

# BIOCHEMICAL SOCIETY TRANSACTIONS



London: The Biochemical Society © 1981

Managing Editor D. C. WATTS

Book Reviews Editor R. EVANS

---

## Contents Volume 9, Part 4, August 1981

---

<b>THE SEVENTEENTH COLWORTH MEDAL LECTURE</b>		
Molecular mechanisms of chromatin assembly	R. A. LASKEY	263
<b>594th MEETING, DUBLIN</b>		
<b>Colloquium: Monomeric NAD(P)-Linked Oxidoreductases</b>		
Structure and function of bacterial and mammalian dihydrofolate reductases	D. STONE	271
Studies on the active site of pig kidney aldehyde reductase	T. G. FLYNN, C. GALLERNEAULT, D. FERGUSON, J. A. CROMLISH & W. S. DAVIDSON	273
Some kinetic and physical properties of biliverdin reductase	O. PHILLIPS & T. J. MANTLE	275
Structure and function of octopine dehydrogenase of <i>Pecten maximus</i> (great scallop)	A. OLOMUCKI	278
Functions of aldehyde reductases	A. J. TURNER & S. R. WHITTLE	279
Active-site residues of saccharopine dehydrogenase (NAD <sup>+</sup> , lysine-forming) from baker's yeast	M. FUJIOKA	281
<b>Colloquium: A Reappraisal of Affinity Chromatography</b>		
Biospecific binding to immobilized small ligands in affinity chromatography	P. O'CARRA	283
Biospecific chromatography with macro-ligands	G. B. IRVINE & R. F. MURPHY	284
Novel affinity techniques	P.-O. LARSSON & K. MOSBACH	285
Biospecific desorption from mixed-function columns	R. J. YON	287
Triazine-dye affinity chromatography	T. ATKINSON, P. M. HAMMOND, R. D. HARTWELL, P. HUGHES, M. D. SCAWEN, R. F. SHERWOOD, D. A. P. SMALL, C. J. BRUTON, M. J. HARVEY & C. R. LOWE	290
<b>Communications</b>		
Multiple forms of aldehyde reductase from ox kidney	A. K. DALY & T. J. MANTLE	295
The identity of the c-subunits of glutathione <i>S</i> -transferases AA and B	N. C. SCULLY & T. J. MANTLE	296
Strombine [ <i>N</i> -(carboxymethyl)-D-alanine]dehydrogenase and alanopine [ <i>meso-N</i> -(1-carboxyethyl)alanine] dehydrogenase from the mussel <i>Mytilus edulis</i> L.	P. R. DANDO	297
Characterization of the Adh <sup>f</sup> and Adh <sup>us</sup> Alleloenzymes of <i>Drosophila melanogaster</i> (fruitfly) alcohol dehydrogenase	A. RETZIOS & D. R. THATCHER	298
Chemical modification of cysteine and histidine residues in <i>Drosophila</i> (fruitfly) alcohol dehydrogenase	D. R. THATCHER	299
A proposed kinetic mechanism for octopine dehydrogenase from <i>Pecten maximus</i> L.	M.-O. MONNEUSE-DOUBLET & A. OLOMUCKI	300

Purification with hydrophobic interaction chromatography and properties of two bilirubin-binding proteins and other glutathione <i>S</i> -transferases from rat liver cytosol	J. A. T. P. MEUWISSEN & M. ZEEGERS	302
Effect of the anti-psychotic drug Haloperidol on mitochondrial calcium transport	J. J. A. HEFFRON & E. J. HARRIS	303
Rotational fluorescence depolarization of sarcoplasmic-reticulum membranes	J. J. BIRMINGHAM & J. J. A. HEFFRON	304
Maintenance of a differentiated thyroid-cell culture system	A. MURPHY, C. MOTHERSILL, M. K. O'CONNOR, J. F. MALONE & J. K. TAAFFE	305
A role for lactate in the differentiation of thyroid cells in culture?	C. MOTHERSILL, A. MURPHY & M. K. O'CONNOR	306
Lactate production under various cell-culture conditions	C. B. SEYMOUR & C. MOTHERSILL	307
Is protein function regulated by the reversible incorporation of sulphur?	M. P. COUGHLAN	307
Purification of deoxyribonuclease 1b from <i>Aspergillus nidulans</i>	G. R. CAMPBELL, M. SHIKARA & F. G. WINDER	308
Fractionation of DNA polymerase I from <i>Mycobacterium smegmatis</i>	F. G. WINDER, S. HEMMENS & F. HOGAN	310
Kinetic analysis of the binding of [ <sup>3</sup> H]prostacyclin to a neuronal receptor	J. MACDERMOT & I. A. BLAIR	311
Affinity changes of prostacyclin-receptor interactions mediated by magnesium and other Group-2A cations	J. MACDERMOT, I. A. BLAIR & T. M. CRESP	312
Analysis of Mg <sup>2+</sup> -dependent changes in the proton chemical shifts observed in the <sup>1</sup> H n.m.r. spectra of prostaglandins	I. A. BLAIR, J. MACDERMOT & T. M. CRESP	313
Biochemical actions of sodium valproate	S. R. WHITTLE & A. J. TURNER	313
Amine metabolism in the brains of stress-susceptible pigs	A. M. WHEATLEY, M. E. BARDSLEY, J. M. MCCRODDEN, K. F. TIPTON & J. V. MCLOUGHLIN	314
Effect of a neuron-specific antiserum on the survival and maturation of neural cells in culture	C. M. REGAN, E. MEIER & R. BALAZS	315
The effects of shark liver arginase on the growth of cells in culture	C. SCALLAN, M. CLYNES & P. JOYCE	317
Control of calcium uptake by <i>Drosophila</i> mitochondria	N. O'BYRNE-RING, A. R. KRALL & E. J. DUKE	317
DNA-binding proteins in human urine	K. K. SHARMA & J. A. HILL	318
Partial proteolysis of cattle and frog rhodopsins	S. A. H. AL-MAHDAWI, C. A. CONVERSE & A. COOPER	319
A radial-diffusion assay for serum lipase	C. A. CONVERSE, A. COOPER & M. A. NUTLEY	320
Fractionation of ADP-ribosylated <i>in vitro</i> nuclear proteins by using pyridyl disulphide-Sephadex chromatography	M. R. PURNELL, P. R. STONE & W. J. D. WHISH	321
Multiple forms of glucosaminidase in mammalian skeletal muscle	J. A. KHAN & M. H. R. LEWIS	322
An enzyme electrode for acetaldehyde determination	K. F. TIPTON, J. M. MCCRODDEN & M. E. BARDSLEY	324
Competition between electron acceptors in membrane vesicles of <i>Paracoccus denitrificans</i>	R. JONES, J. O. D. COLEMAN & F. R. WHATLEY	324
Preparation of Factor IX concentrate for therapeutic use	C. J. CUNNINGHAM	326
Amino acid sequence of ferredoxin from the cyanobacterium <i>Chlorogloeopsis fritschii</i>	Y. TAKAHASHI, T. HASE, H. MATSUBARA, G. N. HUTBER & L. J. ROGERS	327
Comparison of plasma glycoproteins from normal controls, cystic-fibrosis patients and cystic-fibrosis heterozygotes	F. HALLINAN & E. TEMPANY	328
Fractionation of human parotid salivary proteins by preparative isoelectric focusing	M. EAGLETON, F. HALLINAN & E. TEMPANY	329
Specific labelling of insoluble elastin with tetraphenylporphin sulphionate	R. J. ELLIOTT	329
Enzyme-immunoassay of human $\alpha$ -foetoprotein	M. I. HALLIDAY & G. B. WISDOM	330
Enzyme-immunoassay of autoantibodies to thyroglobulin	J. M. GALLAGHER & G. B. WISDOM	331
The effect of $\beta$ -adrenoreceptor blockade on the glycogenolytic response to behavioural stress in bovine skeletal muscles	J. M. McVEIGH, V. P. J. TARRANT & M. G. HARRINGTON	332
The effect of frozen storage of unground and ground muscle on the activity of lysosomal proteinases	A. McGRATH, M. HENAHAN & M. G. HARRINGTON	333
Crotonic acid: a major inhibitor of reticulo-ruminal motility in sheep	J. P. RYAN	334
Cholesterol release after bile-salt treatment of gastric and intestinal mucosal preparations from the rat	A. McMAHON & D. R. HEADON	335
Zn <sup>2+</sup> -chelate chromatography of human fibrogen	M. F. SCULLY & V. V. KAKKAR	335
Purification of human clotting Factor XII by Zn <sup>2+</sup> -chelate chromatography	K. WEERASINGHE, M. F. SCULLY & V. V. KAKKAR	336

CONTENTS

iii

**592nd MEETING, LONDON**

**Colloquium: Regulation of Ketone-Body Metabolism**

Regulation of ketogenesis in the liver	P. A. MAYES & M. E. LAKER	339
Regulation of hepatic fatty acid oxidation in the rat during feeding and starvation	J. D. MCGARRY, M. E. BOYD & D. W. FOSTER	341
Lipid metabolism during starvation: hepatic energy balance and ketogenesis	O. E. OWEN & V. L. SCHRAMM	342
Ketone-body metabolism during the neonatal period	J. R. GIRARD, P. FERRÉ, L. EL MANOUBI & J.-P. PÉGORIER	344
Utilization of ketone bodies by mammalian tissues	D. H. WILLIAMSON	346
Ruminant ketosis	G. D. BAIRD	348

**BIOCHEMICAL REVIEW**

Migraine: A biochemical headache?	M. CROOK	351
-----------------------------------	----------	-----

**BOOK REVIEWS**

359