

BIOCHEMICAL SOCIETY TRANSACTIONS



London: The Biochemical Society © 1983

Managing Editor D. C. WATTS

Book Reviews Editor R. EVANS

Contents Volume 11, Part 4, August 1983

603rd MEETING, LIVERPOOL

Colloquium: Adaptive Changes in Cell Membranes

Models for adaptive changes in cell membranes	P. J. QUINN	329
Adaptive changes in membrane-transport systems of hibernators	J. C. ELLORY & J. S. WILLIS	330
Adaptive responses of fish membranes to altered environmental temperature	A. R. COSSINS	332
Adaptation to temperature in bacterial membranes	N. J. RUSSELL	333
Plasma lipids, lipoproteins and cell membranes	J. S. OWEN & M. P. T. GILLETT	336
Adaptive changes in yeast membranes: catabolite repression and oxygen	D. LLOYD, T. G. CARTLEDGE & R. O. JENKINS	339
The effects of light and oxygen on membrane assembly in the photosynthetic bacteria	C. N. HUNTER	340
Adaptive changes in the lipids of higher-plant membranes	J. L. HARWOOD	343
COMMUNICATIONS		347

600th MEETING, OXFORD

Colloquium: Structure and Function of Proteins and Nucleic Acids

Insulin	D. C. HODGKIN, E. DODSON, G. DODSON & C. REYNOLDS	411
Studies on insulin structure and function	Y.-S. ZHANG	417
Some problems in relation to the structure of insulin derivatives	L. DONG-CAI, D. JIN-BI, D. STUART, W. ZHU-LI, R. TODD, Y. JUN-MING & L. MEI-ZHEN	419
A new fluorescent probe for the study of the allosteric properties of D-glyceraldehyde 3-phosphate dehydrogenase	C. L. TSOU, G. Q. XU, J. M. ZHOU & K. Y. ZHAO	425
Structure-function relationships of NAD ⁺ - and NADP ⁺ -dependent dehydrogenases with particular reference to the three-dimensional structure of 6-phosphogluconate dehydrogenase	M. J. ADAMS, S. GOVER, R. W. PICKERSGILL & J. R. HELLIWELL	429
Antigenic variation in influenza virus	A. J. CATON, F. L. RAYMOND, G. G. BROWNLEE, J. W. YEWDELL & W. GERHARD	435

Human antibody genes in normal and abnormal lymphocytes	T. H. RABBITS & J. FLANAGAN	441
Structural analysis of abnormal haemoglobins found in the Chinese population	L. CHIH-CHUAN	442
CRANFIELD MEETING		
Colloquium: Industrial and Medical Applications of Bioelectrochemistry		
Applications of electron transfer between biological systems and electrodes	A. P. F. TURNER, G. RAMSAY & I. J. HIGGINS	445
Novel electrochemical sensors for clinical analysis	C. R. LOWE & M. J. GOLDFINCH	448
Microbial fuel cells	J. L. STIRLING, H. P. BENNETTO, G. M. DELANEY, J. R. MASON, S. D. ROLLER, K. TANAKA & C. F. THURSTON	451
The exploitation of the electrochemistry of proteins	H. A. O. HILL	453
602nd MEETING, LONDON		
Colloquium: Control of the Expression of Genes Coding for Drug-Induced Proteins		
Survey of drug-metabolizing enzymes	D. V. PARKE	457
Variants of human microsomal enzymes	D. S. DAVIES & A. R. BOOBIS	459
Factors controlling the expression of genes coding for drug-metabolizing enzymes	I. R. PHILLIPS, E. A. SHEPHERD, B. R. RABIN, R. M. BAYNEY, S. F. PIKE, A. ASHWORTH & M. R. ESTALL	460
Mono-oxygenase expression in primary foetal-rat hepatocytes in culture	P. KREMERS & J. E. GIELEN	463
The genetic relationships and inducibility of soluble glutathione transferase of the rat liver	B. KETTERER, D. BEALE, J. B. TAYLOR & D. J. MEYER	466
BOOK REVIEWS		469

COMMUNICATIONS

Inhibition of phosphorylase phosphatase by heat-stable inhibitor proteins of dog liver	E. WAELKENS, J. GORIS & W. MERLEVEDE	347
Citrate as an inhibitor and as an activator of malate dehydrogenase	T. DAY, H. K. KING & J. P. DAW	347
Characteristics of a new muscle proteinase	M. F. HARDY, D. MANTLE & R. J. T. PENNINGTON	348
Histidine ammonia-lyase isoenzymes in guinea-pig liver and epidermis	R. L. ALLEN, R. HOPEWELL & C. PROTTEY	349
Histidine ammonia-lyase from kidney of rainbow trout (<i>Salmo gairdnerii</i> Richardson)	R. L. ALLEN, N. J. CLARK & D. A. PHIPPS	350
A simple procedure for the purification of the zymogens and active forms of canine anionic trypsin, cationic trypsin and chymotrypsin	D. A. WILLIAMS, R. M. BATT, & R. J. BEYNON	351
Regulatory and structural interrelationships between adenosyl-cobalamin-dependent ethanolamine ammonia-lyase and the CoA-dependent aldehyde dehydrogenase of <i>Escherichia coli</i>	P. W. JONES & J. M. TURNER	352
The nomenclature of the multiple forms of glutathione S-transferase in the rat	D. SHEEHAN & T. J. MANTLE	353
Isolation of the major cyanogen bromide fragment of the a- and c-subunits of glutathione S-transferases AA and B and ligandin	D. SHEEHAN & T. J. MANTLE	353
Identification of endogenous cytidine 3':5'-cyclic monophosphate	R. P. NEWTON, B. J. SALVAGE & S. G. SALIH	354
Cytidine 3':5'-cyclic monophosphate phosphodiesterase: purification and properties	R. P. NEWTON & S. G. SALIH	355
The effects of ginseng saponins on lactate dehydrogenase activity in the mouse	N. HARPER & A. H. BITTLES	356
Reversal of ketonaemia by vasopressin infusion in the starved rat	A. M. ROFE & D. H. WILLIAMSON	357
The effect of drugs on prostacyclin synthesis	F. McEVOY, M. K. N. PATEL, C. EVANS & C. FELTON	358
Involvement of calmodulin in hormone-stimulated cyclic AMP production and degradation in mouse B16 melanoma	S. W. WALKER, C. MACNEIL, R. M. SHARRARD, L. CAWOOD, B. L. BROWN, S. TOMLINSON & S. S. BLEEHEN	359
Gel electrophoresis of calmodulin purified from B16 melanoma	R. M. SHARRARD, S. W. WALKER, S. MACNEIL, B. L. BROWN, S. TOMLINSON & S. S. BLEEHEN	360
Formation of 10-kilobase DNA replication intermediates	U. LÖNN	361
Inhibition of cell proliferation by human interferons associated with turnover of newly replicated DNA	G. MOORE & M. J. CLEMENS	361
Inhibition of human lymphoblastoid-cell division by interferons and dexamethasone	M. J. CLEMENS & V. J. TILLERAY	362
Inhibition of DNA synthesis in Epstein-Barr-virus-transformed B lymphoblasts by cytosine arabinoside and aphidicolin	S. P. FRICKER & B. E. P. SWOBODA	363
Hepatitis-B-Virus DNA replication in chronic chimpanzee (<i>Pan troglodytes</i>) carriers	M. J. F. FOWLER, J. MONJARDINO, K. N. TSIQUAYE, A. J. ZUCKERMAN & H. C. THOMAS	364
Mitogenic activity in fibronectin preparations	M. J. HUMPHRIES & S. R. AYAD	365
A low-molecular-weight cytoplasmic factor that destabilizes DNA in isolated liver nuclei	C. A. STEWART, A. R. McDONALD & P. S. AGUTTER	365
Characterization of DNA and protein synthesis in <i>Trypanosoma brucei</i> by using inhibitors	S. P. FRICKER & R. A. KLEIN	366
Deoxyribonucleic acid polymerase activities in healthy and cauliflower-mosaic-virus-infected turnip plants	C. M. THOMAS, J. A. BRYANT, V. L. DUNHAM & R. HULL	367
Excision repair of u.v.-light-induced DNA damage in the wild carrot (<i>Daucus carota</i>)	A. C. EASTWOOD & A. G. MCLENNAN	368
Enhanced re-activation of u.v.-light-irradiated adenovirus 2 in HeLa cells after heat shock	S. M. PIPERAKIS & A. G. MCLENNAN	369
Reconstitution of dinucleosomes on restriction fragments	K. J. JOHNSON & A. D. B. MALCOLM	370
A cytoplasmic protein that promotes nucleo-cytoplasmic RNA transport in rat liver	A. R. McDONALD, C. A. STEWART, C. D. GLEED & P. S. AGUTTER	371
Substance P facilitates the release of dopamine in the nucleus accumbens and corpus striatum of rat	I. M. GARDINER & J. S. DE BELLEROCHE	371
The role of neutral endopeptidase in neuropeptide metabolism	R. MATSAS, I. S. FULCHER, A. J. KENNY & A. J. TURNER	372

Effects of ceruletide on neurotransmitter release from rat brain slices	M. J. SHEEHAN & J. S. DE BELLEROCHE	373
Spin-echo proton-nuclear-magnetic-resonance detection of normal and abnormal metabolites in plasma and urine	R. A. ILES, M. J. BUCKINGHAM & G. E. HAWKES	374
¹³ C n.m.r. elucidation of the differing biological activities of folic acid isotopomers and derivatives	S. B. WHITBURN, A. SAHOTA, R. NAYYIR-MAZHIR & J. A. BLAIR	375
Phosphorus-31 nuclear-magnetic-resonance studies of enzyme kinetics in perfused hearts from thyroidectomized rats	A.-M. L. SEYMOUR, J. M. KEOGH & G. K. RADDI	376
Production of leukotriene B ₄ by human pulmonary macrophages	K. A. WADDELL, J. MACDERMONT, C. R. KELSEY, R. K. KNIGHT, P. J. COLE, C. T. DOLLERY & I. A. BLAIR	377
Platelet aggregation and platelet lipid composition in Duchenne muscular dystrophy	D. G. HASSALL, R. A. HUTTON & K. R. BRUCKDORFER	378
Enzymic hydrolysis of ecdysteroid phosphate during embryogenesis in the desert locust (<i>Schistocerca gregaria</i>)	R. E. ISAAC, F. P. SWEENEY & H. H. REES	379
Preparation of radiolabelled purified bovine testicular hyaluronidase	J. S. EARNSHAW, K. S. DODGSON, P. GACESA & A. H. OLAVESSEN	380
An autoanalyser for the determination of uronic acids	M. R. RUSHTON & P. GACESA	381
Changes in the synthesis and distribution of sulphated glycosaminoglycans in human skin fibroblasts upon ascorbate feeding	M. EDWARD & R. F. OLIVER	383
Catabolism of 1-methylpyridinium iodide by <i>Pseudomonas fluorescens</i> : identification of glutaraldehyde as a catabolite	J. R. McDONALD, D. J. COOK, A. J. SHAND & C. HOUGHTON	384
Catabolism of 1-methylpyridinium iodide by <i>Pseudomonas fluorescens</i> : identification of methylamine and glutaric acid as catabolites	J. R. McDONALD, D. J. COOK, A. J. SHAND, C. HOUGHTON & R. B. CAIN	385
Structure of <i>Shigella flexneri</i> serotype 6-R (rough) lipopolysaccharide	D. A. R. SIMMONS	386
Neuromuscular effects of intravenous anaesthetics (althesin and etomidate)	F. A. WALI	387
The influence of plant growth temperature on the lipid/protein ratio of chloroplast thylakoid membranes	D. J. CHAPMAN, P. A. MILLNER & J. BARBER	387
Heat stress induces non-bilayer lipid structures in chloroplast membranes	K. GOUNARIS, W. P. WILLIAMS & P. J. QUINN	388
The effect of thermal adaptation on the phase-properties of the membrane lipids of <i>Anacystis nidulans</i>	D. A. MANNOCK & W. P. WILLIAMS	389
Phospholipid metabolism in rye roots in warm and cool conditions	A. J. KINNEY, D. T. CLARKSON & B. C. LOUGHMAN	390
Seasonal changes in the concentrations of thyroxine and its transport proteins in sheep plasma	D. J. HEAF, W. Y. J. CHEN, J. CARROLL, D. A. R. DAVIES & J. GLOVER	391
The effect of photoperiod on thyroxine transport in Japanese quail	W. Y. J. CHEN, D. J. HEAF & J. GLOVER	392
Leakage of insulin-degrading activity from rat liver cells in suspension and primary monolayer culture	W. R. CARPENTER, C. I. POGSON, K. J. O'CONNOR & N. R. LAZARUS	393
The effect of trace metals on lipid metabolism in the brown alga <i>Fucus serratus</i>	K. L. SMITH & J. L. HARWOOD	394
The development of microsomal lipid peroxidation in the rat liver	S. FAIRHURST & A. A. HORTON	395
Characterization of components at different stages during solubilization of rat glomerular basement membrane with detergents under reducing conditions	S. A. TAYLOR & R. G. PRICE	396
Analysis of human intestinal microvillus membranes by two-dimensional electrophoresis	P. W. PEMBERTON, R. HOLMES & R. W. LOBLEY	397
Substrate utilization by the stomach of control and pentagastrin-stimulated rats <i>in vivo</i>	N. G. ANDERSON & P. J. HANSON	398
Possible role of the macrophage surface mannose receptor in initiation of lysosomal enzyme secretion	J. L. BODMER & R. T. DEAN	399
The role of oxygen as a substrate inducer of cytochrome P-450 in <i>Saccharomyces cerevisiae</i> , and its opposing influence through enzyme degradation	A. BLATIAK, D. J. KING & A. WISEMAN	400
Optimization of culture conditions for yield of cytochrome P-450 in <i>Saccharomyces cerevisiae</i>	J. SALIHON, M. A. WINKLER & A. WISEMAN	401

CONTENTS

v

Recovery of microsomal cytochrome <i>P-450</i> from <i>Saccharomyces cerevisiae</i> using poly(ethylene glycol) precipitation	A. M. SADLER, M. A. WINKLER & A. WISEMAN	402
Changes in cyclic AMP concentration during diauxic growth of <i>Saccharomyces cerevisiae</i> (baker's yeast) on glucose medium	D. J. BIRCH & J. M. HASLAM	403
Colchicine, cholera toxin, prostaglandin E ₁ and cyclic AMP accumulation in normal, malignant and hybrid cell lines	A. M. WINSKILL & S. R. AYAD	404
The uptake of fibronectin or fibronectin degradation products by the nuclei of cultured cells	C. M. SAVILL & S. R. AYAD	405
The guinea-pig enterocyte as a model to investigate gene expression: differential expression of lactase activity during development	J. C. WALL, G. McALLISTER, J. HERMON-TAYLOR & D. S. BAILEY	406
The guinea-pig enterocyte as a model to investigate gene expression: molecular cloning of guinea-pig enterocyte RNA	D. S. BAILEY, D. O. ROBINSON & J. HERMON-TAYLOR	408