

Contents to volume 150

Commentary

- The nature of local chemical potentials; A comment on a letter by Professor V.P. Skulachev, *R.J.P. Williams* 1

Hypotheses

- Band 3 protein-cholesterol interactions in erythrocyte membranes: possible role in anion transport and dependency on membrane phospholipid, *D. Schubert, K. Boss* 4
- Mechanism of lactose-proton cotransport in *Escherichia coli*: Kinetic results in terms of the site exposure model, *J.R. Lancaster jr* 9
- The importance of non-planar bilayer regions in photosynthetic membranes and their stabilisation by galactolipids, *D.J. Murphy* 19

Research Letters

- Transmembrane electrical potential formation by chloroplast ATPase complex (CF₁-CF₀) proteoliposomes, *Y. Shahak, A. Admon, M. Avron* 27
- ATP synthesis with single turnover flashes in spinach chloroplasts: in situ monitoring with the firefly luciferase method, *U. Schreiber, S. Del Valle-Tascon* 32
- Electric field-induced fusion of large liposomes from natural and polymerizable lipids, *R. Büschl, H. Ringsdorf, U. Zimmerman* 38
- The amino acid sequence of human spleen apoferritin, *C. Wustefeld, R.R. Crichton* 43
- Different polypeptides of bovine cytochrome c oxidase are in contact with cytochrome c, *R. Bisson, C. Montecucco* 49
- Interaction between troponin I and troponin C: Definition of the topography by proton magnetic resonance spectroscopy, *D.C. Dalgarno, R.J.A. Grand, B.A. Levine, A.J.G. Moir, G.M.M. Scott, S.V. Perry* 54
- Identification of the imidazolate anion as a ligand in Met-myoglobin by near-infrared magnetic circular dichroism spectroscopy, *P.M.A. Gadsby, A.J. Thomson* 59
- Carbohydrate structures in the β -subunit of human chorionic gonadotropin play a dominant role in hormonal activity, *Y. Shimohigashi, H.-C. Chen* 64
- Biosynthesis of acid α -glucosidase in late-onset forms of glycogenesis type-II (Pompe's disease), *F. Steckel, V. Gieselmann, A. Waheed, A. Hasilik, K. Von Figura, R. Oude Elferink, R. Kalsbeek, J.M. Tager* 69
- Hb F Kingston (⁶ γ 55 [D6] Met \rightarrow Arg), *G.R. Serjeant, B.E. Serjeant, H. Lehmann, M. Dukes, L. Robb* 77
- Hydrophobic chromatography of fibronectin, *J.J. Morgenthaler* 81
- Affinity chromatography of *Vicia graminea* (blood group N) lectin using concanavalin A-Sepharose, *M.J. Prigent, C. Lombart, A. Asseraf* 85
- Wax ester fermentation in *Euglena gracilis*, *H. Inui, K. Miyatake, Y. Nakano, S. Kitaoka* 89
- A chloroplast system capable of translating heterologous mRNAs, *G. Camerino, A. Savi, O. Ciferri* 94
- Specific interaction of the elongation factor EF-G with the ribosomal 23 S RNA from *Escherichia coli*, *A.S. Girshovich, E.S. Bochkareva, A.T. Gudkov* 99
- A* protein of bacteriophage ϕ X174 carries an oligonucleotide which it can transfer to the 3'-OH of a DNA chain, *A.D.M. Van Mansfeld, H.A.A.M. Van Teeffelen, J. Zandberg, P.D. Baas, H.S. Jansz, G.H. Veeneman, J.H. Van Boom* 103
- Inhibition of the T7 DNA polymerase by insulin, *H. Randahl* 109
- NdeI: A restriction endonuclease from *Neisseria denitrificans* which cleaves at 5'-CATATG-3' sequences, *R.J. Watson, I. Schildkraut, B.-Q. Qiang, S.M. Martin, L.P. Visentin* 114

The effect of estrogen on the concentration of ovalbumin gene sequences in the 2 M NaCl residual fraction of oviduct chromatin, <i>C.J. Mirell, I. Bekhor</i>	117
Valinomycin can depolarize mitochondria in intact lymphocytes without increasing plasma membrane potassium fluxes, <i>S.M. Felber, M.D. Brand</i>	122
Identification of a <i>M</i> ₇ 58 000 glycoprotein subunit of the opiate receptor, <i>W.A. Klee, W.F. Simonds, F.W. Sweat, T.R. Burke jr, A.E. Jacobson, K.C. Rice</i>	125
Exclusive occurrence of thermogenin antigen in brown adipose tissue, <i>B. Cannon, A. Hedin, J. Nedergaard</i>	129
Biosynthesis of dolichol and dolichylphosphate in rat hepatocytes in vivo, <i>T. Ekström, I. Eggens, G. Dallner</i>	133
Forskolin stimulates adenylate and iodine metabolism in thyroid, <i>J. van Sande, P. Cochaux, J.E. Dumont</i>	137
Photosynthetic chromatic transitions and Emerson enhancement effects in intact leaves studied by photoacoustics, <i>O. Canaani, D. Cahen, S. Malkin</i>	142
Resonance Raman spectroscopy of an oxygenated intermediate species of cytochrome oxidase <i>d</i> from <i>Escherichia coli</i> , <i>R.K. Poole, B.S. Baines, J.A.M. Hubbard, M.N. Hughes, N.J. Campbell</i>	147
A further characterisation of the B890 light-harvesting pigment-protein complex from <i>Rhodospirillum rubrum</i> strain S1, <i>R.J. Cogdell, J.G. Lindsay, J. Valentine, I. Durant</i>	151
In vivo actions of protein phosphatase inhibitor-2 in <i>Xenopus</i> oocytes, <i>J.G. Foulkes, J.L. Maller</i>	155
Activation of protein kinase isoenzymes under near physiological conditions. Evidence that both types (A and B) of cAMP binding sites are involved in the activation of protein kinase by cAMP and 8- <i>N</i> ₃ -cAMP, <i>D. Øgreid, S.O. Døskeland</i>	161
Resolution of Ca ²⁺ -calmodulin-inactivated protein kinase from wheat germ, <i>G.M. Polya, J.R. Davies</i>	167
Role of Ca ²⁺ in regulating the level of mitochondrial pyrophosphate: Effect on butyrate oxidation, <i>D.A. Otto, G.A. Cook</i>	172
Regulation of hepatic carnitine palmitoyltransferase activity during the foetal-neonatal transition, <i>E.D. Saggerson, C.A. Carpenter</i>	177
The mechanism of rabbit mammary fatty acid synthase: Evidence showing that the acyl- <i>O</i> -esters are intermediates in the catalysis, <i>A.D. McCarthy, D.G. Hardie</i>	181
Solubilization and partial purification of protein kinase systems from brain membranes that phosphorylate caldesmon: A spectrin-like calmodulin-binding protein (fodrin), <i>K. Sobue, K. Kanda, S. Kakiuchi</i>	185
Multisite phosphorylation of glycogen synthase from rabbit skeletal muscle: Phosphorylation of site-5 by glycogen synthase kinase-5 (casein kinase-II) is a prerequisite for phosphorylation of sites-3 by glycogen synthase kinase-3, <i>C. Picton, J. Woodgett, B. Hemmings, P. Cohen</i>	191
Acidosis stimulation of renal α -ketoglutarate oxidation: possible mediation by Ca ²⁺ , <i>P. Tullson, L. Goldstein</i>	197
Synhibin: A new calcium-dependent membrane-binding protein that inhibits synexin-induced chromaffin granule aggregation and fusion, <i>H.B. Pollard, J.H. Scott</i>	201
Bromobimane crosslinking studies in oligomycin-sensitive ATPase from beef heart mitochondria: <i>M</i> ₇ 31 000 protein crosslinked, <i>G. Zimmer, L. Mainka, B.M. Heil</i>	207
Inactivation of spermidine <i>N</i> ¹ -acetyltransferase with alkaline phosphatase, <i>I. Matsui, S. Otani, M. Kamei, S. Morisawa</i>	211
Direct electrochemical oxidation of <i>Clostridium pasteurianum</i> ferredoxin. Identification of facile electron-transfer processes relevant to cluster degradation, <i>F.A. Armstrong, H.A.O. Hill, N.J. Walton</i>	214
Spin equilibrium relaxation kinetics of cytochrome P450 LM2, <i>M. Ziegler, J. Blanck, K. Ruckpaul</i>	219
A protein essential for recovering oxygen evolution in cholate-treated chloroplasts, <i>Y. Toyoshima, E. Fukutaka</i>	223
Effect of ribonuclease H from chick embryo on the covalent-linked poly(A)-poly(dA) complementary to poly(dT) template, <i>Y. Sawai, N. Kitahara, K. Tsukada</i>	228
The lectin nature of α -galactosidases from <i>Vicia faba</i> seeds, <i>P.M. Dey, S. Naik, J.B. Bridham</i>	233

Purification of complement components by hydrophobic affinity chromatography on phenyl-Sephadex. Purification of human C5, <i>A. Al Salihi, J. Ripoché, L. Pruvost, M. Fontaine</i>	238
Interaction of fibronectin with arginine-agarose, <i>M. Isemura, C.-C. Hsu, Z. Yosizawa, S. Odani, T. Ono</i>	243
Prediction of secondary structure of proteins by means of hydrophobicity profiles, <i>H. Cid, M. Bunster, E. Arriagada, M. Campos</i>	247
Effects of heparin infusion on plasma lipoproteins in subjects with lipoprotein lipase deficiency, <i>S.N. Rao, C. Cortese, N.E. Miller, Y. Levy, B. Lewis</i>	255
Book Reviews and Booklist No. 41	260
Notes to Authors	274

Research Letters

A nitrate reductase activity in <i>Rhodopseudomonas capsulata</i> linked to electron transfer and generation of a membrane potential, <i>A.G. McEwan, C.L. George, S.J. Ferguson, J.B. Jackson</i>	277
Identification of cytochromes <i>o</i> and <i>a₃</i> as functional terminal oxidases in the thermophilic bacterium, PS3, <i>R.K. Poole, R.I. Scott, B.S. Baines, I. Salmon, D. Lloyd</i>	281
Kinetics of the electrogenic step and cytochrome <i>b₆</i> and <i>f</i> redox changes in chloroplasts: Evidence for a Q cycle, <i>M.A. Selak, J. Whitmarsh</i>	286
The reaction of cytochrome <i>c</i> with (Fe(EDTA) (H ₂ O)) ⁻ , <i>G. Williams, C.G.S. Eley, G.R. Moore, M.N. Robinson, R.J.P. Williams</i>	293
The generation of hydroxyl radicals following superoxide production by neutrophil NADPH oxidase, <i>J.V. Bannister, P. Bellavite, A. Davoli, P.J. Thornalley, F. Rossi</i>	300
Carbamoylation of Cu, Zn-superoxide dismutase by cyanate. Role of lysines in the enzyme action, <i>D. Cocco, L. Rossi, D. Barra, F. Bossa, G. Rotilio</i>	303
Identification of β -oxidation enzymes among peroxisomal polypeptides: increase in Coomassie blue-stainable protein after clofibrate treatment, <i>P.B. Lazarow, Y. Fujiki, R. Mortensen, T. Hashimoto</i>	307
The substructure of phosphodiesterase as established by radiation inactivation: A reinterpretation of results, <i>P. Ottolenghi, J.C. Ellory, R.A. Klein</i>	311
Identification of the NH ₂ -terminal blocking group of calcineurin B as myristic acid, <i>A. Aitken, P. Cohen, S. Santikarn, D.H. Williams, A.G. Calder, A. Smith, C.B. Klee</i>	314
Reconstruction of a Mg-ATP-dependent protein phosphatase and its activation through a phosphorylation mechanism, <i>B.A. Hemmings, T.J. Resink, P. Cohen</i>	319
The progressive effects of fasting on glucose phosphorylation by isolated rat hepatocytes: The involvement of a high-K _{0.5} enzyme, <i>J. Singh, R.C. Nordlie</i>	325
Does a cyclic AMP-dependent phosphorylation initiate the transfer of trehalase from the cytosol into the vacuoles in <i>Saccharomyces cerevisiae</i> ?, <i>A. Wiemken, M. Schellenberg</i>	329
Thymidine triphosphate dephosphorylating activity in regenerating rat liver, <i>M. Kamei, S. Otani, I. Matsui, S. Morisawa</i>	332
The glucagon receptor from liver can be functionally fused to caudate nucleus adenylate cyclase, <i>A.M. Tolkovsky, B.R. Martin</i>	337
Photoaffinity labeling reveals two muscarinic receptor macromolecules associated with the presence of calcium in rat adenohypophysis, <i>S. Avissar, E. Moscona-Amir, M. Sokolovsky</i>	343
Detection of an heat- and acid-stable progesterone-binding protein in the rat lung, <i>E.H. Moser, G. Daxenbichler</i>	347
Renal transport and disposition of Na-2-mercaptoethane sulfonate disulfide (Dimesna) in the rat, <i>K. Ormstad, N. Uehara</i>	354
Muscle glycolipids in inherited muscular dystrophy of chickens, <i>S.K. Kundu, L.K. Misra, M.G. Luthra</i>	359
Transferrin protein and iron uptake by cultured hepatocytes, <i>J.-C. Sibille, J.-N. Octave, Y.-J. Schneider, A. Trouet, R.R. Crichton</i>	365
Purification and properties of α -amino- ϵ -caprolactam racemase from <i>Achromobacter obae</i> , <i>S.A. Ahmed, N. Esaki, K. Soda</i>	370

- Differential effect of phenobarbital and β -naphthoflavone on the mRNAs coding for cytochrome P450 and NADPH cytochrome P450 reductase, *E.A. Shephard, I.R. Phillips, S.F. Pike, A. Ashworth, B.R. Rabin* 375
- Adenine binding sites of F_1 -ATPase are located on the surface of the protein molecule, *I.A. Kozlov, I. Yu. Novikova* 381
- The membrane in submitochondrial particles protects F_1 -ATPase from trinitrobenzolsulphonate and dinitrofluorobenzole, *N.R. Drozdovskaya, I.A. Kozlov, Ya. M. Milgrom, I.S. Tsybovski* 385
- Transglutaminase and polyamine dependence of effector functions of human immunocompetent cells: The effect of specific inhibitors on lymphocyte proliferation and granulocyte chemiluminescence, *V. Grünzler, R.E. Schopf, H.M. Hanauske-Abel, H. Schulte-Wissermann* 390
- An essential role for polyamines in tumor metastases, *P.S. Sunkara, N.J. Prakash, A.L. Rosenberger* 397
- Stimulation by silybin, a eukaryotic feature of archaeobacterial RNA polymerases, *R. Schnabel, J. Sonnenbichler, W. Zillig* 400
- Cyanelle DNA from *Cyanophora paradoxa* exists in two forms due to intramolecular recombination, *H.J. Bohnert, W. Löffelhardt* 403
- Studies of the structure of bacteriophage λ *cro* protein in solution. Analysis of the aromatic region of the 1H NMR spectrum, *M.P. Kirpichnikov, A.V. Kurochkin, K.G. Skryabin* 407
- Studies of the structure of bacteriophage λ *cro* protein in solution. Globular structure of *cro* protein, *A.V. Kurochkin, M.P. Kirpichnikov* 411
- A derivative of rifamycin SV inhibiting rifampicin-resistant RNA polymerase of *Escherichia coli*, *V.G. Nikoiforov, A.A. Trapkova, A.I. Gragerov, D.N. Maslin* 416
- The tyrosyl-tRNA synthetase from *Escherichia coli*: Complete nucleotide sequence of the structural gene, *D.G. Barker, C.J. Bruton, G. Winter* 419
- Conformational flexibility of DNA: An extension of the stereochemical guidelines, *G. Gupta, S.N. Rao, V. Sasisekharan* 424
- Histone octamer: Dissociation in ultracentrifugal fields and subsequent reassociation into lower oligomers, *M. Jamaluddin, M. Philip* 429
- DNA-binding of IQ, Me-IQ and Me-IQx, strong mutagens found in broiled foods, *T. Watanabe, S. Yokoyama, K. Hayashi, H. Kasai, S. Nishimura, T. Miyazawa* 434
- Accessibility of histone H4 gene of *Physarum polycephalum* to DNase I during the cell cycle, *M.L. Wilhelm, F.X. Wilhelm, B. Toublan, R. Jalouzet* 439
- Two distinct types of cell surface folic acid-binding proteins in *Dictyostelium discoideum*, *R.J.W. De Wit* 445
- Changes in polysome content during development after diapause of *Bombyx mori* embryos, *A. Saito, K. Koga, B. Sakaguchi* 449
- The role of superoxide and hydroxyl radicals in phospholipid peroxidation catalysed by iron salts, *J.M.C. Gutteridge* 454
- Chemical probes for tRNA tertiary structure. Comparative alkylation of tRNA with methylnitrosourea, ethylnitrosourea and demethylsulfate, *J. Barciszewski, P. Romby, J.P. Ebel, R. Giegé* 459
- Translocation of colicin E1 through cytoplasmic membrane of *Escherichia coli*, *M. Yamada, T. Miki, A. Nakazawa* 465
- A sensitive immunochemical method for detecting 5mC in DNA fragments, *C.W. Achwal, H.S. Chandra* 469
- Degradation of short-lived proteins is decreased by centrifugation, *E. Knecht, J. Hernández-Yago, S. Grisolia* 473
- Non-processive transcription of poly [d(A-T)] by wheat germ RNA polymerase II, *R. Durand, C. Job, M. Teissère, D. Job* 477
- Mechanism of chain initiation by dextransucrase: Absence of terminal 'Sucrose' linkage in newly synthesized dextran chains, *V.K. Parnaik, R.M. Mayer* 482
- N*-tosyl-L-phenylalanylchloromethane reacts with cysteine 81 in the molecule of elongation factor Tu from *Escherichia coli*, *J. Jonák, T.E. Petersen, B.F.C. Clark, I. Rychlik* 485
- Detection of glycogen in a glycogen storage disease by ^{13}C nuclear magnetic resonance, *A.N. Stevens, R.A. Iles, P.G. Morris, J.R. Griffiths* 489

Regulation of pathways of glucose metabolism in kidney. Specific linking of pentose phosphate pathway activity with kidney growth in experimental diabetes and unilateral nephrectomy, <i>K.A. Steer, M. Sochor, A.-M. Gonzalez, P. McLean</i>	494
5 α , 6 α -Epoxy-cholestan-3 β -ol (cholesterol α -oxide): A specific substrate for rat liver glutathione transferase B, <i>D.J. Meyer, B. Ketterer</i>	499
Solution conformation of the biantennary N-linked oligosaccharide of human serotransferrin using ^1H NMR nuclear Overhauser effect measurements, <i>S.W. Homans, R.A. Dwek, D.L. Fernandes, T.W. Rademacher</i>	503
Sulphoconjugation of steroids in porcine liver: partial purification of the cytosolic sulphotransferases for pregnenolone and 5 α -androst-16-en-3 β -ol, <i>D.B. Gower, G.M. Cooke, S.E. Ferguson</i>	507
On the mechanism of biosynthesis of leukotrienes and related compounds, <i>A. Panossian, M. Hamberg, B. Samuelsson</i>	511
Solubilization and partial purification of the high affinity [^3H]imipramine binding site from human platelets, <i>M. Rehavi, P. Skolnick, S.M. Paul</i>	514
Author Index	519
Table of Contents	525
Notes to Authors	530