

## Cumulative Contents

<i>Editorial</i>	vii	Effects of low temperature and lipid rigidity on the charge recombination process in <i>Rps. viridis</i> and <i>Rb. sphaeroides</i> reaction centers <i>P. Sebban, P. Parot, L. Baciou, P. Mathis and A. Verméglio (France)</i>	109
<i>Review</i>		Infrared spectroscopic signals arising from ligand binding and conformational changes in the catalytic cycle of sarcoplasmic reticulum calcium ATPase <i>A. Barth, W. Mäntele and W. Kreutz (F.R.G.)</i>	115
The chlorophyll triplet state as a probe of structure and function in photosynthesis <i>D.E. Budil and M.C. Thurnauer (U.S.A.)</i>	1	The antimycin-A-insensitive respiratory pathway of <i>Candida parapsilosis</i> : evidence for a second quinone involved specifically in its functioning <i>N.M. Camougrand, S. Zniber and M.G. Guérin (France)</i>	124
<i>Regular Papers</i>		A picosecond circular dichroism study of photosynthetic reaction centers from <i>Rhodobacter sphaeroides</i> <i>X. Xie and J.D. Simon (U.S.A.)</i>	131
Respiration of pea leaf mitochondria and redox transfer between the mitochondrial and extramitochondrial compartment <i>S. Krömer and H.W. Heldt (F.R.G.)</i>	42	NADH oxidase of liver plasma membrane stimulated by diferric transferrin and neoplastic transformation induced by the carcinogen 2-acetylaminofluorene <i>D.J. Morré, F.L. Crane, L.C. Eriksson, H. Löw and D.M. Morré (U.S.A., Sweden)</i>	140
Reduction of the Q-pool by duroquinol via the two quinone-binding sites of the QH <sub>2</sub> :cytochrome <i>c</i> oxidoreductase. A model for the equilibrium between cytochrome <i>b</i> -562 and the Q-pool <i>C.A.M. Marres and S. De Vries (The Netherlands)</i>	51		
Topological analysis of components of the cytochrome <i>b<sub>6</sub>f</i> complex by chemical crosslinking <i>M.A.-A.M. Shallan, B. Radau, J. Salnikow and J. Vater (F.R.G.)</i>	64		
Surface charges, the heterogeneous lateral distribution of the two photosystems, and thylakoid stacking <i>W.S. Chow, C. Miller and J.M. Anderson (Australia)</i>	69		
Changes in the S <sub>0</sub> and S <sub>1</sub> properties during dark adaptation in oxygen-evolving Photosystem-II-enriched thylakoid membranes <i>M.J. Delrieu and F. Rosengard (France)</i>	78		
Bacteriochlorophyll <i>g</i> epimer as a possible reaction center component of heliobacteria <i>M. Kobayashi, E.J. Van de Meent, C. Erkelens, J. Ames, I. Ikegami and T. Watanabe (Japan, The Netherlands)</i>	89		
<i>Rhodobacter capsulatus</i> nitrogenase reduction by natural in vivo electron carriers: Reactivity with FdI reduced by chloroplasts <i>P.C. Hallenbeck (Canada)</i>	97		
Respiratory nitrate reductase from denitrifying <i>Pseudomonas stutzeri</i> , purification, properties and target of proteolysis <i>S. Blümle and W.G. Zumft (F.R.G.)</i>	102		
		<i>Report</i>	
		Hexokinase bound to rat brain mitochondria uses externally added ATP more efficiently than internally generated ATP <i>F. Kabir and B.D. Nelson (Sweden)</i>	147
		<i>Reviews</i>	
		Hydrolysis of ATP by F <sub>1</sub> can be described only on the basis of a dual-site mechanism <i>J.A. Berden, A.F. Hartog and C.M. Edel (The Netherlands)</i>	151
		Enzymes depending on the pterin molybdenum cofactor: sequence families, spectroscopic properties of molybdenum and possible cofactor-binding domains <i>J.C. Wootton, R.E. Nicolson, J.M. Cock, D.E. Walters, J.F. Burke, W.A. Doyle and R.C. Bray (U.K.)</i>	157

## Regular Papers

- Energy transfer kinetics in chlorosomes from *Chloroflexus aurantiacus*: studies using picosecond absorbance spectroscopy  
M. Miller, R.P. Cox and T. Gillbro (Denmark, Sweden) 187
- Effect of irradiance level on distribution of chlorophylls between PS II and PS I as determined from optical cross-sections  
N.L. Greenbaum and D. Mauzerall (U.S.A.) 195
- Separate  $\beta$  subunits are derivatized with  $^{14}\text{C}$  and  $^3\text{H}$  when the bovine heart mitochondrial  $\text{F}_1\text{-ATPase}$  is doubly labeled with 7-chloro-4-nitro [ $^{14}\text{C}$ ]benzofurazan and 5'-p-fluorosulfonylbenzoyl [ $^3\text{H}$ ]inosine  
D.A. Bullough, S. Zhuo and W.S. Allison (U.S.A.) 208
- The catalytic role of subunit IV of the cytochrome  $b_6\text{-f}$  complex from spinach chloroplast  
L.-B. Li, Y.-P. Zou, L. Yu and C.-A. Yu (U.S.A.) 215
- Disintegration and reconstitution of Photosystem II reaction center core complex. II. Possible involvement of low-molecular-mass proteins in the functioning of  $\text{Q}_\text{A}$  in the PS II reaction center  
T. Nagatsuka, S. Fukuhara, K. Akabori and Y. Toyoshima (Japan) 223
- Spectroscopic characterisation of the reaction centre of Photosystem II using polarised light: Evidence for  $\beta$ -carotene excitons in PS II reaction centres  
W.R. Newell, H. Van Amerongen, J. Barber and R. Van Grondelle (The Netherlands, U.K.) 232
- I. Langmuir-Blodgett monolayer films of bacterial photosynthetic membranes and isolated reaction centers: preparation, spectrophotometric and electrochemical characterization  
G. Alegria and P.L. Dutton (U.S.A.) 239
- II. Langmuir-Blodgett monolayer films of the *Rhodospseudomonas viridis* reaction center: determination of the order of the hemes in the cytochrome  $c$  subunit  
G. Alegria and P.L. Dutton (U.S.A.) 258

## Reports

- Cytochrome oxidase content of rat brain during development  
G.C. Brown, M. Crompton and S. Wray (U.K.) 273
- Modification of myosin light chain phosphorylation in sustained arterial muscle contraction by phorbol dibutyrate  
A. Rokolya, M. Bárány and K. Bárány (U.S.A.) 276

## Review

- Enzymic mechanisms of superoxide production  
A.R. Cross and O.T.G. Jones (U.K.) 281

## Regular Papers

- Temperature dependence of the initial electron-transfer kinetics in photosynthetic reaction centers of *Chloroflexus aurantiacus*  
M. Becker, V. Nagarajan, D. Middendorf, W.W. Parson, J.E. Martin and R.E. Blankenship (U.S.A.) 299
- Stoichiometry of proton release during photosynthetic water oxidation: a reinterpretation of the responses of Neutral red leads to a non-integer pattern  
P. Jahns, J. Lavergne, F. Rappaport and W. Junge (F.R.G., France) 313
- The relationship between zeaxanthin, energy-dependent quenching of chlorophyll fluorescence, and trans-thylakoid pH gradient in isolated chloroplasts  
G. Noctor, D. Rees, A. Young and P. Horton (U.K.) 320
- Inhibition of electron transfer from  $\text{A}_0$  to  $\text{A}_1$  in Photosystem I after treatment in darkness at low redox potential  
H. Bottin and P. Sétif (France) 331
- Effect of light-induced changes in thylakoid voltage on chlorophyll fluorescence of *Aegopodium podagraria* leaves  
H. Dau, R. Windecker and U.-P. Hansen (F.R.G.) 337
- Charge separation and formation of bacteriochlorophyll triplets in *Hellobacterium chlorum*  
F.A.M. Kleinherenbrink, T.J. Aartsma and J. Amez (The Netherlands) 346
- Characterization of reaction center/antenna complexes from bacteriochlorophyll  $a$  containing *Ectothiorhodospiraceae*  
T. Leguijt and K.J. Hellingwerf (The Netherlands) 353
- Protection of the oxygen-evolving Photosystem II complex by glycinebetaine  
G.C. Papageorgiou, Y. Fujimura and N. Murata (Japan) 361
- Bacteriochlorophyll-protein interaction in the light-harvesting complex B800-850 from *Rhodobacter sulfidophilus*: A Fourier-transform Raman spectroscopic investigation  
W. Mantele, J. Sawatzki, M. Doi, N. Gad'on and G. Drews (F.R.G., Japan) 367
- Inhibition of succinate-ubiquinone reductase by nitrosalicyl-N-alkylamides  
C. Liu, J.-x. Xu, Y. Xiao and L.-q. Gu (China) 373

Electron transport inhibition of the cytochrome $bc_1$ complex of rat-liver mitochondria by phenolic uncouplers <i>N. Tokutake, H. Miyoshi and T. Fujita (Japan)</i>	377	<i>D.J. Chapman, I. Vass and J. Barber (U.K., Hungary)</i>	391
Identification of EPR signals from the states $Q_A^-Q_B^-$ and $Q_B^-$ in Photosystem II from <i>Phormidium laminosum</i> <i>A.R. Corrie, J.H.A. Nugent and M.C.W. Evans (U.K.)</i>	384	Flash photolysis studies of manganese-depleted Photosystem II: evidence for binding of $Mn^{2+}$ and other transition metal ions <i>C.W. Hoganson, P.A. Casey and Ö. Hansson (Sweden)</i>	399
Secondary electron transfer reactions of the isolated Photosystem II reaction centre after reconstitution with plastoquinone-9 and diacylglycerolipids		<i>Cumulative Contents, Vol. 1057</i>	407
		<i>Author Index</i>	411