677th Cardiff Meeting

ABSTRACTS

Absti	ract no.		Page no.
TH	E COLWORTH MEDAL LECTURE		
	Time:	Wednesday 17 July, 11.30–12.30	
M1	Pathways for remodelling chromatin T.A. Owen-Hughes		97
SP	EAKER ABSTRACTS		
Struc	cture–Function Studies of the Complement S	System	
	Speaker Session Times:	Tuesday 16 July, 09.00–16.00 Wednesday 17 July, 08.45–17.40	
Al	Structural studies of Factor H family proteins: diseases	on complement, microbes and human	
	P.F. Zipfel		97
A2	Structural studies in C4b-binding protein A. Blom		97
A3	Structure of CR2–C3dg complexes V.M. Holers		97
A4	Three-dimensional structure and flexibility of Complement Activation (RCA) family P.N. Barlow	proteins of the Regulators of	98
A5	Solution structures of complement component S.J. Perkins	ts by scattering and ultracentrifugation	98
A6	Structural biology of Cl G.J. Arlaud		98
A7	Structure—function studies of the C5 converta: M.K. Pangburn	se	98
A8	Structure—function studies of the receptors for P. Gasque	r complement C1q	99
A9	CR1: evolving to the tune of a powerful patho J.P. Atkinson	ogen	99
A10	Structure function of CD46 (membrane cofac virus D. Gerlier	tor protein) and interactions with measles	99
A11	Interactions of CD55 with non-C ligands S. Lea		99
	scribing institutions are encouraged to cop	py and distribute this table of contents	

Abst	ract no.		Page no.
A12	Tailoring anti-complement therapeutics B.P. Morgan		100
A13	Rational design of a complement inhibitor targeting approaches J.D. Lambris	g C3 using NMR and combinatorial	100
A14	Targeting anti-complement agents R.A.G. Smith		100
LIPI	D GROUP/REGULATION OF METABOLISM	I GROUP	
Regu	ılation of Fatty Acid Synthesis		
		Tuesday 16 July, 09.00–16.00 Wednesday 17 July, 08.45–17.40	
Bl	Carbon flow for fatty acid synthesis S. Rawsthorne		100
B2	Regulation of lipid accumulation in oleaginous mic C. Ratledge	ero-organisms	101
В3	Mechanistic diversity and regulation of type II fatty C.O. Rock	y acid synthesis	101
B4	Regulation of fatty acid biosynthesis A.R. Slabas		101
B5	Regulation of mammalian acetyl-CoA carboxylase M.R. Munday		101
B6	Regulation of fatty acid synthesis and degradation D.G. Hardie	by the AMP-activated protein kinase	102
В7	Transcription factors acting on the promoter of the $\mathbf{M.\ Schweizer}$	fatty acid synthase gene	102
B 8	Altering specificity of a <i>Ricinus communis</i> cytochr L. Michaelson	ome b_5 fusion desaturase	102
B9	Gene regulation of mammalian desaturases M.T. Nakamura		102
B10	Yeast desaturases C.E. Martin		103
B11	Environmentally induced regulation of acyl-CoA d A.R. Cossins	esaturase genes	103
B12	Peroxisome-proliferator-activated receptors and the fatty acid metabolism S.A. Smith	e regulation of mammalian	103
B13	The role of sterol-regulatory-element-binding prote J.D. Horton	eins in regulating fatty acid synthesis	103
B14	Factors affecting yield of unusual fatty acids in eng I.A. Graham	gineered oilseeds	104

Contents (continued	I١
COLLECTICS	CONCINC	,,

Abst	ract no.		Page no.
B15	Regulation of fatty acid production in transgenic cr A.J. Kinney	ops	104
RES	EARCH COLLOQUIUM		
Con	nective Tissue		
	Speaker Session Time:	Tuesday 16 July, 09.00–12.25	
C1	Thymosin $\beta 4$ is mechanically regulated in articular E. Blain	cartilage	104
C2	Degradation of articular cartilage superficial zone pmatrix proteases A.R. Jones	proteoglycan (SZP) by	104
C3	Erythropoietin modulates interleukin-1β-induced n synovial fibroblasts	itrite production in rheumatoid	105
C4	S. Baig PACT (protein kinase R-activating protein), the protein (PKR), is up-regulated at the onset of osteoarthritist treatment of chondrocytes		105
C5	S. Gilbert The role of glutamate transporters in bone remodel J. Huggett	ling	105
C6	Recent developments in cartilage research D.R. Eyre		105
C7	Antioxidants decrease cell death in experimentally I.M. Khan	wounded articular cartilage	106
C8	mRNA gene expression patterns in osteochondrosi C.L. Curtis	s dessicans	106
C9	Cysteine mutations of fibrillin-1 in Marfan syndron J.Y. Suk	ne	106
	OUSTRIAL BIOCHEMISTRY AND BIOTECH	NOLOGY GROUP	
	Speaker Session Times:	Wednesday 17 July, 08.45–17.40 Thursday 18 July, 08.45–16.00	
D1	Clinical aspects of food allergy P.S. Papageorgiou		106
D2	Epidemiology of food allergy: children of the 90s J. Golding and K. Northstone	project	107
D3	The role of oral tolerance in food allergy T.T. MacDonald		107
D4	Plant protein families P. Shewry		107

Abst	ract no.		Page no.
D5	Structural aspects of nsLTPs (non-specific lipid trans D. Marion	fer proteins)	107
D6	Clinical importance of nsLTPs R. van Ree		108
D7	Stability of 2S albumin allergens in vitro G.J. Murtagh		108
D8	The stability of diet-derived proteins to pepsin digest G. Burnett	cion and potential allergenicity	108
D9	Solution structure of allergenic 2S albumins M. Rico		108
D10	Structural attributes of the cupins and their role in deplant seed storage globulins E.N.C. Mills	termining the allergenic activity of	109
DII	Pathogenesis-related (PR)-proteins identified as aller K. Hoffmann-Sommergruber	gens	109
D12	The latex-fruit syndrome S. Wagner		109
D13	Industrial dimensions of food allergy R.W.R. Crevel		109
D14	Plant biotechnology and plant food allergens L.R. Beach		110
D15	Lactic acid bacteria for mucosal vaccines and therap S. Hanniffy	y	110
НО	ST COLLOQUIUM		
Biol	ogy of the Intervertebral Disc		
		lednesday 17 July, 08.45–17.40 hursday 18 July, 08.45–16.00	
El	Clinical importance of the intervertebral disc J.C.T. Fairbank		110
E2	Development of the annulus fibrosus J.R. Ralphs		110
E3	Collagen gene expression in intervertebral disc development L.J. Sandell		111
E4	The role of disc cell heterogeneity in determining die T.R. Oegema, Jr	sc biochemistry: a speculation	_111
E5	Aggrecan and small interstitial proteoglycan metabo disc tissue B. Caterson	lism in aged and pathological	111
F (FII
E6	Collagen polymorphisms of the intervertebral disc D.R. Eyre		111

Contents (continued)

Abst	ract no.	Page no.
E7	Elastic tissues of the intervertebral disc J. Yu	112
E8	Mechanobiology of the intervertebral disc J.C. Lotz	112
E9	The role of the physicochemical environment in regulating disc cell behaviour J.P.G. Urban	112
E10	Disc morphology in health and disease S. Roberts	112
E11	The role of proteoglycans in aging, degeneration and repair of the intervertebral disc P.J. Roughley	113
E12	Compartmentalization of the matrix formed by nucleus pulposus and annulus fibrosus cells in an alginate gel E. Thonar	113
E13	Engineering cartilaginous tissues T.E. Hardingham	113
E14	Biology of the intervertebral disc: future directions S. Eisenstein	113
EDL	JCATION GROUP	
Bioc	hemists in the Pursuit of Numeracy	
	Speaker Session Time: Thursday 18 July, 11.40–16.40	
Fl	Maths: bridging the gaps between the haves and the have-nots E.F. Garman	114
F2	A view from across the bridge J.B. Fink	114
F3	Core zero curriculum and the life scientist D. Phoenix	114
F4	Practical statistics for the biosciences S.J.H. Ashcroft	114
F5	Converting biochemical results to clinically meaningful decisions R.G. Jones	115
F6	Towards long life and happiness: the training of numerate pharmacy students J. Barber	115
F7	Diluting the drugs with ignorance J.A. Rees	115

Abst	tract no.	Page no.
MO	LECULAR AND CELLULAR PHARMACOLOGY GROUP	
mRl	NA degradation: an Important Process In Controlling Gene Expression	
	Speaker Session Time: Thursday 18 July, 08.45–16.00	
G1	Involvement of the tristetraprolin (TTP) family of CCCH tandem zinc-finger proteins in mRNA turnover P.J. Blackshear	115
G2	ARE-mediated translational control: complexity and multiple activities of transactivating factors C. Gueydan	116
G3	Control of stability of mRNA of inflammatory response proteins by p38 MAP kinase J. Saklatvala	116
G4	Mechanisms controlling gene expression by MAPKAP kinase-2 and -5 M. Gaestel	116
G5	Half-life in the Fos lane: mechanisms underlying rapid decay of c-fos proto-oncogene transcript AB. Shyu	116
G6	Stress granules: sites of mRNA triage that regulate mRNA stability and translatability N.L. Kedersha	117
G7	Pathways for nuclear mRNA degradation in yeast J. Kufel	117
PC	DSTER ABSTRACTS	
Stru	acture–Function Studies of the Complement System	
	Poster Session Time: Tuesday 16 July, 16.00–18.00	
1	Substrate specificity of MASP-1 (mannan-binding-lectin-associated serine protease-1) K. Hajela and R.B. Sim	117
2	Selection of phage-displayed peptides to human CD55: therapeutic applications in the control of complement activation in disease E.J. Laverty, L.V.J. Clayton and B.P. Morgan	117
3	Characterization of complement protein C1q binding to U937 myelomonocytic cells L.A. Tan, U. Kishore and R.B. Sim	118
4	Ficolin isolation from human serum J.S. Presanis and R.B. Sim	118
5	Activity studies on human complement factor I (FI) X.H. Chen, S.A. Tsiftsoglou, P.Y. Li, D.A. Mitchell, S. Salamanca, Z. Rao and R.B. Sim	1,18
6	Ultracentrifugation of the complex formed between CR2 SCR-1/2 and C3d shows that SCR-1 is extended away from SCR-2 in the complex H.E. Gilbert, J. Hannan, V.M. Holers and S.J. Perkins	148
7	A molecular model for human factor B by constrained scattering modelling J.T. Eaton, D. Chamberlain, J. Hinshelwood, R.B. Sim and S.J. Perkins	119

Abs	tract no.	Page no.
8	Molecular modelling of mutations in the C-terminal domains of human complement factor H: a new insight into haemolytic uraemic syndrome S.J. Perkins and T.H.J. Goodship	119
9	Bacterial expression and membrane-targeting of rat CD59 for use in anti-complement therapy D.A. Fraser, S. Gallagher, C.L. Harris, R.A.G. Smith and B.P. Morgan	119
10	Regulation of expression of porcine regulators of complement on smooth muscle and endothelial cells S. Capey and C.W. van den Berg	119
11	Generation of anti-complement prodrugs for specific delivery of active regulator to disease sites C.L. Harris, C.E. Hughes, I.G. Goodfellow, B. Caterson and B.P. Morgan	120
	ID GROUP/REGULATION OF METABOLISM GROUP ulation of Fatty Acid Synthesis	, -
Ū	Poster Session Time: Wednesday 17 July, 14.50–16.20	
12	Study of wheat transformed with sense and anti-sense lipase genes D.A.N. Edlin, P. Kille, C.M. Saunders, H.D. Jones and J.L. Harwood	120
13	Fatty acid synthesis as a target for novel anti-malarials J.E. Urch, C. Berry and J.L. Harwood	120
14	Signalling pathways in chondrocyte metabolism and the effects of $n-3$ fatty acid supplementation S. Hurst, C.L. Curtis, S.G. Rees, B. Caterson and J.L. Harwood	120
15	Transgenic wheat lines mimicking metabolic responses to the greenhouse effect T. Beacham, D. Edlin, P. Kille and J.L. Harwood	121
16	Differential effects of $n-3$ polyunsaturated fatty acids on tendon versus cartilage metabolism S.G. Rees, C.L. Curtis, B. Caterson and J.L. Harwood	121
17	Effect of AMP-activated protein kinase (AMPK) activation on fatty acid metabolism in epithelia C. Ghioni, K.J. Treharne, A. Mehta, R.E. Olver, S.C. Land and R. Muimo	121
18	Dipalmitoylphosphatidylcholine regulates prostaglandin E_2 (PGE ₂) release in monocytes via effects on peroxisome-proliferator-activated receptor α T.T. Lin, A. Thomas, M. Ahluwalia, S.K. Jackson, A. Tonks, A. Price, K.P. Jones and K. Morris	121
19	Investigation of the role of the glucose-6-phosphate transporter in the control of triacylglycerol synthesis in plant embryos using RNAi P.C. Nield, S. Rawsthorne and M.J. Hills	122
20	Transcription factors acting on the promoter of the fatty acid synthase gene M. Schweizer, K. Roder, L. Zhang and S.S. Wolf	122
21	Distillery liquid waste nutrient uptake by the oleaginous yeast <i>Cryptococcus curvatus</i> K.J. McLeod and A.G.M. Pearson	122
22	A new class of lipid desaturases: identification of the Δ4 sphingoid base desaturase S. Garton, L.V. Michaelson, F. Beaudoin and J.A. Napier	122

Abs	stract no.	Page no.
23	Early changes in protein kinase C and tubulin α expression in rat liver by Wy-14,643 P. Pantasri, R. Rapley, R. Hoffman, P.G. Lord, M.J. Skehel, K. Kramer and K.M. Doyle	123
24	Altering specificity of a <i>Ricinus communis</i> cytochrome b_5 fusion desaturase L.V. Michaelson and J.A. Napier	123
RES	SEARCH COLLOQUIUM	
Con	nnective Tissue	
	Poster Session Time: Tuesday 16 July, 12.20–14.00	
25	mRNA gene expression patterns in osteochondrosis dessicans C.L. Curtis, S.G. Rees, C. Wilson, R. Williams, C. Dent and B. Caterson	123
26	Effect of increasing osmolarity on aggrecan degradation C.E. Hughes, S.D. Wainwright, C.L. Curtis, B. Caterson and J. Urban	123
27	Effect of alteration in H ⁺ -ATPase activity on aggrecanase activity in chondrocytes C.E. Hughes, S.D. Wainwright, C.L. Curtis, A. Tattersall and R. Wilkins	124
28	Hyaluronan and link protein catabolism in tendon S.G. Rees, C.L. Curtis, C.R. Flannery, C.M. Dent and B. Caterson	124
29	Chondrocyte-agarose cultures as a model for the study of cartilage extracellular matrix degradation A.J. Rees, C.B. Little, B. Caterson and C.E. Hughes	124
30	Cysteine mutations of fibrillin-1 in Marfan syndrome J.Y. Suk, P. Whiteman, S. Hutchinson and P.A. Handford	124
31	Thymosin β4 is mechanically regulated in articular cartilage E.J. Blain, D.J. Mason and V.C. Duance	125
32	Degradation of articular cartilage superficial zone proteoglycan (SZP) by matrix proteases A B C. Janes C F. Hughes C P. Little C P. Flannery S D. Weinwright and P. Cetarson	125
33	A.R.C. Jones, C.E. Hughes, C.B. Little, C.R. Flannery, S.D. Wainwright and B. Caterson PACT, the protein activator of protein kinase R (PKR), is up-regulated at the onset of osteoarthritis and by tumour necrosis factor- α (TNF- α) treatment of chondrocytes	125
34	S.J. Gilbert, V.C. Duance and D.J. Mason The role of glutamate transporters in bone remodelling J. Huggett, A. Mustafa, L. O'Neal and D.J. Mason	125 125
35	Matrix deposition by articular cartilage chondrocytes treated with COL9A1 and COL11A1 antisense oligonucleotides A. Vaughan-Thomas, R.D. Young, S.J. Gilbert, G.B.M. Davies, D.J. Mason and V.C. Duance	
36	Erythropoietin modulates interleukin-1β-induced nitrite production in rheumatoid synovial fibroblasts S. Baig, Y. Patel, P.J. Coussons and R. Grant	126
37	Gap junctions and strain response in tendon cells A.D. Waggett, M. Benjamin and J.R. Ralphs	126
38	Identification of a type IX collagen interaction with fibronectin: a molecular bridge in articular cartilage? P. Callender, A. Vaughan-Thomas, D.J. Mason and V.C. Duance	126

Abs	tract no.	Page no.
39	Is glutamate signalling important in rheumatoid arthritis? S.L. Flood, M. Nowell, S. Jones, V.C. Duance and D.J. Mason	127
40	Antioxidants decrease cell death in experimentally wounded articular cartilage I.M. Khan, B. Thomson and C.W. Archer	127
41	Interaction of decorin with type X collagen S. Hancock, A. Kwan and V. Duance	127
42	In vitro type II collagen expression changes over short time periods S.V. Webster, J. Watson, B. Thomson and C.W. Archer	127
43	Differences between sub-populations of bovine articular chondrocytes cultured in a 3-D culture system J.C. Bishop and C.W. Archer	128
44	The effect of strain on hyaluronan metabolism in synovial cells R. Williams, C.W. Archer and G.P. Dowthwaite	128
45	Genotyping chondrocytes in surface zone articular cartilage K. Richardson, S.V. Webster, I. Khan and C.W. Archer	128
	DUSTRIAL BIOCHEMISTRY AND BIOTECHNOLOGY GROUP	
	Poster Session Time: Wednesday 17 July, 14.50–16.20	
46	Stability of 2S albumin allergens in vitro G.J. Murtagh, M. Dumoulin, D.B. Archer and M.J. Alcocer	128
47	The stability of diet-derived proteins to pepsin digestion and potential allergenicity J.A. Robertson, N.M. Rigby, G. Burnett, A. Fillery-Travis and E.N.C. Mills	129
48	Are allergens different from non-allergenic proteins? J.A. Jenkins, S. Griffiths-Jones and E.N.C. Mills	129
49	Development of an immunoassay for investigating the effects of post-harvest treatment on the levels of the major apple allergen, Mal d 1 E.N.C. Mills, N.M. Rigby, K. Waldron, T. Brown, K. Hoffmann-Sommergruber, H. Breiteneder and R. Van Ree	129
ED	UCATION GROUP	
Bio	chemists in the Pursuit of Numeracy	
	Poster Session Time: Thursday 18 July, 10.05–11.40	
50	Transcription factor motif computer searches using binary tree search algorithms B.A. van der Molen, D. Bird, L.G. D'Cruz, S. Gove, C. Baboonian and N.D. Carter	129

J.M. Bailey and K. Nelson

ovine ruminal fluid in vitro

atherosclerosis

J.P. Ryan, J. Mullally, T. Quinn and B.F. Leek

Page no. Abstract no. **MISCELLANEOUS** Poster Session Time: Tuesday 16 July, 16.00-18.00 New aspects of cyclo-oxygenase and signalling inhibitors in arachidonic acid (AA)-51 and platelet activating factor (PAF)-mediated platelet aggregation S.A. Saeed, H. Rasheed, S. Kumar, T.M. Ali, M.U. Butt, M.F. Saud, R. Dhangana, A. Jafri, S. Zehra and A.H. Gilani 130 Differential gene expression in atherosclerotic human coronary arteries: strong evidence for the inflammatory basis of atherosclerosis G. Satterthwaite, S.E. Francis, S.J. Blakemore, C.L. Ward, D.M. Wallace, M. Braddock and D.C. Crossman 130 Increasing the efficiency of protein production by periplasmic expression in Escherichia coli M. Oloomi and S. Bouzari 130 Cytidylyl cyclase activity, enzymic conversion of CTP into cCMP R.H.H.B. Abadi 130 Anti-smallpox drugs and suicide inhibitors of viral polymerases

Speakers' papers will be published in *Biochemical Society Transactions* volume 30, part 6 (November 2002)

Effect of De-Odorase on dry matter degradation of straw, hay and concentrates in

Effect of metabolic syndrome on monocyte activity in diabetics with coronary

P. Tretjakovs, U. Kalnins, I. Dabina, A. Erglis, I. Dinne, A. Jurka and V. Pirags

131

131

131