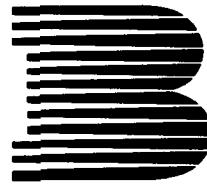


# BIOCHEMICAL SOCIETY TRANSACTIONS



London: The Biochemical Society © 1982

Managing Editor D. C. WATTS

Book Reviews Editor B. MORELAND

---

## Contents Volume 10, Part 6, December 1982

---

### 601st MEETING, ABERDEEN

#### COMMUNICATIONS

441

### 599th MEETING, BIRMINGHAM

#### Colloquium: The *Escherichia coli* Respiratory Chain

Molecular genetic aspects of the succinate: Fumarate oxidoreductase of <i>Escherichia coli</i>	S. T. COLE & J. R. GUEST	473
Independent pathways for the anaerobic reduction of nitrite to ammonia by <i>Escherichia coli</i>	J. A. COLE	476
<i>Escherichia coli</i> formate-to-nitrite respiratory chains: genetic analysis	B. A. HADDOCK & M.-A. MANDRAND-BERTHELOT	478
<i>Escherichia coli</i> formate to nitrite respiratory pathway: structural analysis	D. BOXER, A. MALCOLM & A. GRAHAM	480
The organization of the quinone pool	P. R. RICH	482
The diffusional mobility of proteins in the cytoplasmic membrane of <i>Escherichia coli</i>	P. B. GARLAND, K. JOHNSON & G. R. REID	484
The reactions of terminal oxidases in <i>Escherichia coli</i> K12 with oxygen and carbon monoxide at sub-zero temperatures	R. K. POOLE	485

### 600th MEETING, OXFORD

#### Colloquium: Catecholamine Receptors

$\alpha$ -Adrenoceptors and hypertension	J. L. REID & C. A. HAMILTON	489
Catecholamine stimulation of steroidogenesis in Leydig cells	B. A. COOKE, M. GOLDING & C. J. DIX	491
Restoration of $\beta$ -adrenergic responsiveness in desensitized cells	D. M. SALMON & D. SCHULSTER	493
Activation and inhibition of adenylate cyclase by hormones	S. BRAUN, A. M. TOLKOVSKY, M. L. STEER, H. A. LESTER & A. LEVITZKI	496
$\alpha$ - and $\beta$ -adrenoceptor coupling to adenylate cyclase	S. R. NAHORSKI	498

#### COMMUNICATIONS

501

#### BOOK REVIEWS

541

#### INDEXES

Author Index	545
Subject Index	549

## COMMUNICATIONS

Amino acid sequence of a CNBr fragment of human complement component C <sub>1s</sub> containing the active-site serine residue	P. E. CARTER, B. DUNBAR & J. E. FOTHERGILL	441
Human skeletal-muscle aldolase: Cyanogen bromide cleavage and partial amino acid sequence	P. S. FREEMONT, B. DUNBAR & L. A. FOTHERGILL	442
Comparison by model building of the structure of yeast monophosphoglycerate mutase with human diphosphoglycerate mutase	N. W. HAGGARTY & L. A. FOTHERGILL	444
Hydroxylamine cleavage of cat skeletal-muscle pyruvate kinase: Separation of the fragments and N-terminal sequence analysis	S. M. MCALEESE, C. G. HOAR, B. DUNBAR & L. A. FOTHERGILL	444
Separation of an α-3-L-fucosyltransferase from the blood-group-9Le gene-specified α-3/4-L-fucosyltransferase in human milk	P. H. JOHNSON & W. M. WATKINS	445
A rabbit antibody to the blood-group-A-gene-specified α-3-N-acetylgalactosaminyltransferase	G. A. COOK, P. GREENWELL & W. M. WATKINS	446
Multiple forms of hepatic cytochrome P-450: Catalytic activity of highly purified haemoprotein induced by clofibrate pre-treatment in the rat	G. G. GIBSON, P. P. TAMBURINI, H. MASSON & C. IOANNIDES	447
Electrophoretic evidence for the presence of inter- and intra-molecular disulphide bonds in horse spleen apo ferritin	M. PATERSON, R. R. CRICHTON & C. F. A. BRYCE	448
The stability of oxaloacetate on anion-exchange chromatography	M. LEONARD, R. A. JOHN & C. F. A. BRYCE	450
Comparative studies on glutathione peroxidase from the liver of rainbow trout ( <i>Salmo gairdneri</i> )	J. G. BELL & C. B. COWEY	451
Unusual solvent isotope effects on the glucokinase reaction	D. POLLARD-KNIGHT & A. CORNISH-BOWDEN	451
Responses of latent microsomal UDP-glucuronyltransferases to trypsin	J. O. ONAH, A. B. GRAHAM & G. C. WOOD	452
Studies on the small nuclear ribonucleoprotein particles that act as autoantigens in rheumatic disease	M. R. SADAIE, T. Y. JING & A. J. MACGILLIVRAY	453
Observations on a change in the low-molecular-weight cytoplasmic RNA in the brains of scrapie-affected mice	L. BOUNTIF & G. D. HUNTER	454
The effects of oestradiol-17β on the synthesis of ribosomes of the immature rat uterus	R. E. MULLER & J. T. KNOWLER	455
Soluble and bound forms of DNA methylase in mouse cell nuclei	M. QURESHI, R. L. P. ADAMS & R. H. BURDON	455
Increased uptake of polyamines by baby-hamster kidney cell (BHK-21/C13) treated with α-methylornithine	H. M. WALLACE, M. A. L. MELVIN & H. M. KEIR	456
The effect of polyamines on the synthesis of poly(ADP-ribose) in permeabilized mammalian cells	A. M. GORDON, H. M. WALLACE, H. M. KEIR & C. K. PEARSON	457
An immunological and biochemical analysis of human thyroglobulin	A. C. D. BROWN, R. B. GOUDIE & A. M. CAMPBELL	458
Rocket-gel radioimmunoassay of antibodies to membrane proteins: a test for possible autoimmunity in retinitis pigmentosa	C. A. CONVERSE & M. A. NUTLEY	458
Inhibition of specific Kupffer-cell clearance of carcinoembryonic antigen from the serum of rats with bile-duct obstruction	P. THOMAS, P. F. O'NEIL & N. ZAMCHECK	459
Hepatic cadmium-binding proteins from rainbow trout ( <i>Salmo gairdneri</i> Richardson)	D. G. THOMAS, J. KAY, J. F. DE L. G. SOLBE & A. CRYER	460
Iron-binding components in the digestive gland of the queen scallop, <i>Chlamys opercularis</i> (L.)	R. W. KEATCH, P. T. GRANT, S. G. GEORGE & T. L. COOMBS	461
A high-molecular-weight fibre-forming protein isolated from chicken skeletal muscle	G. J. RUCKLIDGE	462
Fatty acid synthesis in <i>Calanus finmarchicus</i>	R. H. J. SCHOFIELD, I. P. WILLIAMSON, & J. R. SARGENT	463
The use of radiolabelled very-low-density lipoprotein and apolipoprotein C to estimate sialidase activity in human serum and various rat tissues	A. P. CORFIELD, C. H. BOLTON & D. TURNER	464
Control of butane-2,3-diol formation in <i>Klebsiella aerogenes</i>	F. M. THOMSON & I. R. BOOTH	465
Evidence for K <sup>+</sup> cycling leading to ΔpH generation in <i>Escherichia coli</i>	R. G. KROLL & I. R. BOOTH	466
Proline transport in <i>Escherichia coli</i>	L. M. D. STEWART & I. R. BOOTH	467
The mechanism of action of a direct electric current on protein synthesis and on ATP production in rat skin	N. CHENG, M. J. HOOGMARTENS, J. C. MULIER, W. M. SANSEN & W. DE LOEKER	468

The coupling of pH gradient and transmembrane potential gradients to electric charge transfer in a biological conduction system	N. CHENG, J. PRENEN, E. CARMELIET, M. J. HOOGMARTENS, J. C. MULIER, W. M. SANSEN & W. DE LOECKER	469
The effects of various metabolic inhibitors and substrates on the maintenance of surface pH <i>in vitro</i> of rat proximal jejunum	J. A. BLAIR, M. E. HILBURN, M. L. LUCAS & H. M. SAID	470
Computer graphics in rational anti-cancer drug design	S. A. ISLAM, R. KURODA, S. NEIDLE, J. R. BROWN, B. M. GANDECHA & L. H. PATTERSON	501
Comparative investigations of the action of mimosine on nucleic acid synthesis in Ehrlich ascites-tumour cells	S. ITZHAKI & P. R. ABDULLA	502
Resensitization of drug-resistant S180 tumour cells with ergotamine	G. R. N. JONES, S. MILLER & P. SCOBIE-TRUMPER	502
Effect of L-methioninase on precursor incorporation into normal and leukaemic haemopoietic cells in short-term culture	M. J. TISDALE, G. W. JACK & S. ERIDANI	504
Protein-bound daunorubicin as an agent for cancer therapy	G. MELINO, P. HAZARIKA, P. ELLIOTT, J. R. HOBBS & K. B. COOKE	505
A four-day method <i>in vitro</i> for the prediction of tumour response to cytotoxic drugs in chronic lymphocytic leukaemia and other tumours	A. G. BOSANQUET, M. C. BIRD & E. D. GILBY	505
<sup>31</sup> P-nuclear-magnetic-resonance spectra of tumours and muscle in the anaesthetized mouse	A. N. STEVENS, G. E. ADAMS, R. E. GORDON, J. R. GRIFFITHS, R. A. ILES & P. W. SHELDON	507
Diurnal variation in the toxicity of methotrexate in the rat	J. ENGLISH, G. W. AHERNE & V. MARKS	508
Acronycine inhibition of the stimulation of protein synthesis in pig lymphocytes activated by phytohaemagglutinin	B. KENNEDY & J. E. KAY	509
Prostacyclin receptors of a neuronal somatic hybrid are desensitized by carbacyclin	P. J. LEIGH, I. A. BLAIR & J. MACDERMOT	510
Amino sugar inhibition of platelet aggregation	N. J. SCOTT, J. R. HARRIS & A. E. BOLTON	510
Cytosine arabinoside: pharmacokinetics following different routes of administration	E. PIAILL, M. SLEVIN, G. W. AHERNE, A. JOHNSTON, T. A. LISTER & V. MARKS	512
Metabolic encounters between isolated human neutrophil leucocytes, urate crystals and colchicines	R. E. BERNSTEIN	513
Effect of nitrofurans on isolated and viable human blood granulocytes and guinea-pig alveolar macrophages	R. E. BERNSTEIN	514
The effect of gentamycin and cefuroxime on the stability of rat kidney lysosomes <i>in vitro</i>	I. G. COWELL, S. NOORAZAR & D. T. PLUMMER	515
Effects of dietary fats in the fatty acid composition of rat intestinal mucosa and benzo[ <i>a</i> ]pyrene metabolism	J. D. GOWER & E. D. WILLS	516
Variation of cimetidine sulphoxidation in the developing guinea-pig	R. H. WARING & P. B. WOOD	517
The simultaneous analysis of prostanoids in biological fluids by combined capillary column gas chromatography and negative-ion chemical-ionization mass spectrometry	K. A. WADDELL, S. E. BARROW, C. ROBINSON, M. A. ORCHARD, C. T. DOLLERY & I. A. BLAIR	518
Detoxification of the putative reactive metabolite of paracetamol with glutathione	A. C. HUGGETT & I. A. BLAIR	519
Free radicals as mediators of kanamycin ototoxicity	J. J. MILLER, G. R. BOCK, P. MOORJANI & G. K. YATES	520
Plasma catecholamine concentrations in the newborn rat during the first six postnatal hours	J. M. CUEZVA & M. S. PATEL	521
Stability of transformed oestrogen receptor from human endometrium and breast carcinoma	S. M. HYDER & R. E. LEAKE	522
The effect of insulin on the electrophoretic mobility of rat thymocytes	P. M. J. MCSHEEHY, M. C. PERRY & D. T. PLUMMER	523
Progesterin binding in nuclear-envelope-enriched fractions of deciduomal cell nuclei	P. M. A. CHIKUSU & B. GREEN	524
Purification of M <sub>4</sub> lactate dehydrogenase from rat liver by using biospecific desorption from 10-carboxydecylamino-Sepharose	P. KYPRIANOU & R. J. YON	525
A comparison of the interaction of 10-carboxydecylamino-Sepharose and of Cibacron Blue-Sepharose with rat liver lactate dehydrogenase	P. KYPRIANOU & R. J. YON	526
Immobilization of chloroplasts, algae and hydrogenases in various solid supports for the photoproduction of hydrogen	K. K. RAO, A. MUALLEM, D. L. BRUCE, G. D. SMITH & D. O. HALL	527
Inhibition of highly purified benzo[ <i>a</i> ]pyrene hydroxylase from <i>Saccharomyces cerevisiae</i> by cytochrome P-448 binding compounds and by flavonoids	D. J. KING, M. R. AZARI & A. WISEMAN	528
Studies on the differences in thermal stability and critical temperature of cytochrome P-448 from <i>Saccharomyces cerevisiae</i> in microsomal, solubilized and highly purified form	M. R. AZARI, D. J. KING & A. WISEMAN	529

Spectral binding studies on the interaction of some putative substrates with highly purified cytochrome <i>P-448</i> from <i>Saccharomyces cerevisiae</i>	M. R. AZARI, D. J. KING & A. WISEMAN	530
ATPases associated with Golgi membranes from lactating rat mammary gland: high-affinity requirement for $\text{Ca}^{2+}$ and $\text{Mg}^{2+}$ ions	R. A. EASOM, D. W. WEST & R. A. CLEGG	531
Further studies on the adenosine diphosphatase activity of rat liver mitochondria	D. J. MONTAGUE, T. J. PETERS & H. BAUM	532
Regulation of lysosomal $\alpha$ -mannosidase in macrophages	V. A. GREENAWAY, S. NAISH, W. JESSUP & R. T. DEAN	533
A comparison of the mechanism of the oxygenation of quercetin with that of haem	V. RAJANANDA & S. B. BROWN	534
Subcellular localization of leucine aminopeptidase in rabbit polymorphonuclear leucocytes	G. P. SMITH, R. MACGREGOR & T. J. PETERS	535
Functional hydrophobic binding area in monoamine oxidase (bovine plasma)	B. H. NICHOLSON & S. P. BATRA	536
Modification of beef heart $F_1$ -ATPase by 1-dimethylamino-naphthalene-5-sulphonyl chloride	F. J. FERNÁNDEZ-BELDA, J. A. TERUEL, E. MARTÍN & J. C. GÓMEZ-FERNÁNDEZ	537
Observations on the mechanism of activation of aconitase	R. R. RAMSAY & A. S. FRIEND	538
A prolonged slow linear phase in the release of previously endocytosed tracers from cultured human fibroblasts	R. T. DEAN & W. JESSUP	539
The reaction of 9-azidoacridine with bovine pancreatic ribonuclease	S. P. BATRA & B. H. NICHOLSON	540