

**Review**

Biosynthesis of glycosylphosphatidylinositol membrane anchors  
by V.L. Stevens

361–370

**Research Communications**

Estimation of the free [Ca <sup>2+</sup> ] gradient across endoplasmic reticulum membranes by a null-point method	A.P. Dawson, G.T. Rich and J.W. Loomis-Husselbee	371–374
Inhibitors of signalling identify differential control processes responsible for selective effects of insulin on the expression of phosphoenolpyruvate carboxykinase and gene 33 in rat H4 hepatoma cells	S.-H. Yang and A.J. Dickson	375–378
Mitochondrial proton conductance and H <sup>+</sup> /O ratio are independent of electron transport rate in isolated hepatocytes	R.K. Porter and M.D. Brand	379–382
Evolutionary conservation of the vertebrate Ah (dioxin) receptor: amplification and sequencing of the PAS domain of a teleost Ah receptor cDNA	M.E. Hahn and S.I. Karchner	383–387

**Research Papers**

**Proteins**

Characterization of the structure of polydisperse human low-density lipoprotein by neutron scattering	D.F. Meyer, A.S. Nealis, K.R. Bruckdorfer and S.J. Perkins	407–415
Time-course studies by neutron solution scattering and biochemical assays of the aggregation of human low-density lipoprotein during Cu <sup>2+</sup> -induced oxidation	D.F. Meyer, M.O. Mayans, P.H.E. Groot, K.E. Suckling, K.R. Bruckdorfer and S.J. Perkins	417–426
The role of the second growth-factor domain of human factor IXa in binding to platelets and in factor-X activation	S.S. Ahmad, R. Rawala, W.-F. Cheung, D.W. Stafford and P.N. Walsh	427–431
Binding of blood coagulation Factor VIII and its light chain to phosphatidylserine/phosphatidylcholine bilayers as measured by ellipsometry	J. Spaargaren, P.L.A. Giesen, M.P. Janssen, J. Voorberg, G.M. Willems and J.A. van Mourik	539–545
Some effects of post-translational N-terminal acetylation of the human embryonic ζ globin protein	A. Scheepens, R. Mould, O. Hofmann and T. Brittain	597–600
Flavin-dependent alcohol oxidase from the yeast <i>Pichia pinus</i> . Spatial localization of the coenzyme FAD in the protein structure: hot-tritium bombardment and ESR experiments	A.Z. Averbakh, N.D. Pekel, V.I. Seredenko, A.V. Kulikov, R.I. Gvozdev and I.P. Rudakova	601–604
Recombinant soluble human tissue factor secreted by <i>Saccharomyces cerevisiae</i> and refolded from <i>Escherichia coli</i> inclusion bodies: glycosylation of mutants, activity and physical characterization	M.J. Stone, W. Ruf, D.J. Miles, T.S. Edgington and P.E. Wright	605–614
Amino acid sequence of HSP-1, a major protein of stallion seminal plasma: effect of glycosylation on its heparin- and gelatin-binding capabilities	J.J. Calvete, K. Mann, W. Schäfer, L. Sanz, M. Reinert, S. Nessau, M. Raida and E. Töpfer-Petersen	615–622
A novel antibacterial peptide family isolated from the silkworm, <i>Bombyx mori</i>	S. Hara and M. Yamakawa	651–656

**Enzymes**

NMN adenylyltransferase from bull testis: purification and properties	E. Balducci, G. Orsomando, V. Polzonetti, A. Vita, M. Emanuelli, N. Raffaelli, S. Ruggieri, G. Magni and P. Natalini	395–399
Purification and characterization of a trypanothione-glutathione thioltransferase from <i>Trypanosoma cruzi</i>	M. Moutiez, M. Aumercier, R. Schöneck, D. Meziane-Cherif, V. Lucas, P. Aumercier, A. Ouaiissi, C. Sergheraert and A. Tartar	433–437
Isocitrate dehydrogenase from bovine heart: primary structure of subunit 3/4	Y. Zeng, C. Weiss, T.-T. Yao, J. Huang, L. Siconolfi-Baez, P. Hsu and J.I. Rushbrook	507–516
Characterization of Ca <sup>2+</sup> /calmodulin-dependent protein kinase II from smooth muscle	Z.-H.L. Zhou, S. Ando, D. Furutsuka and M. Ikebe	517–525
Evidence for a novel ATP-dependent membrane-associated protease in spinach leaf mitochondria	C. Knorpp, C. Szigyarto and E. Glaser	527–531

Nitric oxide-mediated inactivation of mammalian ferrochelatase <i>in vivo</i> and <i>in vitro</i> : possible involvement of the iron-sulphur cluster of the enzyme	T. Furukawa, H. Kohno, R. Tokunaga and S. Taketani	<b>533-538</b>
Sulphate-activated phosphorylase <i>b</i> : the pH-dependence of catalytic activity	S.E. Zographos, N.G. Oikonomakos, H.B.F. Dixon, W.G. Griffin, L.N. Johnson and D.D. Leonidas	<b>565-570</b>
Effects of calcium on phosphatidylserine- and saposin C-stimulated glucosylceramide $\beta$ -glucosidase activity	E.M. Prence	<b>571-575</b>
Studies on the structural and functional aspects of <i>Rhodotorula gracilis</i> D-amino acid oxidase by limited trypsinolysis	L. Pollegioni, F. Cecilian, B. Curti, S. Ronchi and M.S. Pilone	<b>577-583</b>
Purification and characterization of a fatty acid-activated protein kinase (PKN) from rat testis	M. Kitagawa, H. Mukai, H. Shibata and Y. Ono	<b>657-664</b>
Functions of the C-terminal domain of CTP:phosphocholine cytidyltransferase. Effects of C-terminal deletions on enzyme activity, intracellular localization and phosphorylation potential	R.B. Cornell, G.B. Kalmar, R.J. Kay, M.A. Johnson, J.S. Sanghera and S.L. Pelech	<b>699-708</b>
The assembly of neutrophil NADPH oxidase: effects of mastoparan and its synthetic analogues	D. Tisch, Y. Sharoni, M. Danilenko and I. Aviram	<b>715-719</b>
<b>Carbohydrates and lipids</b>		
Evidence that His <sup>110</sup> of the protein FadL in the outer membrane of <i>Escherichia coli</i> is involved in the binding and uptake of long-chain fatty acids: possible role of this residue in carboxylate binding	P.N. Black and Q. Zhang	
Molecular organization of the interferon $\gamma$ -binding domain in heparan sulphate	H. Lortat-Jacob, J.E. Turnbull and J.-A. Grimaud	<b>497-505</b>
Evidence for an ethanolamine cycle: differential recycling of the ethanolamine moiety of phosphatidylethanolamine derived from phosphatidylserine and ethanolamine	Y.-J. Shiao and J.E. Vance	<b>673-679</b>
Leukotriene synthesis in calcium-depleted human neutrophils: arachidonic acid release correlates with calcium influx	E. Krump, M. Pouliot, P.H. Naccache and P. Borgeat	<b>681-688</b>
<b>Gene structure and expression</b>		
An upstream stimulatory factor (USF) binding motif is critical for rat preprotachykinin-A promoter activity in PC12 cells	J.M. Paterson, C.F. Morrison, S.C. Mendelson, J. McAllister and J.P. Quinn	<b>401-406</b>
Retinoid receptors cause distortion of the retinoic acid response element in the phosphoenolpyruvate carboxykinase gene promoter	D.K. Scott, R.K. Hall and D.K. Granner	<b>483-490</b>
Synergistic transcriptional activation of the thyrotropin receptor promoter by cyclic AMP-responsive-element-binding protein and thyroid transcription factor 1	A. Saiardi, P. Falasca and D. Civitareale	<b>491-496</b>
Secretory proteins compete for production in the mammary gland of transgenic mice	M. McClenaghan, A. Springbett, R.M. Wallace, C.J. Wilde and A.J. Clark	<b>637-641</b>
<b>Regulation of metabolism</b>		
Platelet-derived growth factors-AA and -BB regulate collagen and collagenase gene expression differentially in human fibroblasts	E.M.L. Tan, H. Qin, S.H. Kennedy, S. Rouda, J.W. Fox, IV and J.H. Moore, Jr.	<b>585-588</b>
Substrate-dependent utilization of the glycerol 3-phosphate or malate/aspartate redox shuttles by Ehrlich ascites cells	A.R. Grivell, E.I. Korpelainen, C.J. Williams and M.N. Berry	<b>665-671</b>
Effect of adrenaline and phorbol myristate acetate or bacterial lipopolysaccharide on stimulation of pathways of macrophage glucose, glutamine and O <sub>2</sub> metabolism. Evidence for cyclic AMP-dependent protein kinase-mediated inhibition of glucose-6-phosphate dehydrogenase and activation of NADP <sup>+</sup> -dependent 'malic' enzyme	L.-F.B.P. Costa Rosa, R. Curi, C. Murphy and P. Newsholme	<b>709-714</b>
<b>Membranes and bioenergetics</b>		
Relationship between Rap1 protein phosphorylation and regulation of Ca <sup>2+</sup> transport in platelets: a new approach	C. Magnier, E. Corvazier, M.-C. Aumont, T.H. Le Jemtel and J. Enouf	<b>469-475</b>
The nature of mitochondrial respiration and discrimination between membrane and pump properties	M. Canton, S. Luvisetto, I. Schmehl and G.F. Azzone	<b>477-481</b>
Induction of cystine transport activity in mouse peritoneal macrophages by bacterial lipopolysaccharide	H. Sato, K. Fujiwara, J.-I. Sagara and S. Bannai	<b>547-551</b>

Induction of the high-affinity Na <sup>+</sup> -dependent glutamate transport system X <sub>AG</sub> <sup>-</sup> by hypertonic stress in the renal epithelial cell line NBL-1	A. Ferrer-Martinez, A. Felipe, B. Nicholson, J. Casado, M. Pastor-Anglada and J. McGiven	<b>689–692</b>
Distribution of the integral plasma membrane glycoprotein CE9 (MRC OX-47) among rat tissues and its induction by diverse stimuli of metabolic activation	C.L. Nehme, B.E. Fayos and J.R. Bartles	<b>693–698</b>
<b>Receptors and signal transduction</b>		
Parathyroid hormone induces protein kinase C but not adenylate cyclase in adult cardiomyocytes and regulates cyclic AMP levels via protein kinase C-dependent phosphodiesterase activity	K.-D. Schlüter, M. Weber and H.M. Piper	<b>439–444</b>
Early Ca <sup>2+</sup> signalling events in neutrophils detected by rapid confocal laser scanning	E.J. Pettit and M.B. Hallett	<b>445–448</b>
Two classes of agonist-sensitive Ca <sup>2+</sup> stores in platelets, as identified by their differential sensitivity to 2,5-di-(tert-butyl)-1,4-benzohydroquinone and thapsigargin	L. Cavallini, M. Coassin and A. Alexandre	<b>449–452</b>
Activation of a retinoblastoma-protein-dependent pathway by sphingosine	G.S. Dbaibo, R.A. Wolff, L.M. Obeid and Y.A. Hannun	<b>453–459</b>
Ligand-dependent and -independent activation of the transcription factor $\gamma$ RF-1 in a cell-free system	C.A. Feghali and T.M. Wright	<b>461–467</b>
Structural and functional analysis of the canine histamine H2 receptor by site-directed mutagenesis: N-glycosylation is not vital for its action	Y. Fukushima, Y. Oka, T. Saitoh, H. Katagiri, T. Asano, N. Matsuhashi, K. Takata, E. van Breda, Y. Yazaki and K. Sugano	<b>553–558</b>
Down-regulation of the G-proteins G <sub>q</sub> $\alpha$ and G <sub>11</sub> $\alpha$ by transfected human M <sub>3</sub> muscarinic acetylcholine receptors in Chinese hamster ovary cells is independent of receptor down-regulation	E. van de Westerlo, J. Yang, C. Logsdon and J.A. Williams	<b>559–563</b>
Platelet phospholipase D is activated by protein kinase C via an integrin $\alpha_{IIb}\beta_3$ -independent mechanism	E.A. Martinson, S. Scheible, A. Greinacher and P. Presek	<b>623–628</b>
Cytosolic free Ca <sup>2+</sup> oscillations induced by diadenosine 5',5'''-P <sup>1</sup> ,P <sup>3</sup> -triphosphate and diadenosine 5',5'''-P <sup>1</sup> ,P <sup>4</sup> -tetraphosphate in single rat hepatocytes are indistinguishable from those induced by ADP and ATP respectively	A.K. Green, P.H. Cobbold and C.J. Dixon	<b>629–635</b>
An isoform of the phosphatidylinositol-transfer protein transfers sphigomyelin and is associated with the Golgi system	K.J. de Vries, A.A.J. Heinrichs, E. Cunningham, F. Brunink, J. Westerman, P.J. Somerharju, S. Cockcroft, K.W.A. Wirtz and G.T. Snoek	<b>643–649</b>
<b>Cell biology and development</b>		
Characterization of the mannose 6-phosphate-dependent pathway of lysosomal enzyme routing in an invertebrate	V. Alvarez, A.J. Parodi and R. Couso	<b>589–595</b>