

colloquia

643rd Meeting, Warwick

colloquium: Endocytosis, Toxins, Immunotoxins and Viruses

Endocytic and transcytic pathways in Caco-2 cells	J. P. LUZIO, M. R. JACKMAN & J. A. ELLIS	717
Morphological analysis of the regulation of CD4 endocytosis by p56^{lck}	M. MARSH, P. REID, I. PARSONS, C. HERMON & A. PELCHEN-MATTHEWS	719
Protein toxins: mode of action and cell entry	K. SANDVIG, E. DUBININA, Ø. GARRED, K. PRYDZ, J. V. KOZLOV, S. H. HANSEN & B. VAN DEURS	724
Action of diphtheria toxin on <i>Schizosaccharomyces pombe</i>	J. DAVEY	728
<i>Pseudomonas</i> exotoxin: recombinant conjugates as therapeutic agents	D. J. FITZGERALD & I. PASTAN	731
Cell surface and intracellular functions for galactose binding in ricin cytotoxicity	J. M. LORD, R. WALES, C. PITCHER & L. M. ROBERTS	734
Structural factors influencing the pharmacokinetics and stability of immunotoxins	E. J. WAWRZYNCZAK, A. J. CUMBER, R. V. HENRY, G. D. PARNELL & J. H. WESTWOOD	738

colloquium: Uses and Applications of Antisense Oligonucleotides

Uses of antisense nucleic acids — an introduction	A. D. B. MALCOLM	745
Methylphosphonodiester/phosphodiester chimeric oligodeoxynucleotides	D. M. TIDD	746
Mechanisms of gene regulation by endogenous and artificially introduced antisense RNA	W. NELLEN, M. HILDEBRANDT, B. MAHAL, A. MÖHRLE, P. KRÖGER, M. MANIAK, R. OBERHAUSER & M. SADIQ	750
Investigations into the structure-activity relationships of the luteinizing hormone receptor using antisense oligodeoxynucleotides	B. A. COOKE & A. P. WEST	754
Antisense genes as tools to engineer virus resistance in plants	E. R. BEJARANO, A. G. DAY, V. PARANJPE & C. P. LICHTENSTEIN	757
Applications of antisense oligodeoxynucleotides in virology	A. D. B. MALCOLM, J. COULSON, N. BLAKE & L. C. ARCHARD	762
Ribonuclease H-mediated inhibition of translation and reverse transcription by antisense oligodeoxynucleotides	C. BOIZIAU, B. LARROUY, S. MOREAU, C. CAZENAVE, D. SHIRE & J.-J. TOULMÉ	764

colloquium: The Red Cell Membrane in Health and Disease

Erythrocyte membrane barrier function: role of bilayer polarity and skeletal proteins	B. DEUTICKE, S. KLONK & C. W. M. HAEST	769
--	--	------------

Interaction of the red cell membrane skeleton with the membrane	J. C. PINDER, A. PEKRUN, A. M. MAGGS & W. B. GRATZER	774
Molecular basis for red cell membrane viscoelastic properties	N. MOHANDAS	776
Expression of spectrin mutations as a function of their topography	J. DELAUNAY, N. ALLOISIO, L. MORLÉ, R. WILMOTTE, J. MARÉCHAL & F. BAKLOUTI	782
Integral band 7 protein of the human erythrocyte membrane	G. W. STEWART & A. C. ARGENT	785
Inducible transport systems in the regulation of parasite growth in malaria-infected red blood cells	B. C. ELFORD & R. A. PINCHES	790
Role of reticulocyte transport heterogeneity in the generation of mature sickle cells with different volumes	V. L. LEW & R. M. BOOKCHIN	797

colloquium: Lipid-Binding Proteins: Form and Function in Cellular Processes

Fatty acid-binding proteins: structural and functional diversity	J. H. VEERKAMP, R. G. H. J. MAATMAN & C. F. M. PRINSEN	801
Structural and multifunctional properties of cardiac fatty acid-binding protein: from fatty acid binding to cell growth inhibition	F. SPENER & T. BÖRCHERS	806
Labelling of an 88 kDa adipocyte membrane protein by sulpho-<i>N</i>-succinimidyl long-chain fatty acids: inhibition of fatty acid transport	C. M. HARMON, P. LUCE & N. A. ABUMRAD	811
Mechanism of cellular fatty acid uptake	W. STREMMEL, H. KLEINERT, B. A. FITSCHER, J. GUNAWAN, C. KLAASSEN-SCHLÜTER, K. MÖLLER & M. WEGENER	814
Participation of sterol carrier protein-2 in cholesterol metabolism	S. KESAV, J. McLAUGHLIN & T. J. SCALLEN	818
A role for fatty acids and liver fatty acid binding protein in peroxisome proliferation?	I. ISSEMAN, R. PRINCE, J. TUGWOOD & S. GREEN	824
Annexin V, a calcium-dependent phospholipid-binding protein	J. H. WALKER, C. M. BOUSTEAD, J. J. KOSTER, M. BEWLEY & D. A. WALLER	828
Phospholipid-binding proteins in calcium-dependent exocytosis	R. D. BURGOYNE & A. MORGAN	834

Spring Meeting of the Peptide and Protein Group Gregynog

colloquium: Sequence-Specific Peptides for Probing Receptors and Ion-Channel Functions

Interactions of an immunogenic decapeptide fragment of the neuromuscular acetylcholine receptor (AChR) with a monoclonal anti-AChR antibody	M. MARRAUD, P. DEMANGE, M.-T. CUNG, V. TSIKARIS, C. SAKARELLOS, E. VATZAKI & S. J. TZARTOS	837
--	--	------------

Synthetic and conformational studies of the alpha subunit cytoplasmic domain of the immunoglobulin E receptor	R. C. THOMAS, G. J. ANDERSON, D. ASHTON, A. F. DRAKE, I. TOTH & W. A. GIBBONS	840
Use of mutant insulin receptors in structure-function studies of insulins	L. SCHÄFFER, J. MARKUSSEN, T. KJELDSEN, A. S. ANDERSEN, F. C. WIBERG & H. TAGER	842
Identification of antibodies to bovine growth hormone binding to defined, continuous epitopes within the protein	J. BEATTIE	843
Characterization of the binding site of neuropeptide Y to the rabbit kidney receptor using multiple peptide synthesis	A. G. BECK-SICKINGER, H. DÜRR, E. HOFFMANN, W. GAIDA & G. JUNG	847
Automatic multiple peptide synthesis	J. E. FOX	851
Sequence-specific antibodies as probes for structural analysis of the A-type γ-aminobutyric acid receptors	F. A. STEPHENSON	853
Gap junction communication channel: peptides and anti-peptide antibodies as structural probes	W. H. EVANS, G. CARLILE, S. RAHMAN & K. TÖRÖK	856
δ-Toxin and analogues as peptide models for protein ion channels	C. M. BLADON, P. BLADON & J. A. PARKINSON	862
Gramicidin-lipid interactions induce specific tryptophan side-chain conformations	G. A. WOOLLEY, A. DUNN & B. A. WALLACE	864
Neurokinin A analogues binding to isolated membranes from guinea-pig brain	D. J. S. GUTHRIE, A. A. ABU SHANAB, J. M. ALLEN, G. B. IRVINE & B. WALKER	867
<hr/>		
Author index		871
Keyword index		889
Corrections		911

Endocytosis, toxins, immunotoxins and viruses		
<i>E. coli</i> heat-labile enterotoxin B subunit as a carrier for delivery of a peptide with anti-HSV activity	A. MARCELLO, G. PALU' & T. R. HIRST	311S
Enhanced stability of an immunotoxin made with abrin A chain and a hindered disulphide cross-linker	A. CUMBER & E. WAWRZYNCZAK	312S
Partial characterization of the translational inhibitor present in seeds of <i>Cucumis melo</i> L.	A. ROJO, F. J. ARIAS, J. M. FERRERAS, E. MENDEZ & T. GIRBES	313S
Characterization of a cell-free translation system from <i>Agrobacterium tumefaciens</i>	J. M. FERRERAS, C. ALEGRE, R. IGLESIAS & T. GIRBES	314S
Disturbance of mouse pancreatic β -cell function following echo 4 virus infection	T. M. SZOPA, T. WARD & K. W. TAYLOR	315S
Poly(lactic acid) microspheres as immunological adjuvants for orally delivered cholera toxin B subunit	A. J. ALMEIDA, H. O. ALPAR, D. WILLIAMSON & M. R. W. BROWN	316S
Effects of brefeldin A on <i>de novo</i> synthesis of lipids in BHK21 cells	K.-J. KALLEN, P. QUINN & D. ALLAN	317S
A novel membrane-acting immunotoxin, the immunolysin, with therapeutic potential	F. A. DROBNIIEWSKI, G. J. WATSON, E. J. WAWRZYNCZAK, J. E. ALOUF & P. E. THORPE	318S
Uses and applications of anti-sense oligonucleotides		
Non-specific effects of anti-sense oligonucleotides on α -1-antitrypsin expression in Cos cells transfected with α -1-antitrypsin cDNA constructs	G. SCOBIE, B. JASANI & N. KALSHEKER	319S
The LH receptor cytoplasmic tail is required for desensitization of LH action but not cyclic AMP production	A. P. WEST & B. A. COOKE	320S
Anti-sense oligodeoxynucleotides as antiviral agents	J. M. COULSON, N. W. BLAKE, L. C. ARCHARD & A. D. B. MALCOLM	321S
The role of major histocompatibility complex gene products in immune recognition		
Cloning and bacterial expression of a secreted soluble human MHC Class II β -1 domain	C. H. W. CHAN, T. TERRY, J. GOODALL & S. P. YOUNG	322S
The red cell membrane in health and disease		
Hydrophilic surface maps of channel-forming peptides	I. D. KERR & M. S. P. SANSON	323S
Effect of administration of aminoguanidine on viscosity of erythrocyte suspensions from rats with chronic streptozotocin-induced diabetes mellitus	S. ENNIS & J. B. MOYNIHAN	324S
Comparison between membrane sialoglycoproteins present in rat and human erythrocytes	A. HERRAEZ, J. C. DIEZ & J. LUQUE	325S
Ethanolamine inhibits the fusion of erythrocytes by (polyethylene glycol) 6000 and by cell swelling	J. M. BALDWIN, R. O'REILLY & J. A. LUCY	326S
Phagocytosis of liposomes that mimic lipid composition of senescent and sickle erythrocytes	M. A. SYMES & H. M. PATEL	327S

Na ⁺ -dependent orthophosphate and D-glucose symporters of the sheep parotid acinar cell: expression in <i>Xenopus</i> oocytes	P. S. TARPEY, S. VAYRO, S. P. SHIRAZI-BEECHEY & R. B. BEECHEY	328S
The mechanisms of peptide transport across the brush border membrane of enterocytes	P. L. MINETT, L. MIZEN, H. GORDON, R. B. BEECHEY & S. P. SHIRAZI-BEECHEY	329S
A novel hydrogen-donating drug suppresses haem damage from myoglobin mediated by oxidized low density lipoproteins	E. S. R. GREEN, C. COOPER, J. WRIGGLESWORTH & C. RICE-EVANS	330S
Oxidized low density lipoproteins convert oxyhaemoglobin from ruptured erythrocytes to reactive ferryl forms	G. PAGANGA, C. RICE-EVANS, B. ANDREWS & D. LEAKE	331S
Labiality of an ATP-activated lipid antioxidant system in rat liver microsomes	M. DEVEREUX, T. HALLINAN, J. GOR, C. RICE-EVANS & P. J. SAVILL	332S
Lipid-binding proteins: form and function in cellular processes		
A lipophilic protein inhibitor of neutral cholesteryl ester hydrolase; effects of age, gender and diet	J. H. SHAND & D. W. WEST	333S
A lipophilic protein inhibitor of neutral cholesteryl ester hydrolase: mode of action	J. H. SHAND & D. W. WEST	334S
Early postnatal changes in the brown fat-specific mitochondrial uncoupling protein in goat adipose tissues	P. TRAYHURN, M. E. THOMAS & J. S. KEITH	335S
Types I and II iodothyronine 5'-deiodinase activities in perirenal brown adipose tissue of neonatal goats	F. NICOL, H. LEFRANC, J. R. ARTHUR & P. TRAYHURN	336S
Lipoprotein secretion by cultured hamster hepatocytes	V.-Q. HOANG, K. E. SUCKLING & K. M. BOTHAM	337S
The contribution of lipoprotein cholesterol to hepatic precursor pools for bile acid synthesis	E. BRAVO, G. ORTU, A. CANTAFORA, T. GULDUR, P. A. MAYES & K. M. BOTHAM	338S
Identification of a vitamin E-binding protein in rat heart cytosol	D. J. LEISHMAN, G. DUTHIE & A. K. DUTTA-ROY	339S
Acyl CoA: cholesterol acyltransferase activity in the yolk sac membrane of the chick embryo	J. H. SHAND, D. W. WEST, R. J. MCCARTNEY, R. C. NOBLE & B. K. SPEAKE	340S
Characterization of the myristoyl CoA:Glycylpeptide N-myristoyl transferase from rat and bovine brain	R. A. J. MCLHINNEY & K. MCGLONE	341S
The effect of α blockade on cholesterol regulation <i>in vitro</i> and <i>in vivo</i>	D. OWENS & G. H. TOMKIN	342S
Plasma sialic acid in myocardial infarction	M. HAQ, P. TUTT & M. CROOK	343S
General topics		
The effects of ribozymes on gene expression in plants	G. J. EVANS, J. W. S. BROWN, R. WAUGH, T. M. A. WILSON & P. C. TURNER	344S
Expression of an oestrogen regulated mRNA in breast tumour tissue	P. A. BURKE & C. D. GREEN	345S
Demonstration of xanthine oxidase in human heart	S. ABADDEH, P. C. CASE & R. HARRISON	346S
Prevention of acetaminophen-induced liver damage by <i>Berberis aristata</i> leaves	A. H. GILANI & K. H. JANBAZ	347S

Transcription termination and DNase I hypersensitive sites in the 3' flanking sequence of the α -1-antitrypsin gene	T. SWANSON, K. MORGAN & N. KALSHEKER	348S
Cooperative unit and enthalpy studies of cholesterol and cholesteryl esters in dimyristoylphosphatidylcholine liposomes	R. J. MALCOLMSON, P. H. BESWICK, J. HIGINBOTHAM, P. O. PRIVAT & L. SAUNIER	349S
FL-I, and anti-fish leukocyte mAb, reacts with CD45 in <i>Oreochromis</i> fish	A. J. DOWDING	350S
Dipeptidylpeptidase IV initiates the degradation of neuropeptide Y in cardiac muscle membranes	J. R. McDERMOTT, A. M. GIBSON, J. BOUBLIK & J. A. BIGGINS	351S
Biochemical and ultrastructural characterization of olfactory receptor membranes of rat and pig, using a novel method of cilium separation	T. HENDERSON, M. KRAEVSKAYA, N. GREGSON, D. B. GOWER & L. H. BANNISTER	352S
Biliverdin reductase activity in relation to bilirubin	R. BERI & R. CHANDRA	353S
Metal-metal interaction inhibits the NADP ⁺ -specific isocitrate dehydrogenase activity in rat brain	R. BERI, V. KUMAR & R. CHANDRA	354S
Cyclic nucleotide phosphodiesterase activity of <i>Medicago sativa</i> L.	P. S. ROBINSON, C. J. COOKE, R. P. NEWTON, T. J. WALTON & C. J. SMITH	355S
Human pepsin I, a complex of proteoglycan and protein	J. P. PEARSON, A. BLACKBURN, S. LYNN, A. ALLEN & N. B. ROBERTS	356S
8-Hydroxyquinoline and its derivatives: potential inhibitors of platelet aggregation	S. A. SAEED, R. U. SIMJEE, A. H. GILANI, S. SIDDIQUI, R. SALEEM, S. FAIZI, B. SIDDIQUI & S. FARNAZ	357S
Presence of arachidonic acid-like substance(s) in <i>Thevitia neriifolia</i>	A. H. GILANI, F. SHAHEEN, Q. ADIL, S. BEGUM, B. S. SIDDIQUI & S. SIDDIQUI	358S
Effect of harmalol on blood pressure in anaesthetized rats	A. H. GILANI, K. AFTAB, S. A. SAEED & A. SURIA	359S
The effect of heparin on the u.v. absorption properties of Fe(II) and Fe(III)	M. F. WILLIAMSON, W. F. LONG & F. B. WILLIAMSON	360S
Complexation of Fe ²⁺ ions by heparin	D. GRANT, W. F. LONG & F. B. WILLIAMSON	361S
Evidence from potentiometric titration for lack of reversibility in the interaction between heparin and Cu ²⁺ or Ca ²⁺ ions	D. GRANT, W. F. LONG & F. B. WILLIAMSON	362S
Complexation of Zn ²⁺ ions by heparin	D. GRANT, W. F. LONG & F. B. WILLIAMSON	363S
Heparin inhibits production of thiobarbituric acid-reactive substances in the presence of linolenic acid and Fe ²⁺ ions	M. A. ROSS, W. F. LONG & F. B. WILLIAMSON	364S
C1300 neuroblastoma cells possess quisqualate sensitive glutamate binding sites	J. B. UNEY, S. THOMAS, B. H. ANDERTON & I. C. CAMPBELL	365S
Factors affecting the assay of urinary free and bound sialic acid	P. J. WATERS, E. M. LEWRY, A. P. BRIMBLE & C. A. PENNOCK	366S
Cellular damage in the perfused rat kidney	J. W. MORTON & C. J. DUNCAN	367S
Studies of 16-androstene steroid biosynthesis and binding in human testis	T. K. KWAN, M. A. KRAEVSKAYA, D. J. H. TRAFFORD, H. L. J. MAKIN & D. B. GOWER	368S

Cell spreading on collagen that has been exposed to reactive aldehydes	L. THORNE, W. DAVIES, S. C. BROWN, C. A. RICE-EVANS & J. A. LUCY	369S
Effects of simulated acid rain upon glutathione levels in radish	N. D. COTTAM, C. J. COOKE & C. J. SMITH	370S
Nitrate level in vegetables by ion chromatography	M. A. MURCIA, A. VERA & F. GARCIA-CARMONA	371S
Binding of 5 α -androst-16-en-3-one to glycoproteins of porcine olfactory tissue	M. A. KRAEVSKAYA, M. J. P. HIGGINS & D. B. GOWER	372S
Fibroblast-keratinocyte interactions: influence on collagenase activity in wound healing models	P. G. GENEVER, E. J. WOOD & W. J. CUNLIFFE	373S
Collagen chain composition and collagen gene expression in acne keloids	J. K. JUTLEY, W. J. CUNLIFFE, A. LAYTON & E. J. WOOD	374S
Effect of estradiol on serum cholesterol in castrated male rats	M. PIZZICHINI, G. CINCI, L. AREZZINI, M. L. PANDOLFI, L. TERZUOLI & R. PAGANI	375S
Study of purine catabolism using ¹⁴ C-glycine as tracer	M. PIZZICHINI, M. L. PANDOLFI, G. CINCI, L. TERZUOLI, B. PORCELLI, R. PAGANI & R. FULCERI	376S
Purine nucleotide content in human T4 and T8 lymphocyte subpopulations from normal subjects and AIDS patients	A. TABUCCHI, F. CARLUCCI, E. CONSOLMAGNO, M. C. RE, P. MONARI, E. MARINELLO & R. PAGANI	377S
Purine nucleotide, nucleoside and nucleobase content in human lymphocytes from normal subjects and AIDS patients	F. CARLUCCI, A. TABUCCHI, E. CONSOLMAGNO, M. C. RE, P. MONARI, E. MARINELLO & R. PAGANI	378S
Mitochondrial L-threonine dehydrogenase	R. PAGANI, R. LEONCINI, S. RIGHI, R. GUERRANTI, L. LAZZERETTI & E. MARINELLO	379S
Physiological role of thiazolidinic compounds	L. TERZUOLI, E. MARINELLO, R. PAGANI & M. PIZZICHINI	380S
Labelling of urinary uric acid and allantoin	M. PIZZICHINI, M. PANDOLFI, B. PORCELLI, L. AREZZINI, R. PAGANI & R. FULCERI	381S
Ribose 1-phosphate dependent formation of ADP and ATP in rat liver extracts	D. VANNONI, R. LEONCINI, R. GUERRANTI, S. RIGHI, R. PAGANI & E. MARINELLO	382S
ADP and ATP as products of AMP in rat liver extracts	D. VANNONI, R. LEONCINI, R. PAGANI & E. MARINELLO	383S
Effect of estradiol on serum oxypurines in castrated male rats	B. PORCELLI, L. TERZUOLI, M. L. PANDOLFI, G. CINCI M. PIZZICHINI & R. PAGANI	384S
Modulation of carbon flux at the junction of isocitrate in the central metabolic pathways of <i>Escherichia coli</i>	E. M. T. EL-MANSI & G. D. DAWSON	385S
N-myristoylation of the catalytic subunit of PK-A: does this covalent modification specify receptor recognition?	R. A. CLEGG & K. CONNOR	386S
A water solution peptidoglycan-containing polymer from the <i>Micrococcus lysodeikticus</i> cell walls	NASIR-UD-DIN, FAYYAZ-UD-DIN & E. WALKER-NASIR	387S
<i>Plasmodium falciparum</i> synthesizes 43 000 dalton protein containing O-linked glucosamine	NASIR-UD-DIN, M. HASSAN, M. H. QAZI, FAYYAZ-UD-DIN, G. SINALDI, D. HOESSLI & E. WALKER-NASIR	388S
Substrate specificity of a novel bovine heart Ca ²⁺ /calmodulin-dependent kinase	J. A. BARNES, H. G. COORE & R. K. SHARMA	389S