

Poster Abstracts

Flavins and Pyridine Nucleotides

- | | | |
|-----|--|--|
| A01 | Structural and functional properties of corn root ferredoxin-NADP⁺-reductase | Alessandro Aliverti, Rick Faber, Cristian Ferioli, Casey Finnerty, Monica Spinola, Debora Raimondi, P. Andrew Karplus and Giuliana Zanetti |
| A02 | Role of the c-terminal tyrosine of plant ferredoxin-NADP⁺-reductase in NADP⁺ binding affinity and pyridine nucleotide specificity | Luciano Piubelli, Alessandro Aliverti, Adrian K. Arakaki, Nestor Carrillo, Eduardo Ceccarelli, P. Andrew Karplus and Giuliana Zanetti |
| A03 | Role of glutamic acid 139 in the catalytic mechanism of ferredoxin-NADP⁺-reductase from <i>Anabaena</i> PCC7119 | Merche Faro-Thomas, Milagros Medina, John K. Hurley, Gordon Tollin and Carlos Gomez-Moreno |
| A04 | Characterisation of ferredoxin (flavodoxin) NADP⁺ reductase and flavodoxin; key components of electron transfer in <i>Escherichia coli</i> | Lisa McIver, Claire Leadbeater, Dominic J. Campopiano, Robert L. Baxter, Stephen K. Chapman and Andrew W. Munro |
| A05 | Studies on the flavin reductase reaction catalysed by biliverdin-IXβ-reductase | Orla Cunningham, Michael G. Gore and Timothy J. Mantle |
| A06 | Sequence analysis and overexpression of thermophilic NADH oxidases from <i>Sulfolobus</i> and <i>Pyrococcus</i> | Edward J. Crane III, Donald E. Ward, Qunxin She and Roger Garrett |
| A07 | On new artificial mediator accepting NAD(P)H oxidoreductases from <i>Clostridium thermoaceticum</i> and <i>Clostridium formicoaceticum</i> | Helmut Günther, Katrin Walter, Richard Feicht, Peter Köhler and Helmut Simon |
| A08 | Flavin reductase of <i>Escherichia coli</i>: structure-activities studies | Vincent Nivière, Maria A. Vanoni, Franck Fieschi and Marc Fontecave |
| A09 | Determinants of cofactor specificity in <i>Anabaena</i> PCC7119 ferredoxin-NADP⁺-reductase | Jesus Tejero, Alejandra Luquita, Koert Grever, Richard Perham, Carlos Gomez-Moreno and Milagros Medina |
| A10 | The Iron-Sulfur-Flavoprotein 2-Hydroxyglutaryl-CoA Dehydratase | M. Hans, U. Müller, W. Thamer, E. Bill, A. Pierik. and W. Buckel |

Chemistry, Physics and Theoretical Aspects

- | | | |
|-----|--|---|
| B01 | Dipole moments and polarizabilities of flavins explored using Stark-effect spectroscopy | Robert J. Stanley and Haishan Jang |
| B02 | Flavin binding thermodynamics in <i>Enterobacter cloacae</i> nitroreductase | Ronald L. Koder and Anne-Frances Miller |
| B03 | Regulation of flavin functions by hydrogen bonding | Yumihiko Yano, Takeshi Kajiki and Hideki Moriya |
| B04 | The effect of hydrogen bonding of flavin (neutral semiquinone state) | Yoshitaka Watanabe |

B05	Remote substituent effect on oxidation and protonation states of free and covalently bound flavins	Ryszard Zielinski and Henryk Szymusiak
B06	Nitroreductase flavin bend-angle & H-bonding	Joseph Walsh and Anne-Frances Miller
B07	Supramolecular models of flavoenzyme redox processes	Catherine McIntosh, Angelika Niemz and Vincent Rotello
B08	Electronic effects of 7 and 8 ring substituents as predictors of flavin oxidation-reduction potentials	Dale E. Edmondson and Sandro Ghisla
B09	Ab initio MO study of the mechanism of flavin-catalyzed dehydrogenation reaction – PTC driving new mechanism	Kichisuke Nishimoto
B10	The autooxidation of photoreduced 3,4- dihydro-6,7-dimethyl- 3-oxo-4-D-ribityl- 2- quinoxalinecarboxamide, the analog of riboflavin	Kunio Matsui, Yasuzo Nishina, Kyosuke Sato and Kiyoshi Shiga
B11	Thermochemistry of autooxidation of reduced flavins based on density functional theory computations	Henryk Szymusiak and Ryszard Zielinski

Spectroscopy

C01	Advanced EPR spectroscopic studies of ferredoxin-NADP⁺-reductase mutants from Pea	Milagros Medina, Carlos Gomez-Moreno, Richard Cammack, Adrian K. Arakaki, Nestor Carillo and Eduardo A. Ceccarelli
C02	EPR, ENDOR and TRIPLE resonance spectroscopy on the neutral flavin radical in <i>Escherichia coli</i> DNA photolyase	Gerald Richter, Richard Feicht, Adelbert Bacher, Christopher W. M. Kay, Kristina Schulz, Peter Sadewater, Klaus Möbius and Stefan Weber
C03	Resonance raman study on the interaction between D-amino acid oxidase and substrate analogs	Ruiwen Shi, Yasuzo Nishina, Kyosuke Sato, Retsu Miura and Kiyoshi Shiga
C04	Direct measurements of ultrafast excited state quenching of isoalloxazine by adenine in FAD	Robert J. Stanley and Alexander W. MacFarlane IV
C05	Conformational dynamics of <i>E. coli</i> thioredoxin reductase: identification of two catalytically important states by ultra-fast flavin fluorescence spectroscopy	Petra A. W. van den Berg, Scott B. Mulrooney, Ivo van Stokkum, Charles H. Williams Jr. and Antonie J.W.G. Visser

Flavins and Metals

D01	Properties of xanthine oxidase from human milk: the enzyme is grossly deficient in molybdenum and substantially deficient in iron-sulphur centres	Robert C. Bray, Ben Godber, Roger Harrison and Robert Eisenthal
D02	Respiratory complex II from the thermoacidophilic archaeon, <i>Sulfolobus</i> sp. strain 7: genes and protein	Toshio Iwasaki, Miho Aoshima, Asako Kounosu, Tairo Oshirma and Takeshi Nishino

- | | | |
|-----|--|---|
| D03 | ERP assignment of iron-sulfur centers of rat xanthine dehydrogenase | Ken Okamoto, T. Iwasaki, T. Nishino, H. Hori and T. Nishino |
| D04 | <i>Azospirillum brasilense</i> glutamate synthase: identification of substrates and cofactors binding site by site-directed mutagenesis | Paola Morandi, Barbara Valzasina, Chiara Colombo, Maria A. Vanoni and Bruno Curti |
| D05 | The mechanism of conversion from xanthine dehydrogenase to oxidase of rat enzyme studied by site-directed mutagenesis | Tomoko Nishino, Ken Okamoto, Hiroyuki Hori, Asako Kounosu, Takeshi Nishino |
| D06 | Studies of the bile acid inducible NADH: flavin oxidoreductase | Martin Mewis and Russ Hille |
| D07 | <i>Azospirillum brasilense</i> glutamate synthase: overproduction in <i>E. coli</i> and characterization of the recombinant enzyme | Maria A. Vanoni, Sergio Ravasio, Helena Stabile, Roberto Bossi and Bruno Curti |
| D08 | New aspects on adenosine 5'-phosphosulfate (APS) reductase from <i>Desulfovibrio desulfuricans</i> Essex | Thomas Büchert, Günter Fritz and Peter M. H. Kroneck |

Electron Transfer in Cytochrome Systems

- | | | |
|-----|--|---|
| E01 | Two FCSD flavoproteins of <i>Chlorobium limicola f. thiosulfatophilum</i> involved in sulfur metabolism | Fabienne Verte, Yves Guisez, Terrance Meyer, Michael Cusanovich and Jozef Van Beeumen |
| E02 | A flavohemoprotein from the cellulolytic fungus <i>Humicola insolvens</i> contains 6-hydroxy-FAD as the dominant active cofactor | Kiyohiko Igarashi, Marc F. J. M. Verhagen, Masahiro Samejima, Martin Schülein, Karl-Erik L. Erikson and Takeshi Nishino |
| E03 | Changing the heme ligands of flavocytochrome <i>b</i>₂ | Christopher G. Mowat, Caroline S. Miles, Graeme A. Reid and Stephen K. Chapman |
| E04 | Cloning and characterization of a membrane-bound flavocytochrome c from the purple phototrophic sulfur bacterium, <i>Ectothiorhodospira vacuolata</i> | Vesna Kostanjevecki, Yves Guisez, Terrance Meyer, Michael Cusanovich and Jozef Van Beeumen |
| E05 | Electron transfer from FAD to heme-Fe in nitrate reductase | Jeffrey A. Mertens, Lawrie Skipper, David J. J. Lowe and Wilbur H. Campbell |
| E06 | Expression, purification and mutagenesis of flavocytochrome c-sulfide dehydrogenase from <i>Chromatium vinosum</i> | Lina De Smet, Terrance E. Meyer, Michael A. Cusanovich, Yves Guisez, Jozef J. Van Beeumen |
| E07 | Redox properties of flavocytochrome c from <i>Shewanella frigidimarina</i> NCIMB400 | Mary K. Doherty, Caroline S. Miles, Karen Turner, Graeme A. Reid and Stephen K. Chapman |
| E08 | Molecular recognition in the flavin domain of flavocytochrome <i>b</i>₂ | Ruth Moysey, Stephen K. Chapman and Graeme Reid |
| E09 | The roles of key residues in flavocytochrome P450 BM3 | Caroline S. Miles, Michael A. Noble, Jane Murdoch, Stephen K. Chapman, Graeme A. Reid and Andrew W. Munro |

- | | | |
|-----|--|---|
| E10 | The flavoprotein domains of nitric oxide synthase isoforms: site of possible regulatory control of flavin to heme electron transfer | R. Timothy Miller, Pavel Martásek, Jonathan S. Nishimura, Satya Panda, Dawn E. Harris, Linda J Roman, Jung-Ja P. Kim and Bettie-Sue Masters |
|-----|--|---|

Electron Transfer in P450 Systems

- | | | |
|-----|---|---|
| F01 | Flavoprotein interactions and electron transfer – the human cytochrome P450/NADPH-cytochrome P450 reductase system | Alexander Grunau, Aldo Gutierrez, Nigel S. Scrutton, Mark Paine, Lu-Yun Lian, C. Roland Wolf and Gordon C. K. Roberts |
| F02 | Redox enzymology of prokaryotic and mammalian cytochrome P450 reductases | Andrew W. Munro, Laura Robledo, Michael A. Noble and Stephen K. Chapman |
| F03 | Crystallographic insights into the hydride transfer mechanism of NADPH-cytochrome P450 reductase | Paul A. Hubbard, Rosemary Paschke, Anna Shen, Charles B. Kasper and Jung-Ja P. Kim |
| F04 | Flavodoxin as module for transferring electrons to different c-type and P450 cytochromes in artificial redox chains | Sheila J. Sadeghi, Yergalem T. Meharenn and Gianfranco Gilardi |
| F05 | Mechanic studies on the one-electron reduction of quinones by neuronal nitric-oxide reductase domain | Hiroyuki Matsuda, Shigenobu Kimura and Takashi Iyanagi |
| F06 | Calmodulin activates intramolecular electron transfer between the two flavins of neuronal nitric-oxide synthase reductase domain | Hiroyuki Matsuda, Shigenobu Kimura and Takashi Iyanagi |

Electron Transfer, Flavodoxins

- | | | |
|-----|--|---|
| G01 | Kinetics and thermodynamics of FMN binding to <i>Anabaena</i> apoflavodoxin | Javier Sancho, Anabel Lostao, Fatna Daoudi, Antonio Parody-Morreale, Mohammed El Harrou |
| G02 | Construction and investigation of a flavodoxin-azurin redox maquette | Sharmini Alagaratnam, Pieter van Vliet and Gerard W. Canters |
| G03 | Expression of recombinant flavodoxin from <i>Megasphaera elsdenii</i>; effects of mutating the residues (M57, W91) that sandwich the dimethylisalloxazine of the bound FMN | Mary E. Gallagher, Susan M. Geoghegan and Stephen G. Mayhew |
| G04 | Role of conformational dynamics and associated electrostatic and hydrogen bonding interactions in the regulation of redox potentials in the <i>C. beijerinckii</i> flavodoxin | Richard P. Swenson, Mumtaz Kasim, Luke H. Bradley and Larry Druhan |
| G05 | Effects of pH on the ¹³C and ¹⁵N NMR spectra of the hydroquinone of <i>Desulfovibrio vulgaris</i> flavodoxin and its G61A mutant | Garry N. Yalloway, Stephen G. Mayhew, Sjef J. Boeren and Jacques Vervoort |
| G06 | Studies on urea-unfolding of flavodoxin and apoflavodoxin from <i>Desulfovibrio vulgaris</i> (Hildenborough) | Brian Ó Nualláin and Stephen G. Mayhew |

- G07 **Construction and investigation of non-covalently linked flavodoxin-[8 α -imidazolyl-N-alkyl-yl-amino-riboflavin]-Cu²⁺ His117Gly-azurin heterodimers** Pieter van Vliet, Pieter van de Klein, Kristiane Schmidt, Marcellus Ubbink, Willem van Berkel, Walter van Dongen, Jacques H. van Boom and Gerard W. Canters

Electron Transfer, Various

- H01 **Cloning and overexpression of the bifunctional *Neurospora crassa* chorismate synthase** Karina Kitzing, Nikolaus Amrhein and Peter Macheroux
- H02 **Amino acid substitutions near the FAD in NADH-cytochrome *b*₅ reductase: roles of Arg⁶³ and Thr⁶⁶ in the electron transfer** Shigenobu Kimura and Takashi Iyanagi
- H03 **Comparison of the spectral properties between pig and *Megasphaera elsdenii* electron-transferring flavoproteins** Kyosuke Sato, Yasuzo Nishina and Kiyoshi Shiga
- H04 **Isotope effects on electron transfer in xanthine oxidase** Russ Hille and Robert F. Anderson
- H05 **On the mechanism of the iron-sulfur flavoprotein 4- hydroxybutyryl-CoA dehydratase – implication of radicals in an anaerobic unusual dehydration catalysis** Irfan Çinkaya, Thomas A. Link, Richard Cammack, Antonio J. Pierik and Wolfgang Bueckel
- H06 **The emerging family of A-type flavoproteins: *Desulfovibrio gigas* rubredoxin – oxygen oxidoreductase as a case study** Cláudio M. Gomes, Alain Wasserfallen, António V. Xavier, Jean Le Gall and Miguel Teixeira
- H07 **Formation of ETF hydroquinone in the TMADH/ETF protein complex** Mei-Huei Jang, Nigel S. Scrutton and Russ Hille
- H08 **Evidence that *Megasphaera elsdenii* synthesises two different electron-transferring flavoproteins** Zuhair Nasrallah, Hugh O'Neill and Stephen G. Mayhew