier, B.
 —; Yeast as a eukaryotic model for inhibitor resistance and dysfunction of the bc₁ 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 α 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 γ -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[®] 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⁺-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 b₅ 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 somatographic 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 [³¹³C]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 [³H]noradrenaline: evidence for intrinsic noradrenergic neurons, A32
- Purohit, A.**
—; Singh, A.; Reed, M. J.
Regulation of steroid sulphatase and oestradiol 17 β -hydroxysteroid dehydrogenase in breast cancer, 323
- Pusztai, A.**, *See* Naughton, P. J.
- Pyne, N.**, *See* 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 β -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_{IP4BP} and GAP1^m, 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 (M₁)-evoked increase in [Ca²⁺]_i 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_{2a} 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 α_{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 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 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 bc₁ 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 [¹²⁵I]-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_{WAF1/CIP1}, 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 $\alpha_{1\mu}$ -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_L and Bax and suppress drug-induced apoptosis in B lymphoma cells, A147
- Teesdale-Spitte, 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-Morrogh, 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 Ca²⁺, 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 γ -aminobutyric acid (GABA)_b-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 α_{2a} -adrenoceptor G_i/G_o α -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 β -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 b₂, 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 Ca²⁺ 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 β -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 δ opioid G_i-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
- Wulf, 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.; Katanacov, 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- δ 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 κ B α associated with nuclear factor (NF)- κ B, but reassociation of NF- κ B with free I κ B α 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 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 A₃, 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
- α_{1B} -Adrenergic receptor
functions of, regulation of, 154
internalisation of, A114
- α_{2A} -Adrenergic receptor, agonist-specific coupling of, transmembrane serine residue effect on, A31
- α_{2A} -Adrenergic receptor subunit fusion proteins, construction and analysis of, A115
- α_2 C2-Adrenergic receptor receptor, human, expression in different host-vector systems, A151
- β_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
- γ -Aminobutyric acid receptor
as heterodimer, 530
heterodimerisation of, A70
ionotropic, synaptic targeting and regulation of, A70
regulation of, synaptic targeting and, 527
- γ -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
- α -Amyloid precursor protein(s)
proteolytic processing and degradation of, 234
transmembrane molecule shedding and, 243
- β -Amyloid precursor protein
secretases, angiotensin-converting enzymes and, 229
- β -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- κ 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- β -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- β 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 α 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- μ 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 H₂ 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⁺-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 β -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- α association with, A105
- Casein kinase I α 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_A-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_κB, 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, δ opioid G_i-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 α 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 α , casein kinase I association with, A105
 Centaurin protein γ , 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_{M1} 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 β -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 M₁ 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*, Zn²⁺ 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- κ 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⁺ reductase, in *Escherichia coli*, A56 ferredoxin NADP⁺ residues in, A56 in flavocytochrome P450 BM3 in complex with cytochrome b, A108 flavocytochromes in, A29, A30, 179, 185, 190, 196 in ω -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, Zn²⁺ form of, A47 ferredoxin NADP⁺ 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
F₁-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_yRI in association of SHIP with Shc, A128 protein kinase C and phospholipase activation by, monocyte differentiation and, A101
Ferredoxin NADP⁺, NADPH binding and electron transfer residues in, A56
Ferredoxin NADP⁺ 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, δ opioid G_i-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 b₂ electron acceptor specificity of, alteration of, A45 R289K mutant of, structure-function studies of, A57
Flavocytochrome c₃ 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_{M1}, cholera toxin and, IAsys study of, A28, 340
G protein(s)
 activation of, by serotonin receptor and G fusion proteins, A114
 centaurin γ 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 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 γ -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_{M1}, 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 α , cell surface targeting of, Homer-1 α in, A113
Glutamate release, K $^{+}$ -evoked, from brain, naloxone benzolhydrazone inhibition of, A33
Glutathione conjugates, β -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 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 H₂ receptors, distribution of binding in basal ganglia, in Huntington's disease, A33
Histidines, in zinc β -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 α , in cell surface targeting of glutamate receptor type 1 α , 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 H₂ 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 κ B activation by, CD44 in, A43
Hydrogen bonding
 of caricaein, time-dependent inhibitors and, A37
 of *Streptococcus pyogenes* penicillin-binding protein PBP2x β -lactam acylenzymes, A36
p-Hydroxycinnamoyl-CoA
 hydratase/lyase, in hairy root cultures of *Datura stramonium*, A51
 ω -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_{M1} 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 κ B, NF- κ 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- γ , macrophage lipoprotein lipase regulation by, A95
Interleukin-1, effect on articular cartilage, A120
Interleukin-1 β , NK- κ 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
 β -Lactam acylenzymes, of *Streptococcus pyogenes* penicillin-binding protein PBP2x, hydrogen bonding and protein perturbation in, A36
 β -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 Ca^{2+} oscillations in, A32
 Ligand, protein interaction with, A90 γ -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- γ 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- γ 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- β -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
 F₁-ATPase structure in, 33
 F₁-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 α 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 β_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^{WAF-1} 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⁺ residues in, A56
 Naloxone benzohydrazone, inhibition of K⁺-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
 Ca²⁺ and phosphoinositide signalling in, growth factor receptors and G protein-coupled receptors in, A34
 choline and noradrenaline uptake by, β -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- κ B: *see* Nuclear factor- κ 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, β -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- κ B
 anti-apoptosis by, A94, A134, 812
 hyaluronic acid fragment activation of, CD44 in, A43
 I κ B association with, A94
 IL-1 β 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 β -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, β -substituted glutathione conjugates as inhibitors of, A39
- Opiate-transforming redox enzyme, morphine reductase as, A46
- δ -Opioid G_i-linked receptor, in cell cycle regulation in fibroblasts, A114
- Opioid receptor- μ , 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 α 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^{WAF1/CIP1} regulation of, A99
- PAC₁ 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 α 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 γ RI activation of, monocyte differentiation and, A101 hepatic mixed function oxidase activity and, A61
- Phospholipase A₂, TNF- α activation of, A112
- Phospholipase C δ , and related molecules, A76, 652
- Phospholipase C, coupled to muscarinic receptor, phosphorylation and regulation of β_2 -adrenergic receptor by, A34
- Phospholipase C- δ 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 PAC₁ 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- α -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 FcγRI 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, 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_YRI and, A128
- Shewanella putrefaciens*, cytochrome c from, A58
- SHIP, Shc association with, Fc_YRI 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, β -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- β : see Transforming growth factor- β
- 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- β , 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- α , macrophate lipoprotein lipase regulation by, A95
Tumour necrosis factor- α receptor, phospholipase A₂ activation of, A112
Tumour necrosis factor- α -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^{WAF-1} 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*.
VIP₂ and VPAC₂ 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
VPAC₂ and VIP₂ 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 β -lactamases, histidines in, A37