

Jubilee Medal Lecture

- The Chemical and Biological Versatility of Riboflavin** V. MASSEY 283

Thudichum Medal Lecture

- L-Glutamate as a Central Neurotransmitter: Looking Back** J. C. WATKINS 297

Wellcome Trust Award Medal Lecture

- Integrin Structure** M. J. HUMPHRIES 311

colloquia**671st Meeting, University of Leeds****colloquium: Biotechnology of Extracellular Matrix**

- Potential use of stem cells from bone marrow to repair the extracellular matrix and the central nervous system** D. J. PROCKOP, S. A. AZIZI, D. COLTER, C. DIGIROLAMO, G. KOPEN AND D. G. PHINNEY 341
- Morphogenetic messages are in the extracellular matrix: biotechnology from bench to bedside** A. H. REDDI 345
- Recombinant expression systems for the production of collagen** N. J. BULLEID, D. C. A. JOHN AND K. E. KADLER 350
- Expression of recombinant human type I-III collagens in the yeast *Pichia pastoris*** J. MYLLYHARJU, M. NOKELAINEN, A. VUORELA AND K. I. KIVIRIKKO 353
- Towards a fibrous composite with dynamically controlled stiffness: lessons from echinoderms** J. A. TROTTER, J. TIPPER, G. LYONS-LEVY, K. CHINO, A. H. HEUER, Z. LIU, M. MRKSICH, C. HODNELAND, W. S. DILLMORE, T. J. KOOB, M. M. KOOB-EMUNDS, K. KADLER AND D. HOLMES 357
- Inductive activity of recombinant human growth and differentiation factor-5** R. C. SPIRO, L.-S. LIU, M. A. HEIDARAN, A. Y. THOMPSON, C. K. NG, J. POHL AND J. W. POSER 362

colloquium: Steroid Receptor Co-Activators and the Remodelling of Chromatin

Gene regulation through chromatin remodelling by members of the nuclear receptor superfamily	I. J. MCEWAN	369
Helical repeat of DNA in the nucleosome core particle	R. NEGRI, M. BUTTINELLI, G. PANETTA, V. DE ARCANGELIS, E. DI MAURO AND A. TRAVERS	373
Mechanisms for ATP-dependent chromatin remodelling	I. WHITEHOUSE, A. FLAUS, K. HAVAS AND T. OWEN-HUGHES	376
Co-repressor complexes and remodelling chromatin for repression	A. P. WOLFFE, F. D. URNOV AND D. GUSCHIN	379
Modulation of thyroid hormone receptor silencing function by co-repressors and a synergizing transcription factor	M. LUTZ, A. BANIAHMAD AND R. RENKAWITZ	386
Transcriptional repression by nuclear receptors: mechanisms and role in disease	J. D. LOVE, J. T. GOOCH, L. NAGY, V. K. K. CHATTERJEE AND J. W. R. SCHWABE	390
Structural aspects of agonism and antagonism in the oestrogen receptor	A. C. W. PIKE, A. M. BRZOSOWSKI, J. WALTON, R. E. HUBBARD, T. BONN, J.-Å. GUSTAFSSON AND M. CARLQUIST	396
Androgen-receptor-interacting nuclear proteins	O. A. JÄNNE, A.-M. MOILANEN, H. POUKKA, N. ROULEAU, U. KARVONEN, N. KOTAJA, M. HÄKLI AND J. J. PALVIMO	401
Dynamics of gene targeting and chromatin remodelling by nuclear receptors	G. L. HAGER, T. M. FLETCHER, N. XIAO, C. T. BAUMANN, W. G. MÜLLER AND J. G. MCNALLY	405
Recruitment of chromatin remodelling factors during gene activation via the glucocorticoid receptor N-terminal domain	A. E. WALLBERG, E. M. FLINN, J.-Å. GUSTAFSSON AND A. P. H. WRIGHT	410
Co-operation between protein-acetylating and protein-methylating co-activators in transcriptional activation	M. R. STALLCUP, D. CHEN, S. S. KOH, H. MA, Y.-H. LEE, H. LI, B. T. SCHURTER AND D. W. ASWAD	415

colloquium: Neuropeptides: From Gene Regulation to Protein Processing

Mechanisms of initiation and termination of signalling by neuropeptide receptors: a comparison with the proteinase-activated receptors	K. DEFEA, F. SCHMIDLIN, O. DÉRY, E. F. GRADY AND N. W. BUNNETT	419
Endothelin-converting enzyme-like I (ECE1; 'XCE'): a putative metallopeptidase crucially involved in the nervous control of respiration	O. VALDENAIRE AND A. SCHWEIZER	426
Neuropeptidases regulating gonadal function	A. I. SMITH, C. N. SHRIMPTON, U. M. NORMAN, I. J. CLARKE, A. J. WOLFSON AND R. A. LEW	430

Aminopeptidase A, which generates one of the main effector peptides of the brain renin–angiotensin system, angiotensin III, has a key role in central control of arterial blood pressure	A. REAUX, X. ITURRIOZ, G. VAZEUX, M.-C. FOURNIE-ZALUSKI, C. DAVID, B. P. ROQUES, P. CORVOL AND C. LLORENS-CORTES	435
Protein processing mechanisms : from angiotensin-converting enzyme to Alzheimer's disease	N. M. HOOPER AND A. J. TURNER	441
Complexity of transcriptional control in neuropeptide gene expression; enkephalin gene regulation during neurodevelopment	D. V. AGOSTON AND A. DOBI	446
Protective peptides derived from novel glial proteins	D. E. BRENNEMAN, C. Y. SPONG AND I. GOZES	452
Phosphinic peptide inhibitors as tools in the study of the function of zinc metallopeptidases	V. DIVE, K. LUCET-LEVANNIER, D. GEORGIADIS, J. COTTON, S. VASSILIOU, P. CUNIASSE AND A. YIOTAKIS	455
Conserved roles for peptidases in the processing of invertebrate neuropeptides	R. E. ISAAC, R. J. SMITER, P. STANCOMBE, D. COATES AND A. D. SHIRRAS	460
Exploring the <i>Caenorhabditis elegans</i> and <i>Drosophila melanogaster</i> genomes to understand neuropeptide and peptidase function	D. COATES, R. SMITER AND R. E. ISAAC	464

colloquium: Moving Signals and Molecules Through Membranes

Cyclic-nucleotide- and Ca²⁺/calmodulin-regulated channels in plants: targets for manipulating heavy-metal tolerance, and possible physiological roles	T. ARAZI, B. KAPLAN, R. SUNKAR AND H. FROMM	471
Ca²⁺ signalling in stomatal guard cells	M. R. McAINSH, J. E. GRAY, A. M. HETHERINGTON, C. P. LECKIE AND C. NG	476
Auxin transport: providing a sense of direction during plant development	R. SWARUP, A. MARCHANT AND M. J. BENNETT	481
Mechanism of protein import across the chloroplast envelope	K. CHEN, X. CHEN AND D. J. SCHNELL	485
Novel mechanisms for the targeting of proteins into and across chloroplast membranes	C. WOOLHEAD, A. BOLHUIS AND C. ROBINSON	491
Membrane protein import in yeast mitochondria	K. TOKATLIDIS, S. VIAL, P. LUCIANO, M. VERGNOLLE AND S. CLÉMENTCE	495
Biochemical and molecular approaches to understanding protein import into peroxisomes	A. BAKER, W. CHARLTON, B. JOHNSON, E. LOPEZ-HUERTAS, J. OH, I. SPARKES AND J. THOMAS	499
Organization of transport from endoplasmic reticulum to Golgi in higher plants	A. V. ANDREEVA, H. ZHENG, C. M. SAINT-JORE, M. A. KUTUZOV, D. E. EVANS AND C. R. HAWES	505

colloquium: Efflux Proteins

Expression, purification and properties of multidrug efflux proteins	P. J. F. HENDERSON, C. K. HOYLE AND A. WARD	513
Recognition of multiple drugs by a single protein: a trivial solution of an old paradox	N. VAZQUEZ-LASLOP, E. E. ZHELEZNOVA, P. N. MARKHAM, R. G. BRENNAN AND A. A. NEYFAKH	517
Structure–function relationships in an anion-translocating ATPase	H. BHATTACHARJEE, T. ZHOU, J. LI, D. L. GATTI, A. R. WALMSLEY AND B. P. ROSEN	520