842 SUBJECT INDEX

SUBJECT INDEX

Adenine nucleotides

Effect of — on the N-methyl group oxidation in liver mitochondria (Frisell, Randolph) (292) 360

Adenine nucleotides

Studies on the energy state of isolated brown adipose tissue mitochondria. Effect of —— and oligomycin on the generation and dissipation of the "energy potential" (Flatmark, Pedersen) (292) 64

ADP

Incorporation of ³²P₁ into intramitochondrial —— fraction dependent on the substrate-level phosphorylation (Tokumitsu, Ui) (292) 310

AMP phosphorylation

Intramitochondrial ——: A suggestion for the compartmentation of the endogenous P₁ pool (Tokumitsu, Ui) (292) 325

ATPase

Energy level associated with the light-triggered Mg-dependent —— in spinach chloroplasts (Bakker-Grunwald, van Dam) (292) 808

ATPase

Inhibitory effect of inorganic phosphate on the axonemal — of cilia from Tetrahymena pyriformis (Otokawa) (292) 834

ATPase inhibitor

Interaction between the mitochondrial ATPase (F₁) and the —— (van de Stadt et al.) (292) 338

Azoferredoxin

Electron paramagnetic resonance studies on nitrogenase. II. Interaction of adenosine 5'-triphosphate with —— (Zumft et al.) (292) 413

Azotobacter vinelandii

Oxidative phosphorylation in ——. Energylinked pH changes and fluorescence changes of atebrin and 1-anilinonaphthalene-8-sulphonate (Bening, Eilermann) (292) 402

Bacteriochlorophyll

Absorbance and fluorescence properties of the —— a reaction center complex and bacteriochlorophyll a protein in green bacteriochlorophyll a protein in green bacteria (Fowler et al.) (292) 692

Bacteriochlorophyll

Circular dichroism and absorption spectra of —— protein and reaction center complexes from Chlorobium thiosulfatophilum (Olson et al.) (292) 206

Bacteriochlorophyll

Extraction of oxidized —— from illuminated photosynthetic reaction center particles (Straley, Clayton) (292) 685

Bacteriochlorophyll

Primary events in the photosynthetic reaction centre from Rhodopseudomonas spheroides strain R26: Triplet and oxidized states of —— and the identification of the primary electron acceptor (Dutton et al.) (292) 654

Brown adipose tissue

Studies on the energy state of isolated ——mitochondria. Effect of adenine nucleotides and oligomycin on the generation and dissipation of the "energy potential" (Flatmark, Pedersen) (292) 64

C-550

Kinetics of light-induced changes of ——, cytochrome b₅₅₉ and fluorescence yield in chloroplasts at low temperature (Butler et al.) (292) 140

Calcium ion-polypeptide complex

A neutral —— (Urry et al.) (292) 853

Chlamydomonas reinhardti

Studies on cytochrome b-563 and P700 in three non-photosynthetic mutants of —— (Maroc, Garnier) (292) 477

Chlorophyll

Picosecond fluorescent kinetics of in vivo —— (Seibert et al.) (292) 493

Chlorophyll fluorescence

High-energy state of the thylakoid system as indicated by —— and chloroplast shrin-kage (Krause) (292) 715

Chlorophyll a fluorescence

Light-induced slow changes in — in isolated chloroplasts: Effects of magnesium and phenazine methosulfate (Mohanty et al.) (292) 459

Chlorophyll(ide)

Kinetics and quantum yield of photoconversion of protochlorophyll(ide) to —— a (Nielsen, Kahn) (292) 117

Chloroplasts

Evidence for two phosphorylation sites associated with the electron transport chain of —— (West, Wiskich) (292) 197

Chloroplasts

Kinetics of light-induced changes of C-550, cytochrome b₅₅₉ and fluorescence yield in — at low temperature (Butler et al.) (292) 140

Chloroplasts

New results on the mode of action of 3-(3,4-dichlorophenyl)-1,1-dimethylurea in spinach
—— (Bennoun, Li) (292) 162

Chloroplasts

Relationship between delayed fluorescence and the H⁺ gradient in —— (Evans, Crofts) (292) 130

Chloroplast particles

Isolation and properties of —— of Scenedesmus obliquus D₃ with high photochemical activity (Berzborn, Bishop) (292) 700

Chloroplast shrinkage

High-energy state of the thylakoid system as indicated by chlorophyll fluorescence and —— (Krause) (292) 715

Chromatophores

Some effects of o-phenanthroline on electron transport in —— from photosynthetic bacteria (Jackson et al.) (292) 218

Cilia

Inhibitory effect of inorganic phosphate on the axonemal ATPase of —— from Tetrahymena pyriformis (Otokawa) (292) 834

Circular dichroism

— of cytochrome oxidase, cytochrome b_{566} , and cytochrome c in beef heart mitochondrial membrane fragments (Storey, Lee) (292) 554

Complex III

EPR spectrum of isolated —— (DerVartanian et al.) (292) 496

Copper protein

Cytochrome oxidase from Pseudomonas aeruginosa. II. Reaction with —— (Wharton et al.) (292) 611

Cyanidium caldarium

Photosynthetic oxygen production and the size of the photosynthetic unit in a cell-free preparation from —— (Diner, Mauzerall) (292) 285

Cytochromes

Kinetic and thermodynamic properties of membrane-bound —— of aerobically and photosynthetically grown Rhodopseudomonas spheroides (Connelly et al.) (292) 644

Cytochromes

Participation of —— in the process of nitrate respiration in Klebsiella (Aerobacter) aerogenes (Knook et al.) (292) 237

Cytochromes

Respiratory chain of plant mitochondria. XV. Equilibration of —— c₅₄₉, b₅₅₃, b₅₅₇ and ubiquinone in mung bean mitochondria: Placement of cytochrome b₅₅₇ and estimation of the midpoint potential of ubiquinone (Storey) (292) 592

Cytochrome

Water and —— oxidation-reduction reactions (Kihara, McCray) (292) 297

Cytochrome b₅₅₉

Kinetics of light-induced changes of C-550, —— and fluorescence yield in chloroplasts at low temperature (Butler et al.) (292) 140

Cytochrome b₅₅₉

Photooxidation of — and the electron donors in chloroplast Photosystem II (Vermeglio, Mathis) (292) 763

Cytochrome b-563

Studies on —— and P700 in three non-photosynthetic mutants of Chlamydomonas reinhardti (Maroc, Garnier) (292) 477

Cytochrome b₅₆₆

Circular dichroism of cytochrome oxidase, —— and cytochrome c in beef heart mitochondrial membrane fragments (Storey, Lee) (292) 554

Cytochrome c

Circular dichroism of cytochrome oxidase, cytochrome b₅₆₆ and —— in beef heart mitochondrial membrane fragments (Storey, Lee) (292) 554

Cytochrome c

Electron transfer in ——. Role of the polypeptide chain (Gupta) (292) 291

Cytochrome c

Nuclear magnetic resonance study of the interaction of with cytochrome c peroxidase (Gupta, Yonetani) (292) 502

Cytochrome c

Peroxide-dependent reduction of —— by NADH (Misra, Fridovich) (292) 815

Cytochrome c-556

—, a di-haem protein from Pseudomonas aeruginosa (Singh, Wharton) (292) 391

Cytochrome c peroxidase

In vitro studies on yeast —— and its possible function in the electron transfer and energy coupling reactions (Erecínska et al.) 292) 1

Cytochrome c peroxidase

Nuclear magnetic resonance study of the interaction of cytochrome c with —— (Gupta, Yonetani) (292) 502

Cytochrome f

Contrasting effects of plastocyanin on the photoreduction and photooxidation of ——in chloroplasts (Knaff) (292) 186

Cytochrome oxidase

— from Pseudomonas aeruginosa. I. Purification and some properties (Gudat et al.) (292) 376

Cytochrome oxidase

- from Pseudomonas aeruginosa. II.

844 SUBJECT INDEX

Reaction with copper protein (Wharton et Oxidative phosphorylation in Azotobacter vinelandii. Energy-linked pH changes and al.) (292) 611 Delayed fluorescence - of atebrin and 1-anilinonaphthalene-Relationship between — and the H+ 8-sulphonate (Bening, Eilermann) (292) 402 gradient in chloroplasts (Evans, Crofts) Fluorescence polarization (292) 130- and pigment orientation in photosyn-3-(3,4-Dichlorophenyl)-1,1-dimethylurea thetic bacteria (Goedheer) (292) 665 New results on the mode of action of -Fluorescence transients in spinach chloroplasts (Bennoun, Li) (292) Effects of carbon dioxide concentration on 162 oxygen evolution and —— in synchronous cultures of Chlorella pyrenoidosa (Slovacek, Electron transfer Bannister) (292) 729 — in cytochrome c. Role of the polypeptide chain (Gupta) (292) 291 Fluorescence yield Electron transfer Kinetics of light-induced changes of C-550, In vitro studies on yeast cytochrome c perocytochrome b₅₅₉ and —— in chloroplasts at low temperature (Butler et al.) (292) 140 xidase and its possible function in the and energy coupling reactions (Erecínska Free radicals One-electron redox reactions of --- in et al.) (292) 1 solution. Rate of electron transfer proces-Electron transfer One-electron redox reactions of free radicals ses to quinones (Rao, Hayon) (292) 516 in solution. Rate of --- processes to qui-Freeze-fracture studies — on mitochondria from wild-type and nones (Rao, Hayon) (292) 516 respiratory-deficient yeasts (Packer et al.) Electron transport Some effects of o-phenanthroline on —— in (292)92chromatophores from photosynthetic bac-Hydrogen ion gradient teria (Jackson et al.) (292) 218 Relationship between delayed fluorescence — in chloroplasts (Evans, Crofts) and the --Electron transport (292) 130Trypsin inhibition of —— (Selman et al.) Hydrogen peroxide generating system (292)566Electron transport chain in hog thyroid microsomes (Ohtaki et Evidence for two phosphorylation sites asal.) (292) 825 Iron protein sociated with the ---- of chloroplasts (West, -- content of Thiocapsa pfennigii, a pur-Wiskich) (292) 197 ple sulphur bacterium of atypical chloro-Energy coupling In vitro studies on yeast cytochrome c perphyll composition (Meyer et al.) (292) 634

oxidase and its possible function in the electron transfer and --- reactions (Erecínska et al.) (292) 1

Energy-linked pH changes

Oxidative phosphorylation in Azotobacter vinelandii. — and fluorescence changes of atebrin and 1-anilinonaphthalene-8-sulphonate (Bening, Eilermann) (292) 402

Energy transfer

- in phycobilisomes from phycoerythrin to allophycocyanin (292) 858

Ferredoxin

Complex formation by ferredoxin-NADP+ reductase with —— or NADP⁺ (Shin) (292) 13

Ferredoxin-NADP+ reductase

Complex formation by —— with ferredoxin or NADP⁺ (Shin) (292) 13

Ferro-ferricyanide system

Oxidation reduction potential of the --- in buffer solutions (O' Reilly) (292) 509

Fluorescence changes

Leghaemoglobin

Studies of the physiological role of —— in soybean root nodules (Bergersen et al.) (292) 271

Light-induced absorption changes

— in Chromatium subchromatophore particles exhaustively extracted with non-polar solvents (Ke et al.) (292) 226

Magnesium-dependent ATPase

The energy level associated with the lighttriggered - in spinach chloroplasts (Bakker-Grunwald, van Dam) (292) 808

Membrane-bound cytochromes

Kinetic and thermodynamic properties of - of aerobically and photosynthetically grown Rhodopseudomonas spheroides (Connelly et al.) (292) 644

Membrane conformational changes

Ethyl red as a probe into the mechanism of light-driven proton translocation by isolated chloroplasts. I. The spectral shift of ethyl red and —— (Heath) (292) 444

N-Methyl group

Effect of adenine nucleotides on the ——oxidation in liver mitochondria (Frisell, Randolph) (292) 360

Mitochondria

Freeze-fracture studies on —— from wildtype and respiratory-deficient yeasts (Packer et al.) (292) 92

Mitochondrial ATPase

Interaction between the — (F₁) and the ATPase inhibitor (van de Stadt et al.) (292) 338

Muscle mitochondria

Analysis of rat skeletal —— isolated by the method of tryptic lysis (Bullock et al.) (292) 350

NADH dehydrogenases

External —— of intact plant mitochondria (Douce et al.) (292) 105

NAD(P) reductase

— isolated from Chlorobium thiosulfatophilum: Purification and some properties (Kusai, Yamanaka) (292) 621

Nitrate respiration

Participation of cytochromes in the process of —— in Klebsiella (Aerobacter) aerogenes (Knook et al.) (292) 237

Nitrogenase

Algal — reductant pools and photosystem I activity (Lex, Stewart) (292) 436

Nitrogenase

Electron paramagnetic resonance studies on
—. II. Interaction of adenosine 5'-triphosphate with azoferredoxin (Zumft et al.)
(292) 413

Nitrogenase

Electron paramagnetic resonance studies on ——. III. Function of magnesium adenosine 5'-triphosphate and adenosine 5'-diphosphate in catalysis by nitrogenase (Mortenson et al.) (292) 422

Nitrogenase

Inhibition of —— -catalyzed reductions (Hwang et al.) (292) 256

Nitrogenase

Azotobacter vinelandii: Activities, crossreactions and EPR spectra (Shah et al.) (292) 246

Nitrogenaseless mutants

Nitrogenase. III. — of Azotobacter vinelandii: Activities, cross-reactions and EPR spectra (Shah et al.) (292) 246

Oligomycin

Studies on the energy state of isolated brown adipose tissue mitochondria. Effect of adenine nucleotides and —— on the generation

and dissipation of the "energy potential" (292) 64

Oxaloacetate

Permeability of isolated mitochondria to —— (Gimpel et al.) (292) 582

Oxidation

Effect of adenine nucleotides on the N-methyl group — in liver mitochondria (Frisell, Randolph) (292) 360

Oxidation-reduction potential

— of the ferro-ferricyanide system in buffer solutions (O'Reilly) (292) 509

Oxidation-reduction reactions

Water and cytochrome —— (Kihara, Mc Cray) (292) 297

Oxidative phosphorylation

— in Azotobacter vinelandii. Energy-linked pH changes and fluorescence changes of atebrin and 1-anilinonaphthalene-8-sulphonate (Bening, Eilermann) (292) 402

Oxidative phosphorylation

Comparison between the effectiveness of uncouplers of —— in mitochondria and in different artificial membrane systems (Bakker et al.) (292) 78

Oxidative phosphorylation

Effects of protein synthesis inhibitors on
— by plant mitochondria (Wilson,
Moore) (292) 603

Oxidative phosphorylation

— in Escherichia coli K-12: The genetic and biochemical characterisation of a strain carrying a mutation in the uncB gene (Butlin et al.) (292) 366

Oxidative phosphorylation

—— in mitochondria isolated from human fibroblasts —(Millis, Pious) (292) 73

Oxidative phosphorylation

Studies of —— in Saccharomyces cerevisiae and Saccharomyces carlsbergensis (Mackler, Haynes) (292) 88

Oxygen evolution

Effects of carbon dioxide concentration on —— and fluorescence transients in synchronous cultures of Chlorella pyrenoidosa (Slovacek, Bannister) (292) 729

P700

Studies on cytochrome b-563 and —— in three non-photosynthetic mutants of Chlamydomonas reinhardti (Maroc, Garnier) (292) 477

Permeability

— of isolated mitochondria to oxaloacetate (Gimpel et al.) (292) 582

Peroxide-dependent reduction — of cytochrome c by NADH (Misra, Fridovich) (292) 815 846 SUBJECT INDEX

Phosphorylation

Incorporation of ³²P₁ into intramitochondrial ADP fraction dependent on the substrate-level — (Tokumitsu, Ui) (292) 310

Phosphorylation potential

— generated by respiring mitochondria (Slater et al.) (292) 534

Phosphorylation sites

Evidence for two —— associated with the electron transport chain of chloroplasts (West, Wiskich) (292) 197

Photooxidation

Contrasting effects of plastocyanin on the photoreduction and —— of cytochrome f in chloroplasts (Knaff) (292) 186

Photoreduction

Contrasting effects of plastocyanin on the —— and photooxidation of cytochrome f in chloroplasts (Knaff) (292) 186

Photosynthetic bacteria

Fluorescence polarization and pigment orientation in —— (Goedheer) (292) 665

Photosynthetic bacteria

Some effects of o-phenanthroline on electron transport in chromatophores from —— ((Jackson et al.) (292) 218

Photosynthetic electron transfer

Effect of temperature on the rate of —— in chloroplasts of chilling-sensitive and chilling-resistant plants (Shneyour et al.) (292) 152

Photosynthetic electron transport

Light-induced changes of bound chloroplast plastocyanin as studied by EPR spectroscopy: Role of plastocyanin in noncyclic—— (Malkin, Bearden) (292) 169

Photosynthetic electron transport

Redistribution of electric charge accompanying —— in Chromatium (Case, Parson) (292) 677

Photosynthetic oxygen production

— and the size of the photosynthetic unit in a cell-free preparation from Cyanidium caldarium (Diner, Mauzerall) (292) 285

Photosynthetic phosphorylation

Uncoupling of — by benzophenanthridine alkaloids (Vallejos) (292) 193

Photosynthetic reaction centre

Extraction of oxidized bacteriochlorophyll from illuminated —— particles (Straley, Clayton) (292) 685

Photosynthetic reaction centre

Primary events in the —— from Rhodopseudomonas spheroides strain R26: Triplet and oxidized states of bacteriochlorophyll and the identification of the primary electron acceptor (Dutton et al.) (292) 654

Photosynthetic unit

Photosynthetic oxygen production and the size of the —— in a cell-free preparation from Cyanidium caldarium (Diner, Mauzerall) (292) 235

Photosystem I

Algal nitrogenase, reductant pools and ——activity (Lex, Stewart) (292) 436

Photosystem II

Effects of α -benzyl- α -bromo-malodinitrile on the primary electron acceptor of — in spinach chloroplasts (Brandon, Elgersma) (292) 753

Photosystem II

Isolation and properties of particles containing reaction-centre complex of ——from spinach chloroplasts (Wessels et al.) (292) 241

Photosystem II

Limiting steps in —— and water decomposition in Chlorella and spinach chloroplasts (Bouges-Bocquet) (292) 772

Photosystem II

Photooxidation of cytochrome b₅₅₉ and the electron donors in chloroplast —— (Vermeglio, Mathis) (292) 763

Phycobilisomes

Energy transfer in —— from phycoerythrin to allophycocyanin (292) 858

Pigment orientation

Fluorescence polarization and —— in photosynthetic bacteria (Goedheer) (292) 665

Plant mitochondria

Effects of protein synthesis inhibitors on oxidative phosphorylation by —— (Wilson, Moore) (292) 603

Plant mitochondria

Respiratory chain of ——. XV. Equilibration of cytochromes c_{549} , b_{553} , b_{557} and ubiquinone in mung bean mitochondria: Placement of cytochrome b_{557} and estimation of the midpoint potential of ubiquinone (Storey) (292) 592

Plastocyanin

Contrasting effects of —— on the photoreduction and photooxidation of cytochrome f in chloroplasts (Knaff) (292) 186

Plastocyanin

Light-induced changes of bound chloroplast
—— as studied by EPR spectroscopy: Role
of plastocyanin in noncyclic photosynthetic
electron transport (Malkin, Bearden) (292)
169

Polypeptide-calcium ion complex

A neutral —— (Urry et al.) (292) 853

Primary electron acceptor

Primary events in the photosynthetic re-

action centre from Rhodopseudomonas spheroides strain R26: Triplet and oxidized states of bacteriochlorophyll and the identification of the —— (Dutton et al.) (292) 654

Protein synthesis inhibitors

Effects of —— on oxidative phosphorylation by plant mitochondria (Wilson, Moore) (292) 603

Protochlorophyll(ide)

Kinetics and quantum yield of photoconversion of —— to chlorophyll(ide) a (Nielsen, Kahn) (292) 117

Proton translocation

Ethyl red as a probe into the mechanism of light-driven — by isolated chloroplasts. I. The spectral shift of ethyl red and membrane conformational changes (Heath) (292) 444

Proton translocation

Mechanism of respiration-driven — in the inner mitochondrial membrane. Kinetics of proton translocation and role of cations (Papa et al.) (292) 20

Pseudomonas aeruginosa

Cytochrome c-556, a di-haem protein from —— (Singh, Wharton) (292) 391

Pseudomonas aeruginosa

Cytochrome oxidase from ——. I. Purification and some properties (Gudat et al.) (292) 326

Purple sulphur bacterium

Iron protein content of Thiocapsa pfennigii, a —— of atypical chlorophyll composition (Meyer et al.) (292) 634

Reaction center

Absorbance and fluorescence properties of the bacteriochlorophyll a —— complex and bacteriochlorophyll a protein in green bacteria (Fowler et al.) (292) 692

Redox reactions

One-electron —— of free radicals in solution. Rate of electron transfer processes to quinones (Rao, Hayon) (292) 516

Reduced nicotinamide hypoxanthine dinucleotide

Oxidation of — by intact rat liver mitochondria (Tischler, Fisher) (292) 39

Root nodules

Studies of the physiological role of leghaemoglobin in soybean —— (Bergersen et al.) (292) 271

Subchromatophore particles

Light-induced absorption changes in Chromatium —— exhaustively extracted with non-polar solvents (Ke et al.) (292) 226

Substrate-level phosphorylation

Incorporation of ³²P₁ into intramitochondrial ADP fraction dependent on the —— (Tokumitsu, Ui) (292) 310

Succinate dehydrogenase

Nature of the activation of —— by various effectors and in hypobaria and hypoxia (Susheela, Ramasarma) (292) 50

Thylakoid system

High-energy state of the —— as indicated by chlorophyll fluorescence and chloroplast shrinkage (Krause) (292) 715

Tryptic lysis

Analysis of rat skeletal muscle mitochondria isolated by the method of —— (Bullock et al.) (292) 350

Ubiquinone

Respiratory chain of plant mitochondria. XV. Equilibration of cytochromes c₅₄₉, b₅₅₃, b₅₅₇ and — in mung bean mitochondria: Placement of cytochrome b₅₅₇ and estimation of the midpoint potential of ubiquinone (Storey) (292) 592

Uncouplers

Comparison between the effectiveness of —— of oxidative phosphorylation in mitochondria and in different artificial membrane systems (Bakker et al.) (292) 78

Water decomposition

Limiting steps in Photosystem II and — in Chlorella and spinach chloroplasts (Bouges-Bocquet) (292) 772

Water-splitting enzyme system Y

Studies on the ADRY agent-induced mechanism of the discharge of the holes trapped in the photosynthetic —— (Renger et al.) (292) 796

Water-splitting system

Action of indophenols and nitrophenols on the deactivation reactions in the —— of photosynthesis (Vater) (292) 786