Molecular Aspects
Contents of Volume 137, No. 3, 1974

| Nomenclature for vitamins B-6 and related compounds. Recommendations (1973). By IUPAC-IUB Commission on Biochemical Nomenclature (CBN) | PAGE 417 |
| Proteins | PAGE 469 |
| An amino acid sequence in the active site of lipoamide dehydrogenase from pig heart. By J. P. Brown & R. N. Perham | 505 |
| The organization of the major protein of the human erythrocyte membrane. By D. H. Boxer, R. E. Jenkins & M. J. A. Tanner | 531 |
| The binding of sodium dodecyl sulphate to bovine serum albumin at high binding ratios. By G. Allen | 575 |
| Differential anion effects on thermal stability of collagen in the dispersed and aggregated states (Short Communication). By A. E. Russell | 599 |
| Nucleic Acids | PAGE 443 |
| Studies on the form and synthesis of messenger ribonucleic acid in the rat ventral prostate gland, including its tissue-specific stimulation by androgens. By W. I. P. Mainwaring, P. A. Wilce & A. E. Smith | 443 |
| Chromatography of transforming deoxyribonucleic acid on methylated albumin and by gel filtration. By G. R. Barker & P. Hodges | 543 |
| Carbohydrates | PAGE 449 |
| The type-specific substance from Pneumococcus type 33B (Short Communication). By M. J. Watson | 449 |
| Small Molecules | PAGE 477 |
| Porphyrins in egg shells (Short Communication). By T. K. With | 477 |
| Enzymology | PAGE 489 |
| Properties and substrate specificity of some reactions catalysed by a short-chain fatty acyl-coenzyme A synthetase from seeds of Pinus radiata. By O. A. Young & J. W. Anderson | 423 |
| The enzymology of short-chain fatty acyl-coenzyme A synthetase from seeds of Pinus radiata. Kinetic studies and a proposed reaction mechanism. By O. A. Young & J. W. Anderson | 435 |
| Curves of ligand binding. The use of hyperbolic functions for expressing titration curves. By H. B. F. Dixon | 443 |
| myo-Inositol dehydrogenase(s) from Acetomonas oxydans. Optimization of conditions for solubilization of membrane-bound enzyme. By W. J. Criddle, J. C. Fry & M. M. Keaney | 449 |
| The mechanism of phosphoglucomutase from Micrococcus lysodeikticus. By J. B. Clarke & H. G. Britton | 453 |
| Preparation and properties of a phosphoenzyme from the phosphoglucomutase of Micrococcus lysodeikticus. By J. B. Clarke, M. Birch & H. G. Britton | 463 |
| The purification and specificity of a neutral endopeptidase from rabbit kidney brush border. By M. A. Kerr & A. J. Kenny | 477 |
| The molecular weight and properties of a neutral metallo-endopeptidase from rabbit kidney brush border. By M. A. Kerr & A. J. Kenny | 489 |
| Regulation of muscle phosphorylase b kinase activity by inorganic phosphate and calcium ions. By B. Sacktor, N.-C. Wu, O. Lescure & W. D. Reed | 535 |
The purification of bovine cathepsin B1 and its mode of action on bovine collagens.
By D. J. Etherington 547

Amino acid sequence of a peptide containing the active cysteine residue of histidine ammonia-lyase.
By H. Hassall & A. K. Soutar 559

Affinity labelling of proteinases with trypsin specificity by peptides with C-terminal lysine chloromethyl ketone.
By J. R. Coggins, W. Kray & E. Shaw 579

By S. A. Cockle 587

Intermolecular Organization
By A. B. Graham, B. G. Woodcock & G. C. Wood 567

Index 607
The following papers appeared in the last issue of the Biochemical Journal

**Cellular Aspects**

**Contents of Volume 138, No. 2, 1974**

<table>
<thead>
<tr>
<th>Biosynthesis and Degradation</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fate of corticotrophins in an isolated adrenal-cell bioassay and decrease of peptide breakdown by cell purification. By H. P. J. Bennett, G. Bullock, P. J. Lowry, C. McMartin &amp; J. Peters</td>
<td>185</td>
</tr>
<tr>
<td>Citrulline synthesis in rat tissues and liver content of carbamoyl phosphate and ornithine. By L. Raijman</td>
<td>225</td>
</tr>
<tr>
<td>Sterol biosynthesis in the free-living nematode <em>Panagrellus redivivus</em>. By J. D. Willett &amp; W. L. Downey</td>
<td>233</td>
</tr>
<tr>
<td>Isotope-dilution analysis of rate-limiting steps and pools affecting the incorporation of thymidine and deoxycytidine into cultured thymus cells. By D. A. Sjostrom &amp; D. R. Forsdyke</td>
<td>253</td>
</tr>
<tr>
<td>Synthesis of radioactive dolichol from [4S-3H]-mevalonate in the regenerating rat liver. By H. G. Martin &amp; K. J. I. Thorne</td>
<td>277</td>
</tr>
<tr>
<td>The involvement of endogenous dolichol in the formation of lipid-linked precursors of glycoprotein in rat liver. By H. G. Martin &amp; K. J. I. Thorne</td>
<td>281</td>
</tr>
<tr>
<td>Rat brain microsomal gangliosides. Accessibility to a neuraminidase preparation and the possible existence of different pools in relation to their biosynthesis. By H. J. F. Maccioni, A. Arce, C. Landa &amp; R. Caputto</td>
<td>291</td>
</tr>
<tr>
<td>Progesterone metabolism by the echinoderms <em>Asterias rubens</em> and <em>Marthasterias glacialis</em> (Short Communication). By J. Gaffney &amp; L. J. Goad</td>
<td>309</td>
</tr>
<tr>
<td><strong>Bioenergetics</strong></td>
<td></td>
</tr>
<tr>
<td>The inhibition of mitochondrial dicarboxylate transport by inorganic phosphate, some phosphate esters and some phosphonate compounds. By R. N. Johnson &amp; J. B. Chappell</td>
<td>171</td>
</tr>
</tbody>
</table>

The detection and characterization by electron-paramagnetic-resonance spectroscopy of iron-sulphur proteins and other electron-transport components in chromatophores from the purple bacterium *Chromatium*. By M. C. W. Evans, A. V. Lord & S. G. Reeves 177

The development of cytochromes during the cell cycle of a glucose-repressed fission yeast, *Schizosaccharomyces pombe* 972h−. By R. K. Poole, D. Lloyd & B. Chance 201


Accumulation of lanthanum by rat liver mitochondria. By K. C. Reed & F. L. Bygrave 239

**Subcellular Structures**

Oxidative decarboxylation of glycollate and glyoxylate by leaf peroxisomes. By B. Halliwell & V. S. Butt 217

Fractionation of iodinated particles and mitochondria from thyroid by zonal centrifugation and a study of their heterogeneity. By R. Miquelis & C. Simon 299

Contamination of free ribosome fractions by detached previously membrane-bound ribosomes (Short Communication). By K. O'Toole 305

**Cellular Interactions and Control Processes**

Inhibition of translation in liver polyribosomes by a new substituted thiopseudourea with antitumour action. By N. F. González-Cadavid & F. H. Quijada 129

Induction of guanine deaminase and its inhibitor in rodent liver and brain. By A. Sitaramayya, S. Ali, K. Sree Kumar & P. S. Krishnan 143

Influence of cholesterol 14-methylhexadecanoate on some ribosomal functions required for peptide elongation. By J. Hradec, Z. Dušek & O. Mach 147

The control of ribonucleic acid synthesis in bacteria. Fluctuations in messenger ribonucleic acid synthesis in cultures recovering from amino acid starvation. By J. E. M. Midgley & R. J. Smith 155

(continued overleaf)
A simple fluorimetric microassay for adenine compounds in platelets and plasma and its application to studies on the platelet release reaction.
By J. L. Gordon & A. H. Drummond

Specific inhibition of pyruvate transport in rat liver mitochondria and human erythrocytes by α-cyano-4-hydroxycinnamate (Short Communication).
By A. P. Halestrap & R. M. Denton

Effects of collagen and of aspirin on the concentration of guanosine 3′:5′-cyclic monophosphate in human blood platelets: measurement by a prelabelling technique (Short Communication).
By R. J. Haslam & M. D. McClenaghan

Development
A protein kinase inhibitor in brown adipose tissue of developing rats.
By J. P. Skala, G. I. Drummond & P. Hahn
### Contents of Volume 137, No. 2

<table>
<thead>
<tr>
<th>PAGE</th>
<th>PAGE</th>
</tr>
</thead>
</table>
| A simple graphical method for determining the inhibition constants of mixed, uncompetitive and non-competitive inhibitors (Short Communication).  
By A. Cornish-Bowden | General Methods  
A rapid method for collecting and assaying gradient fractions for radioactive macromolecules (Short Communication).  
By L. Rubinstein & A. Rein |
| 143 | 131 |

### Proteins

<table>
<thead>
<tr>
<th>PAGE</th>
</tr>
</thead>
</table>
| The interaction of the calcium-binding protein (troponin C) with bivalent cations and the inhibitory protein (troponin I).  
By J. F. Head & S. V. Perry | Dihydrofolate reductase: low-resolution mass-spectrometric analysis of an elastase digest as a sequencing tool (Short Communication).  
By H. R. Morris, K. E. Batley, N. G. L. Harding, R. A. Bjur, J. G. Dann & R. W. King |
| 145 | 409 |
| Triose phosphate isomerase from the coelacanth. An approach to the rapid determination of an amino acid sequence with small amounts of material.  
By E. Kolb, J. I. Harris & J. Bridgen | Fluorescence studies of protein-sterol relationships in human plasma lipoproteins (Short Communication).  
By R. J. M. Smith & C. Green |
| 185 | 413 |
| A low-molecular-weight protein cross-reacting with human liver N-acetyl-β-D-glucosaminidase.  
By M. Carroll & D. Robinson |  |
| 217 |  |
| Separation at neutral pH value of ³²P-labelled proteins in a membrane preparation from ox brain. Partial characterization of a component of the sodium-plus-potassium ion-activated adenosine triphosphatase.  
By D. R. Alexander & R. Rodnight |  |
| 253 |  |
| Thiol groups of normal immunoglobulin G.  
By B. M. Buchwald & G. E. Connell |  |
| 281 |  |
| A study of the reaction of protoporphyrin IX with human globin.  
By A. Treffry & S. Ainsworth |  |
| 319 |  |
| A study of the properties of two porphyrin-globin species formed in the reaction of protoporphyrin IX with human globin.  
By S. Ainsworth & A. Treffry |  |
| 331 |  |
| A study of the properties of hybrids of oxyhaemoglobin and deoxyhaemoglobin with two porphyrin-globin species.  
By A. Treffry & S. Ainsworth |  |
| 339 |  |
| Isolation of nuclear acidic proteins from rat tissues. Characterization of acetylated liver nuclear acidic proteins.  
By D. Suria & C. C. Liew |  |
| 355 |  |

### Nucleic Acids

<table>
<thead>
<tr>
<th>PAGE</th>
</tr>
</thead>
</table>
| Further investigation of the increased transfer ribonucleic acid methylase activity in tumours of the mouse colon.  
By A. E. Pegg & A. M. Hawks | The molecular basis for biological inactivation of nucleic acids. The action of methylating agents on the ribonucleic acid-containing bacteriophage R17.  
By K. V. Shooter, R. Howse, S. A. Shah & P. D. Lawley |
| 229 | 303 |
| Sites of methylation of purified transfer ribonucleic acid preparations by enzymes from normal tissues and from tumours induced by dimethylnitrosamine and 1,2-dimethylhydrazine.  
By A. E. Pegg | The reaction of alkylating agents with bacteriophage R17. Biological effects of phosphotriester formation.  
By K. V. Shooter, R. Howse & R. K. Merrifield |
| 239 | 313 |
| The fractionation of adenosine-rich oligoribonucleotides on polyethyleneimine-cellulose.  
By J. Crossley, J. Mansbridge & R. Williamson |  |
| 299 |  |
| The reaction of alkylating agents with bacteriophage R17. Biological effects of phosphotriester formation.  
By K. V. Shooter, R. Howse & R. K. Merrifield |  |
| 313 |  |
CONTENTS

Lipids


By D. M. Lee & P. Alaupovic 155

Chemical and biochemical studies on 18-hydroxyoestrone.

By J. K. Findlay, L. Siekmann & H. Breuer 263

Influence of an 18-hydroxyl group on the interaction of oestrogens and hydroxy steroid oxidoreductases.

By J. K. Findlay & H. Breuer 273

Carbohydrates

The action of nitrous acid on C-teichoic acid (C-substance) from the walls of Diplococcus pneumoniae.

By M. J. Watson & J. Baddiley 399

Small Molecules

Gas-liquid-chromatographic determination of light-dependent acetylcholine concentrations in moss callus.

By E. Hartmann & H. Kilbinger 249

Enzymology

Mössbauer spectroscopy of the nitrogenase proteins from Klebsiella pneumoniae. Structural assignments and mechanistic conclusions.

By B. E. Smith & G. Lang 169

Reactivity of the active-centre lysine residue of rabbit muscle aldolase.

By P. J. Anderson & H. Kaplan 181

Effect of pH, ionic strength and univalent inorganic ions on the reconstitution of aspartate aminotransferase.

By L. Gianfreda, G. Marino, R. Palescandolo & V. Scardi 199

Studies on partially reduced mammalian cytochrome oxidase. Reactions with carbon monoxide and oxygen.

By C. Greenwood, M. T. Wilson & M. Brunori 205

Human placental cathepsin B1. Isolation and some physical properties.

By A. A. Swanson, B. J. Martin & S. S. Spicer 223

Structural features of ring C of 20-oxo steroids and the interaction with cortisone reductase.

By I. H. White & J. Jeffery 349

Mannosidosis in Angus cattle. The enzymic defect.


A specific collagenase from rabbit fibroblasts in monolayer culture.

By Z. Werb & M. C. Burleigh 373

Cathepsin B1. A lysosomal enzyme that degrades native collagen.

By M. C. Burleigh, A. J. Barrett & G. S. Lazarus 387

The reaction of diethyl pyrocarbonate with pyruvate kinase (Short Communication).

By L. G. Dann & H. G. Britton 405

Intermolecular Organization

Thermostability of mammalian brain ribosomes and the effects of nucleoside triphosphates on their heat-sensitivity.

By B. K. Grove, T. C. Johnson & B. E. Gilbert 291

Contents of Volume 137, No. 3


By IUPAC-IUB Commission on Biochemical Nomenclature (CBN) 417

Proteins

Observations on the use of solid-phase-coupled antibodies in the radioimmunoassay of human placental lactogen.

By J. Gardner, G. Bailey & T. Chard 469
An amino acid sequence in the active site of lipoamide dehydrogenase from pig heart.
By J. P. Brown & R. N. Perham 505

The organization of the major protein of the human erythrocyte membrane.
By D. H. Boxer, R. E. Jenkins & M. J. A. Tanner 531

The binding of sodium dodecyl sulphate to bovine serum albumin at high binding ratios.
By G. Allen 575

Differential anion effects on thermal stability of collagen in the dispersed and aggregated states (Short Communication).
By A. E. Russell 599

Nucleic Acids
Studies on the form and synthesis of messenger ribonucleic acid in the rat ventral prostate gland, including its tissue-specific stimulation by androgens.
By W. I. P. Mainwaring, P. A. Wilce & A. E. Smith 513

Chromatography of transforming deoxyribonucleic acid on methylated albumin and by gel filtration.
By G. R. Barker & P. Hodges 543

Carbohydrates
The type-specific substance from Pneumococcus type 33B (Short Communication).
By M. J. Watson 603

Small Molecules
Porphyrians in egg shells (Short Communication).
By T. K. With 597

Enzymology
Properties and substrate specificity of some reactions catalysed by a short-chain fatty acyl-coenzyme A synthetase from seeds of Pinus radiata.
By O. A. Young & J. W. Anderson 423

The enyzyme of short-chain fatty acyl-coenzyme A synthetase from seeds of Pinus radiata. Kinetic studies and a proposed reaction mechanism.
By O. A. Young & J. W. Anderson 435

Curves of ligand binding. The use of hyperbolic functions for expressing titration curves.
By H. B. F. Dixon 443

myo-Inositol dehydrogenase(s) from Acetomonas oxydans. Optimization of conditions for solubilization of membrane-bound enzyme.
By W. J. Criddle, J. C. Fry & M. M. Keaney 449

The mechanism of phosphoglucomutase from Micrococcus lysodeikticus.
By J. B. Clarke & H. G. Britton 453

Preparation and properties of a phosphoenzyme from the phosphoglucomutase of Micrococcus lysodeikticus.
By J. B. Clarke, M. Birch & H. G. Britton 463

The purification and specificity of a neutral endopeptidase from rabbit kidney brush border.
By M. A. Kerr & A. J. Kenny 477

The molecular weight and properties of a neutral metallo-endopeptidase from rabbit kidney brush border.
By M. A. Kerr & A. J. Kenny 489

Substrate specificity of an α-amino acid ester hydrolase produced by Acetobacter turbinans A.T.C.C. 9325.
By T. Takahashi, Y. Yamazaki & K. Kato 497

The effect of acetyl-coenzyme A on phosphate-activated glutaminase from pig kidney and brain.
By E. Kvamme & I. Aa. Torgner 525

Regulation of muscle phosphorylase b kinase activity by inorganic phosphate and calcium ions.
By B. Sacktor, N.-C. Wu, O. Lescure & W. D. Reed 535

The purification of bovine cathepsin B1 and its mode of action on bovine collagens.
By D. J. Etherington 547

Amino acid sequence of a peptide containing the active cysteine residue of histidine ammonia-lyase.
By H. Hassall & A. K. Soutar 559

Affinity labelling of proteinases with tryptic specificity by peptides with C-terminal lysine chloromethyl ketone.
By J. R. Coggins, W. Kray & E. Shaw 579

By S. A. Cockle 587

Intermolecular Organization
By A. B. Graham, B. G. Woodcock & G. C. Wood 567

Index 607