676th Meeting Heriot-Watt University, Edinburgh

ABSTRACTS

Abs	tract no.		Page no.
Τŀ	IE NOVARTIS MEDAL LECTURE		
	Time:	Tuesday 9 April, 11.30–12.30	
Ml	Antibodies: a paradigm for the evolution of n M. Neuberger	nolecular recognition	47
SP	EAKER ABSTRACTS		
BIO	ENERGETICS GROUP		
Tetr	apyrroles: their Birth, Life and Death		
	Speaker Session Times:	Monday 8 April, 09.00–17.10 Tuesday 9 April, 09.00–17.10 Wednesday 10 April, 09.00–16.30	
Al	Structure and function of glutamyl-tRNA red acid formation D. Jahn	uctase involved in 5-aminolaevulinic	47
A2	Mutants, metals and mechanism of 5-aminola P.M. Shoolingin-Jordan	nevulinic acid dehydratase	47
A3	The terminal steps of haem biosynthesis H.A. Dailey		47
A4	Structural diversity in metal ion chelation, an H.L. Schubert	d the structure of uroporphyrinogen III synthase	48
A5	Biochemistry and enzymology of chlorophyll C.N. Hunter	l biosynthesis	.48
A 6	Making light of it: the role of plant haem oxy M.J. Terry	genases in phytochrome chromophore synthesis	48
A7	Two enzymes for oxygen-dependent and -ind III during bacterial tetrapyrrole biosynthesis G. Layer	lependent decarboxylation of coproporphyrinogen	48
	oscribing institutions are encouraged to co	py and distribute this table of contents	

Abst	bstract no.	
A8	An investigation into the mechanism of SirB from <i>Bacillus megaterium</i> – a sirohydrochlorin ferrochelatase H.K. Leech	49
A9	How Nature synthesizes vitamin B_{12} : a survey of the last four billion years A.I. Scott	49
A10	Radical journeys catalysed by vitamin ${\bf B}_{12}$ -dependent methylmalonyl-CoA mutase ${\bf R}.$ Banerjee	49
A 11	Unravelling chlorophyll catabolism in higher plants B. Kraeutler	49
A12	Haem degradation in animals and plants T.J. Mantle	50
A13	Cytochrome c maturation: a complex pathway for a simple task? L. Thöny-Meyer	50
A14	Structure of an unusual haemoprotein involved in thiosulphate oxidation B.C. Berks	50
A15	Coupling of ATP hydrolysis to metal ion insertion into porphyrins by magnesium chelatase J. Reid	50
A16	Cobalamin (vitamin B ₁₂) biosynthesis in <i>Rhodobacter capsulatus</i> H. McGoldrick	51
A17	Bacterial cytochrome c nitrite reductase: three-dimensional structure and spectroscopy of the multi-haem enzyme P.M.H. Kroneck	5 1
A18	Structure and function of the nickel tetrapyrrole F430 in methanogenic archaea R.K. Thauer	51
A19	A universal mechanism for fumarate reduction G.A. Reid	51
A20	The resuscitation of two dihaem respiratory enzymes N.J. Watmough	52
A21	Crystal structure of formate dehydrogenase-N from <i>Escherichia coli</i> S. Iwata	52
A22	Structure and function of purple bacterial antenna complexes R.J. Cogdell	52
A23	Spectroscopic characterization of cytochrome CBB3 oxidase from <i>Pseudomonas stutzeri</i> R.S. Pitcher	52
A24	Role of membrane bound tetra-haem CymA in the anaerobic respiration of <i>Shewanella oneidensis</i> MR-1 C. Schwalb	53

Abst	tract no.	Page no.
A25	The denitrification pathway of the hyperthermophile <i>Pyrobaculum aerophilum</i> S. de Vries	53
PRC	OTEIN AND PEPTIDE SCIENCE GROUP	
Amy	loidogenic Proteins Involved in Neurodegeneration and Therapeutic Implications	
	Speaker Session Times: Monday 8 April, 09.00–17.15 Tuesday 9 April, 09.00–17.10	
Bl	Neuropathology of Alzheimer's disease N.J. Cairns	53
B2	Protein misfolding and its links with human disease C.M. Dobson	_, 53
В3	Three-dimensional structure of amyloid fibrils L.C. Serpell	54
B4	Cholesterol and Alzheimer's disease B. Wolozin	54
B5	Memapsin 2 (β-secretase) as a therapeutic target J. Tang	54
В6	γ-Secretase inhibition D. Beher	54
В7	Transgenic models of Alzheimer's disease: behavioural studies and the prospects of therapeutic immunization R.G.M. Morris	55
В8	Inhibition of toxicity and protofibril formation in the β -amyloid peptide β -(25–35) using N-methylated derivatives A.J. Doig	.55
В9	Amyloid fibril formation by human stefin B: influence of solvent composition, trifluoroethanol and temperature E. Zerovnik	55
B10	Polyglutamine conformation in glutathione S-transferase (GST)-polyglutamine fusion proteins L. Masino	, 55
B11	Cell-derived Aβ oligomers: production, activity and inhibition D.M. Walsh	56
B12	Properties of neurotoxic peptides related to the <i>BRI</i> gene B. Austen	56
B13	Oligomerization and toxicity of α -synuclein O.M.A. El-Agnaf	56
B14	Interactions between prion protein isoforms B. Caughey	56

Abst	ract no.	Page no.
	Altering prion protein misfolding for therapy and diagnosis of transmissible spongiform encephalopathies C. Soto	57
B16	Role of polyglutamine sequences in Huntington's disease S. Davies	57
B17	Quantitative detection and identification of amyloid β -peptides directly from crude biological samples using the ProteinChip® Biology System S.C. Cleverley	57
НОБ	RMONE GROUP	
	ons from the Type II Family of G-protein-Coupled Receptors; Ligands, Receptor Structure Function	
	Speaker Session Times: Monday 8 April, 09.00–17:10 Tuesday 9 April, 09.00–17:10	
C1	Transcriptional regulation of the human calcitonin receptor gene M. Pondel	57
C2	Corticotropin-releasing hormone receptors: regulation of expression and signalling properties E.W. Hillhouse	58
C3	Adrenomedullin: receptor and signal transduction D.M. Smith	58
C4	Identification of the secretin, vasoactive intestinal peptide (VIP) and glucagon binding sites: from chimaeric receptors to point mutations M. Waelbroeck	58
C5	Additional signals from PAC/VPAC family receptors R. Mitchell	58
C6	Structure and function of the GLP-1 receptor D. Donnelly	59
C7	A small sequence in the third intracellular loop of the vasoactive intestinal peptide receptor-1 $(VPAC_1)$ is responsible for its efficient coupling to the calcium effector I. Langer	59
C8	Transcriptional regulation of the human calcitonin receptor-like receptor (CRLR) in microvascular endothelial cells L. Nikitenko	59
C9	Interaction of calcitonin gene-related peptide (CGRP) with its receptors D.R. Poyner	59
C10	Functional relevance of G-protein-receptor-associated proteins exemplified by the receptor-activity-modifying proteins (RAMPs)	60

Abst	tract no.	Page no.
C 11	Receptor component protein (RCP): a member of a multi-protein complex required for G-protein-coupled signal transduction I.M. Dickerson	60
C12	Interactions of G-protein-coupled receptors with synaptic scaffolding proteins HJ. Kreienkamp	60
C13	In vitro folding and functional characterization of the extracellular domain of G-protein-coupled receptors R. Rudolph	60
C14	The development and potential of non-peptide antagonists for calcitonin-gene-related peptide receptors M. Schindler	61
C15	Receptor-activity-modifying proteins (RAMPs) interact with and modulate the signalling of vasoactive intestinal peptide receptor-1 (VPAC ₁) receptors P.M. Sexton	61
C16	Bioinformatics and type II G-protein-coupled receptors (GPCRs) S.M. Foord	61
мо	LECULAR ENZYMOLOGY GROUP	
14-3	-3 Proteins in Cell Regulation	
	Speaker Session Times: Tuesday 9 April, 09.00–17.30 Wednesday 10 April, 09.00–15.20	
D1	14-3-3 structure, function and role in neurodegenerative diseases, trafficking and nuclear signalling A. Aitken	6,1
D2	Molecular architecture of kinase/phosphatase signalling complexes J. Scott	62
D3	Pro-survival function of 14-3-3 proteins H. Fu	62
D4	Structure and function of a cAMP-operated 14-3-3 binding switch: essential role in biological timing D.C. Klein	62
D5	Structure and function of tomato 14-3-3 protein isoforms M.R. Roberts	, 62
D6	Signalling pathways that target diverse plant and human 14-3-3-binding partners C. MacKintosh	63
D7	Use of cerebrospinal fluid 14-3-3 analysis in the diagnosis of sporadic and variant Creutzfeldt–Jakob disease A.J.E. Green	63
D8	Analysis of 14-3-3 isoforms in the lateral geniculate nucleus in murine brain H.C. Baxter	63

Abst	Abstract no.		
D9	<i>In vivo</i> association of 14-3-3 isoforms with mam O. Novac	malian origins of DNA replication	63
D 10	Insulin growth factor-1 (IGF-1) induces phospho (forkhead in rhabdosarcoma) G. Rena	rylation of two novel residues of FKHR	6 4
DII	Multiple roles for 14-3-3 proteins in nucleo-cyto M.B. Yaffe	plasmic transport	64
D12	14-3-3 as a cruciform-binding DNA replication p M. Zannis-Hadjopoulos	protein	64
D13	ExoS binds its co-factor 14-3-3 through a non-ph B. Hallberg	nosphorylated motif	64
D14	Transgenic 14-3-3 isoforms in plants J. Szopa		65
D15	Phosphorylation-independent interaction between membrane H+-ATPase A.T. Fuglsang	n 14-3-3 protein and the plant plasma	65
D16	Plants call 14-3-3 for transport assistance A.H. de Boer		65
вю	CHEMICAL IMMUNOLOGY GROUP		
Med	iation and Modulation of Antibody Function		
	Speaker Session Times:	Tuesday 9 April, 09.00–17.10 Wednesday 10 April, 09.00–12.30	
Εl	X-ray crystallographic studies of IgG–Fc γ R inte P. Sondermann	ractions	65
E2 1	Engineering therapeutic antibodies for improved f L.G. Presta	unction	66
E3	IgE Fc structure and receptor interactions B.J. Sutton		66
E4	The human IgA–FcαR interaction and its blockade by streptococcal IgA binding proteins J.M. Woof		66
E5	The contrasting IgG-binding interactions of hum K.L. Armour	an and herpes simplex virus Fc receptors	66
E6	Novel antibody therapeutics for treatment of can J. van de Winkel	cer and inflammation	67
E7	Pepbodies and Troybodies I. Sandlie		67

Abst	Abstract no.	
E8	Bispecific antibodies targeting cancer cells T. Valerius	67
E9	Prions: conformations, diagnosis and therapy R.A. Williamson	67
E10	Formatting antibody fragments to mediate specific therapeutic functions A.N.C. Weir	<u>,68</u>
E11	Amino acid sequence requirements in the human IgA_1 hinge for cleavage by streptococcal IgA_1 proteases B. Senior	6 ,8
E12	A single-domain antibody fragment that stabilizes the native state of two amyloidogenic lysozyme variants and hence prevents aggregation M. Dumoulin	68
E13	Red blood cells (RBCs) coated with IgG anti-D bind transforming growth factor- β (TGF- β) B.M. Kumpel	68
E14	Target cytokine delivery to neuroblastoma P.K. Dehal	69
RES	EARCH COLLOQUIUM	
Neu	rodegeneration	
	Speaker Session Time: Wednesday 10 April, 08.45–12.30	
FI	Characterization of thermodynamic diversity between transmissible spongiform encephalopathy (TSE) agent strains R.A. Somerville	69
F2	An investigation into the mechanism of toxicity of amyloid-forming proteins and peptides I.S. Turnbull	69
F3	Heparan sulphate binds the aspartic protease β-secretase and regulates cleavage of Alzheimer's amyloid precusor protein (APP) Z. Scholefield	69
F4	Does pentosan polysulphate have prophylactic potential for transmissible spongiform encephalopathies? C. Farquhar	70
F5	Controlled release of cytochrome c from functional brain mitochondria: implications for apoptotic mechanisms in neurodegenerative disease R.A. Clayton	70
F6	Chronic nicotine treatment reduces β-amyloidosis J. Court	70

Abs	stract no.	Page no.
F7	Changes in nestin and α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) receptors are associated with preconditioning of the mouse cortex by repetitive spreading depression P.L. Chazot	70
F8	An investigation in changes in gene regulation and subsequent signal transduction activation after ischaemic stroke N. Mitsios	71
F9	Therapeutics for Alzheimer's disease T. Wisniewski	71
PC	OSTER ABSTRACTS	
віс	DENERGETICS GROUP	
Tetı	rapyrroles: their Birth, Life and Death	
	Poster Session Times: Monday 8 April, 12.30–14.00 Tuesday 9 April, 12.30–14.00 Wednesday 10 April, 12.30–14.00	
1	Assembly of haem cofactors into diverse haemoproteins Q. Cheng and A. Smith	71
2	Aminolaevulic acid transport in murine mammary adenocarcinoma cells M. Bermudez Moretti, S. Correa Garcia, C. Perotti, A. Casas and A. Batlle	71
3	Effect of NO donors on sulphur amino acids produced by rat hepatoma cells M. Abulahbas, K. Naseem and A. Nicolaou	72
4	Pharmacokinetics of protoporphyrin IX synthesis induced by administration of 5-aminolaevulinic acid (ALA) and its derivative ALA hexyl ester (He-ALA) C. Perotti, A. Casas, H. Fukuda and A. Batlle	72
5	Genotype/phenotype correlation in patients with erythropoietic protoporphyria V. Parera, R. Koole, G. Miderman, M.V. Rossetti, A. Batlle and F.W.M. de Rooij	72
6	Oxidative stress induced by Griseofulvin in mice liver S. Afonso, V. Rouvier Garay, M. Martinez, A. Molinari and A. Batlle	72
7	Preliminary studies about the effect of acute and chronic 5-aminolaevulinic acid intoxication in brain mice J.A. Rodriguez, A.M. Buzaleh and A. Batlle	73
8	Spectroscopic characterization of cytochrome cbb_3 oxidase from $Pseudomonas\ stutzeri$ R.S. Pitcher, M.R. Cheesman, T. Brittain and N.J. Watmough	73
9	An investigation into the mechanism of SirB from <i>Bacillus megaterium</i> – a sirohydrochlorin ferrochelatase H.K. Leech, E. Raux-Deery and M.J. Warren	73

Abs	Abstract no.	
10	Cloning, expression and characterization of 5-aminolaevulinic acid dehydratase (ALAD) from the deep-sea fish <i>Coryphaenoides armatus</i> A.A. Brindley, D.M. Hunt, J.C. Partridge and M.J. Warren	7,3
11	Haem A synthesis in <i>Bacillus subtilis</i> : structure and function of CtaA M. Throne-Holst and L. Hederstedt	7,4
12	Cobalamin (vitamin B ₁₂) biosynthesis in <i>Rhodobacter capsulatus</i> H.M. McGoldrick, E. Deery and M. Warren	74
13	Inhibition of cytochrome c oxidase by nitrite and nitric oxide: reversible and irreversible A. Mann, P. Nicholls, M. Sharpe and C.E. Cooper	74
14	Spectroscopic characterization of the substrate-binding properties of NADPH: protochlorophyllide oxidoreductase (POR) D.J. Heyes and C.N. Hunter	74
15	Two enzymes for oxygen-dependent and independent decarboxylation of coproporphyrinogen III during bacterial tetrapyrrole biosynthesis G. Layer, E. Mahlitz, D. Breckau and D. Jahn	75
16	Mechanistic insights into flavocytochrome c_3 , the soluble fumarate reductase from Shewanella frigidimarina. E.L. Rothery, K.L. Pankhurst, C.S. Miles, C.G. Mowat, G.A. Reid and S.K. Chapman	75
17	Coupling of ATP hydrolysis to metal ion insertion into porphyrins by magnesium chelatase J.D. Reid and C.N. Hunter	75
18	Role of membrane-bound tetra-haem CymA in the anaerobic respiration of <i>Shewanella oneidensis</i> MR-1 C. Schwalb, S.K. Chapman and G.A. Reid	75
19	Novel respiratory flavocytochromes of Shewanella oneidensis MR-1 M. Bilsland, M.D. Walkinshaw and G.A. Reid	76
20	Cobalamin synthesis in <i>Pseudomonas aeruginosa</i> R. Graham, A. Papakonstantinopoulou, C. Crampton, M. Curtis and M. Warren	76
21	Spectral properties of bacterial nitric oxide reductase S.J. Field, L. Prior, M. Dolores Roldán, M.R. Cheesman, A.J. Thomson, S. Spiro, J. Butt, N.J. Watmough and D.J. Richardson	76 .
22	Studies on 5-aminolaevulinic acid dehydratase from <i>Pisum sativum</i> J.H. Youell, M. Sarwar, KM. Cheung and P.M. Shoolingin-Jordan	76
23	Studies on human recombinant 5-aminolaevulinic acid dehydratase and human recombinant porphobilinogen deaminase D. Butler, M. Sarwar and P.M. Shoolingin-Jordan	77
24	Preliminary NMR analysis of uroporphyrinogen synthase D.I. Kahari, M.P. Crump and P.M. Shoolingin-Jordan	77′
25	Expression, purification and steady-state analysis of magnesium protoporphyrin IX methyltransferase from <i>Synechocystis</i> PCC6803 M. Shepherd and C.N. Hunter	77 ,

Page no. Abstract no.

PROTEIN AND PEPTIDE SCIENCE GROUP

Amyloidogenic Proteins	Involved in	Neurodegeneration and	Therapeutic In	plications

Poster Session Times:

Monday 8 April, 12.30–14.00 Tuesday 9 April, 12.30–14.00

26	20S proteasomal degradation of α -synuclein does not generate the non- β -amyloid plaque component (NAC) R. Layfield, G.K. Tofaris, M.P. Mee, K. Bailey and M.G. Spillantini	77
27	Inhibition of toxicity and protofibril formation in the β -amyloid peptide β -(25–35) using N-methylated derivatives A.J. Doig, E. Hughes, R.M. Burke, T.J. Su, R.K. Heenan and J. Lu	78
28	Chronic nicotine treatment reduces β-amyloidosis J. Court, E. Hellstrom-Lindhal, M. Lee, M. Johnson, M. Mousavi, R. Hall, E. Perry, I. Bednar and A. Nordberg	7 8
29	Proteolytic processing of the amyloid precursor protein by α -secretase T.M.J. Allinson, A.J. Turner and N.M. Hooper	78
30	Heparan sulphate binds the aspartic protease β-secretase and regulates cleavage of Alzheimer's amyloid precursor protein (APP) Z. Scholefield, G. Wayne, A. Amour, E. Yates, B. McDowell and J. Turnbull	78
31	Altered processing of the Alzheimer's amyloid precursor protein in human neuroblastoma cells expressing the prion protein E.T. Parkin, A.J. Turner and N.M. Hooper	79
32	An N-methylated analogue inhibits α-synuclein-(68–78) aggregation G.B. Irvine, A.M. Bodles, O.M.A. El-Agnaf, D.J.S. Guthrie and B. Greer	79
33	Role of the transmembrane form of the prion protein in neurodegeneration A. Gillott and N.M. Hooper	79
34	Characterization of thermodynamic diversity between TSE agent strains R.A. Somerville, R.C. Oberthr, U. Havekost, F. MacDonald and A.G. Dickinson	7 9
35	Polyglutamine conformation in glutathione S-transferase (GST)-polyglutamine fusion proteins L. Masino and A. Pastore	80
36	Amyloid sequences and human prion sequences are able to functionally replace repeat regions of the prion-forming domain of yeast Sup35p A.D. Dunn, S.N. Parham, C.G. Resende and M.F. Tuite	80
37	PrP gene expression regulation in scrapie S.T.G. Burgess, W. Goldmann, G. O'Neill and N. Hunter	80
38	Amyloid fibril formation by human stefin B: influence of solvent composition, trifluoroethanol and temperature E. Zerovnik	80
39	A correlation study of human serum Aβ-(1–42) and serum cholesterol measurements G.L. Gibson, E.B. Renvoize, M.C. Dale, P. Bladon and D. Allsop	81

Abs	bstract no. Pa		
40	Cyclodextrin dimers and trimers inhibit the aggregation of β-amyloid S. Moore, J. Askew, G.L. Gibson, D.K. Lueng, R. Breslow, O.M.A. El-Agnaf and D. Allsop	81	
41	A β-site amyloid precursor protein cleaving enzyme (BACE) assay S. McMeekin, C.H. Williams, J. Cummings, J. Law, B. Greer and J.A. Johnston	81	
42	Does pentosan polysulphate have prophylactic potential for transmissible spongiform encephalopathies? C.F. Farquhar, I. McConnell, J. Graham, S. Cumming, R. Prescott, G.R. Barclay,	01	
	A. Boyle, M.L. Turner and M.E. Bruce	81	
43	New analytical methods for the study of protein aggregation in real time S. Moore, O. El Agnaf, Y. Davies, D. Allsop and M. Swann	82	
44	Expression of cellular prion protein in <i>Xenopus</i> oocytes J.G. Connolly, R.J. Tate, G.C. Telling, J. Fraser, D. Brown and M.W. Head	82	
45	Neurotoxicity of ABri and ADan N. Gunasekera, M. Lee, S. Nagala, O. El-Agnaf, V. Lelyveld and B. Austen	82	
46	What constitutes infectivity in transmissible spongiform encephalopathy disease? S.L. Campbell, R. Barron, J. Shaw and J. Manson	82	
47	Characterization of amyloid fibrils formed from β-lactoglobulin W.S. Gosal, S.B. Ross-Murphy, P.D.A. Pudney and A.H. Clark	83	
48	Role of cholesterol in the processing β-secretase ASP-2 C. Sidera, J. Frampong-Manso, C. Liu and B. Austen	83	
98	γ-Secretase enzyme specificity towards cleavage of amyloid precursor protein and Notch H.D. Lewis, B.I. Perez Revuelta, D. Beher and M.S. Shearman	95	
RES	SEARCH COLLOQUIUM		
Neu	rodegeneration		
	Poster Session Time: Wednesday 10 April, 12.30–14.00		
49	Changes in nestin and α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) receptor are associated with preconditioning of the mouse cortex by repetitive spreading depression P.L. Chazot, O.V. Godukhin and T.P. Obrenovitch	rs 83 ,	
50	Molecular characterization of protein interactions essential for neurotransmitter exocytosis: munc18 and mint (munc18-interacting protein) M. Okamoto and M. Sakanaka	83	
51	Haem oxygenase/nitric oxide synthase interaction: a role in neurodegeneration? A.J. Heslegrave, V.C. Stewart, M. Sharpe, V. Calabrese and J.B. Clark	84	
52	An investigation in changes in gene regulation and subsequent signal transduction activation after ischaemic stroke N. Mitsios, J. Gaffney, P. Kumar, S. Kumar and M. Slevin	84	

Abstract no.		Page no.
53	Controlled release of cytochrome c from functional brain mitochondria: implications for apoptotic mechanisms in neurodegenerative disease R.A. Clayton, M.A. Sharpe, J.B. Clark and T.E. Bates	84
54	Molecular and cellular characterization of the prion-like protein Doppel A.P. Ison and N.M. Hooper	84
55	An investigation into the mechanism of toxicity of amyloid-forming proteins and peptides I.S. Turnbull, B.J. Tabner, O.M.A. El-Agnaf, S. Moore, Y. Davies and D. Allsop	85
56	Calcium-dependent proteolysis of adenylyl cyclase IX (ACIX) F.A. Antoni and J. Simpson	85
57	SOD1 aggregation in familial amyotrophic lateral sclerosis (FALS) T.P. Beaujeux, E.L. Schofield, P.J. Shaw and J.D. Wood	85
58	Poster withdrawn	85
59	Heat shock proteins protect PC12 cells from MPP+ toxicity D.J. Quigney, A. Samali and A.M. Gorman	86
но	RMONE GROUP	
	sons from the Type II Family of G-Protein-Coupled Receptors: Ligands, Receptor Structure Function	
	Poster Session Times: Monday 8 April, 12.30–14.00 Tuesday 9 April, 12.30–14.00	
60	EMR4, a novel EGF-TM7 molecule up-regulated in activated mouse macrophages, is involved in the adhesion to a B lymphoma cell line, A20 M. Stacey, GW. Chang, S. Sanos, L. Chittenden, L. Stubbs, S. Gordon and HH. Lin	86
61	Adenylyl cyclase 9: biochemical and pharmacological characterization of recombinantly expressed 'active core' A. Haunso and F. Antoni	86
62	Effect on calcitonin gene-related peptide (CGRP)-binding of mutations to hydrophilic residues within the second transmembrane region of human calcitonin receptor-like receptor (CRLR) A.C. Conner, S.G. Howitt, M. Wheatley, D.M. Smith and D.R. Poyner	86
63	Pharmacology and desensitization of the human receptor-activity-modifying protein-3 (RAMP3) and rat calcitonin receptor-related peptide (CRLR) combination D.L. Hay, T. Choksi and D.M. Smith	87
64	Specific interaction between ADP-ribosylation factor (ARF) 6 and the Hop-1 intracellular loop 3 domain of the human PAC1 receptor E. Ronaldson, D.N. Robertson, M.S. Johnson, P.J. Holland, R. Mitchell and E.M. Lutz	87
65	Mitogenic signalling via the parathyroid hormone-related protein receptor N.G. Anderson, C. Sanderson and N.J. Bundred	87
66	Selective regulation of secretin receptor responsiveness by protein kinase A (PKA) and G-protein-coupled receptor kinase (GRK) 6 R. Ghadessy and E. Kelly	87

Abst	Abstract no.	
67	Direct interaction between the threonine-11 of vasoactive intestinal polypeptide (VIP) and tyrosine-184 of the vasoactive intestinal peptide receptor-2 (VPAC ₂) I. Nachtergael, P. Vertongen, J. Perret, I. Langer, P. Robberecht and M. Waelbroeck	88
68	A small sequence in the third intracellular loop of the vasoactive intestinal peptide receptor-1 (VPAC ₁) is responsible for its efficient coupling to the calcium effector I. Langer, P. Vertongen, J. Perret, M. Waelbroeck and P. Robberecht	88
69	Study of agonist-dependent VPAC ₁ receptor phosphorylation I. Langer, P. Vertongen, J. Perret, M. Waelbroeck and P. Robberecht	88
70	Interaction of calmodulin with the intracellular C-tails of metabotropic glutamate receptors assayed with the yeast two-hybrid system B. Pilkington, O. El Far, H. Betz and V. O'Connor	88
71	Transcriptional regulation of the human calcitonin receptor-like receptor (CRLR) in microvascular endothelial cells L.L. Nikitenko, C.M.P. Rees and R. Bicknell	89
99	Investigation into the role of the second and third extracellular loop domains of the glucagon-like peptide-1 receptor in ligand binding and activation S.Y. Al-Sabah and D. Donnelly	96
100	Overexpression, purification and characterization of the N-terminal domain of the glucagon-like peptide-1 receptor R. López de Maturana and D. Donnelly	96
101	Alanine scan of the first extracellular loop of the glucagon-like peptide-1 receptor R. López de Maturana, J. Treece-Birch and D. Donnelly	96
МО	LECULAR ENZYMOLOGY GROUP	
14-3	-3 Proteins in Cell Regulation	
	Poster Session Times: Tuesday 9 April, 12.30–14.00 Wednesday 10 April, 12.30–14.00	
72	Role of cruciform binding protein (CBP)/14-3-3 in DNA replication D. Alvarez, M. Callejo, O. Novac, G.B. Price and M. Zannis-Hadjopoulos	89
73	In vivo association of 14-3-3 isoforms with mammalian origins of DNA replication O. Novac, D. Alvarez, G.B. Price and M. Zannis-Hadjopoulos	89
74	A docking site on the C-terminus of ERK-2 is essential for different functionality between ERK-1 and ERK-2 N.A. Hernadez-Rodriguez, M.J. Kortenjann, S.W. Doughty and P.E. Shaw	. 89
75	Use of cerebrospinal-fluid 14-3-3 analysis in the diagnosis of sporadic and variant Creutzfeldt–Jakob disease A.J.E. Green, R.S.G. Knight and R.G. Will	90
76	Approaches to study the structure and function of tomato 14-3-3 protein isoforms A.P. Brown, T.C. McCabe and M.R. Roberts	90

Abstract no.		Page no.
77	Isolation of a member of the 14-3-3 gene family from a marine alga, <i>Fucus vesiculosus</i> J.R. Chaseley, C.A. Morris, B. Nicolaus, J.L. Harwood and P. Kille	90
78	Temporal nuclear translocation of protein kinase C (PKC) isoenzymes during adipocyte differentiation P.R. Webb and N.G. Anderson	90
79	Analysis of 14-3-3 isoforms in the lateral geniculate nucleus in murine brain H.C. Baxter, WG. Liu, S.J.H. Clokie, A. Aitken and J.R. Fraser	91
80	Early changes in protein kinase C and tubulin-α expression in rat liver by phenobarbital P. Pantasri, K.M. Doyle, R. Rapley, R. Hoffman, J.M. Walker, P.G. Lord, M.J. Skehel and K. Kramer	91
81	Characterization of the interaction of Break Point Cluster region (BCR) kinase with 14-3-3 S.J.H. Clokie, K.Y. Cheng, A.H. Peden, S. Mackie and A. Aitken	91
82	Insulin growth factor-1 (IGF-1) induces phosphorylation of two novel residues of FKHR (forkhead in rhabdosarcoma) G. Rena, Y.L. Woods, A.R. Prescott, M. Peggie, T.G. Unterman, M.R. Williams and P. Cohen	, 1 91
віс	OCHEMICAL IMMUNOLOGY GROUP	•
Med	diation and modulation of antibody function	
	Poster Session Time: Tuesday 9 April, 12.30–14.00	
83	Anti-malaria immune effector mechanisms recruited by human IgG ₁ and IgA ₁ monoclonal antibodies	
	R.J. Pleass, D.H. McGuinness, A.A. Holder and J.M. Woof	92
84	Amino acid sequence requirements in the human IgA ₁ hinge for cleavage by streptococcal IgA ₁ proteases B.W. Senior, M.R. Batten, M. Kilian and J.M. Woof	92
85	Chimaeric human antibodies directed against a major surface antigen of Pseudomonas aeruginosa	·
	D.H. McGuinness, R.J. Pleass, B.W. Senior and J.M. Woof	92
86	A solution structural model of human IgA ₂ P.W. Whitty, A. Robertson, M.A. Kerr, J.M. Woof and S.J. Perkins	92
87	A single-domain antibody fragment that stabilizes the native state of two amyloidogenic lysozyme variants and hence prevents aggregation M. Dumoulin, A. Last, D. Canet, L. Wyns, S, Muyldermans, A. Matagne, C. Redfield, C.V. Robinson and C.M. Dobson	93
88	Red blood cells (RBCs) coated with IgG anti-D bind transforming growth factor- β (TGF- β) B.M. Kumpel	93
89	Targeted cytokine delivery to neuroblastoma P.K. Dehal, M.J. Embleton, J.T. Kemshead and R.E. Hawkins	93

Abs	itract no.	Page no.	
MISCELLANEOUS			
	Poster Session Time: Tuesday 9 April, 12.30–14.00		
90	Highly stable single-domain antibody fragments from camelids M. Dumoulin, K. Conrath, F. Meersman, K. Heremans, S. Muyldermans, L. Wyns and A. Matagne	93	
91	Kaempferol metabolism by rat hepatocytes cultured on different collagen substrates M. Kataropoulou, C. Henderson and M.H. Grant	94	
92	Cryopreserved rat hepatocyte monolayers D. Stevenson, C. Morgan, E. Goldie, G. Connel, E. Oliveira and M.H. Grant	94	
93	Role of adrenomedullin (AM) and pro-adrenomedullin N-terminal 20 peptide (PAMP) in osteoblast metabolism S. Papaioannou, S. Kapas, M.C. Meikle and F. McDonald	94	
94	Hepatic haem-oxygenase and oxidative stress during short-term treatment with p-dimethylaminoazobenzene (DAB) E. Gerez, F. Caballero, A. Batlle and E. Vazquez	94	
95	Scrapie spreads from the gastrointestinal tract to the central nervous system (CNS) along autonomic and sensory relays of the peripheral nervous system P.A. McBride, M. Donaldson, J. Oxley and M. Beekes	95	
96	Refolding studies of recombinant prion protein PrP-(90–231) in solution A. Harvey and T.J.T. Pinheiro	95	
97	Binding of prion proteins to lipid membranes and implications for prion conversion J. Kazlauskaite and T.J.T. Pinheiro	95	

Speakers' papers will be published in *Biochemical Society Transactions* volume 30, part 4 (August 2002)