

Metalloproteins: original publications (since 1995)

- Functional expression of the quinoline 2-oxidoreductase genes (qorMSL) in Pseudomonas putida KT2440 and in P. putida 86-1 qor pUF1 and analysis of the Qor proteins
U. Frerichs-Deeken, B. Goldenstedt, R. Gahl-Janßen, R. Kappl, J. Hüttermann and S. Fetzner
Eur. J. Biochem. **270**, 1567-1577 (2003)
- The influence of laccase on the chemo-enzymatic synthesis of lignin graft-copolymers
C. Mai, W. Schormann, A. Hüttermann, R. Kappl, and J. Hüttermann
Enzyme and Microbial Technology **30**, 66-72 (2002)
- Hydrogenases in the "active" state: determination of g-matrix axes and electron spin distribution at the active site by 1H ENDOR spectroscopy
A. Müller, I. Tscherny, R. Kappl, E. C. Hatchikian, J. Hüttermann, and R. Cammack
J. Biol. Inorg. Chem. **7**, 177-194 (2002)
- On the Mode of Hexacoordinated NO-Binding to Myo- and Hemoglobin: Variable-Temperature EPR Studies at Multiple Microwave Frequencies
P. Schmidt, R. Kappl, and J. Hüttermann
App. Magn. Res. **21**, 423-440 (2001)
- Xanthine dehydrogenase from Pseudomonas putida 86: specificity, oxidation-reduction potentials of its redox-active centers, and first EPR characterization
K. Parschat, C. Canne, J. Hüttermann, R. Kappl and S. Fetzner
Biochim. Biophys. Acta (Protein Structure ...) **1544** (1-2), 151-165 (2001)
- Enzymatic activation of lignin leads to an unexpected copolymerization with carbohydrates
A. Hüttermann, A. Majcherczyk, A. Braun-Lüllemann, C. Mai, M. Fastenrath, A. Kharazipour, J. Hüttermann and A.H. Hüttermann
Naturwissenschaften **87**, 539-541 (2000)
- Probing Magnetic Properties of the Reduced [2Fe-2S] Cluster of the Ferredoxin from Arthrospira platensis by 1H ENDOR Spectroscopy
C. Canne, M. Ebelshäuser, E. Gay, J.K. Shergill, R. Cammack, R. Kappl and J. Hüttermann
JBIC **5**, 514-526 (2000)
- Observation of two paramagnetic species in electron transfer reactions within cesium modified X and Y zeolites
R. I. Samoilova, A. A. Shubin, M. K. Bowman, J. Hüttermann and S.A. Dikanov
Chem. Phys. Lett. **316**, 402-408 (2000)
- The active site of purple acid phosphatase from sweet potatoes (Ipomoea batatas) - Metal content and spectroscopic characterization
A. Durmus, C. Eicken, B. H. Sift, A. Kratel, R. Kappl, J. Hüttermann and B. Krebs
European Journal of Biochemistry **260** (3), 709-716 (1999)
- Kinetics and Interactions of Molybdenum and Iron-Sulfur Centers in Bacterial Enzymes of the Xanthine Oxidase Family: Mechanistic Implications
C. Canne, D. J. Lowe, S. Fetzner, B. Adams, A. T. Smith, R. Kappl, R.C. Bray and J. Hüttermann
Biochemistry **38**, No. 42, 14077-14087 (1999)
- Flavonol 2,4-dioxygenase from Aspergillus niger DSM 821, a type 2 CuII-containing glycoprotein
H.-K. Hund, J. Breuer, F. Lingens, J. Hüttermann, R. Kappl and S. Fetzner
Eur. J. Biochem. **263**, 871-878 (1999)
- Characterization of Bimodal Coordination Structure in Nitrosyl Heme Complexes through Hyperfine Couplings with Pyrrole and Protein Nitrogens
A.M. Tyryshkin, S.A. Dikanov, E.J. Reijerse, C. Burgard and J. Hüttermann
Journal of the American Chemical Society **121**, No. 14, 3396-3406 (1999)

- Probing Structural and Electronic Properties of the Oxidized (Fe₄S₄)₃₊ Cluster of Ectothiorhodospira halophila iso-II High-Potential Iron-Sulfur Protein by ENDOR Spectroscopy
 R. Kappl, S. Ciurli, C. Luchinat and J. Hüttermann
Journal of the American Chemical Society **121**, 1925-1935 (1999)
- Proton ENDOR spectroscopy of cyanide-inhibited copper-zinc superoxide dismutase in randomly oriented samples
 H.-J. Scholl, J. Hüttermann and M.-S. Viezzoli
Inorganica Chimica Acta **273**, 131-141 (1998)
- Bacterial Degradation of Quinoline and Derivatives - Pathways and Their Biocatalysts
 S. Fetzner, B. Tshisuaka, F. Lingens, R. Kappl and J. Hüttermann
Angew. Chem. Int. Ed. **37**, 576-597 (1998)
- Reconstitution and characterization of the Polynuclear Iron-Sulfur Cluster in Pyruvate Formate-lyase-activating Enzyme. Molecular properties of the holoenzyme form
 R. Külzer, T. Pils, R. Kappl, J. Hüttermann and J. Knappe
J. Biol. Chem. **273**, 4897-4903 (1998)
- Probing the ground state of the purple mixed valence Cu(A) center in nitrous oxide reductase: a CW ENDOR (X-band) study of the ⁶⁵Cu, ¹⁵N-histidine labeled enzyme and interpretation of hyperfine couplings by molecular orbital calculations
 F. Neese, R. Kappl, J. Hüttermann, W.G. Zumft and P.M.H. Kroneck
JBIC **3**, 53-67 (1998)
- A divalent metal site in the small subunit of the manganese-dependent ribonucleotide reductase of Corynebacterium ammoniagenes
 K. Blaszyk, U. Griepenburg, R. Kappl, J. Hüttermann and G. Auling
Biochemistry **37**, No. 22, 7992-7996 (1998)
- Comparative EPR and Redox Studies of Three Prokaryotic Enzymes of the Xanthine Oxidase Family: Quinoline 2-Oxidoreductase, Quinaldine 4-Oxidase, and Isoquinoline 1-Oxidoreductase
 C. Canne, I. Stephan, J. Finsterbusch, F. Lingens, R. Kappl, S. Fetzner, and J. Hüttermann
Biochemistry **36**, No.32, 9780-9790 (1997)
- Electron Paramagnetic Resonance of D-Xylose Isomerase: Evidence for Metal Ion Movement Induced by Binding of Cyclic Substrates and Inhibitors
 R. Bogumil, R. Kappl, J. Hüttermann and H. Witzel
Biochemistry **36**, No.9, 2345-2352 (1997)
- Heteronuclear m-1-methylcytosinato-N₃,N₄ complexes containing very short Pt (r) Cu dative bonds
 G. Fusch, E.C. Fusch, A. Erxleben, J. Hüttermann, H.-J. Scholl and B. Lippert
Inorganica Chimica Acta **252**, 167-178 (1996)
- The Active Center of Superoxide Dismutase from Propionibacterium Shermanii
 O. Iakovleva, F. Parak, T. Rimke, B. Meier, J. Hüttermann and R. Kappl
Il Nuovo Cimento **18**, 199-212 (1996)
- An interpretation of EPR spectra of azide ligated superoxide dismutase from Propionibacterium shermanii
 O. Iakovleva, F. Parak, T. Rimke, B. Beier, J. Hüttermann and R. Kappl
European Biophysics Journal **24**, 65-68 (1995)
- Kinetic and spectroscopic studies on a superoxide dismutase from Propionibacterium shermanii which is active with iron or manganese: pH dependence
 B. Meier, C. Michel, M. Saran, J. Hüttermann, F. Parak and G. Rotilio
Biochemical Journal **310**, 945-950 (1995)
- C-Band ESEEM of Strongly Coupled Peptide Nitrogens in Reduced Two-Iron Ferredoxin
 S.A. Dikanov, A.M. Tyryshkin, I. Felli, E.J. Reijerse, and J. Hüttermann

- J. Magn. Res., Series B* **108**, 99-102 (1995)
- Characterization of Histidine Coordination in VO₂⁺-Substituted D-Xylose Isomerase by Orientationally-Selected Electron Spin-Echo Envelope Modulation Spectroscopy
S.A. Dikanov, A.M. Tyryshkin, J. Hüttermann, R. Bogumil and H. Witzel
J. Am. Chem. Soc. **117** (17), 4976-4986 (1995)

Metalloproteins: review articles or published lectures

- Iron Coordination in Metalloproteins: Structural and Electronic Aspects
J. Hüttermann and R. Kappl
Specialist Periodical Reports, Electron Paramagnetic Resonance (The Royal Society of Chemistry), Volume 18, 304-346 (2002)
- The molybdenum-containing hydroxylase of quinoline, isoquinoline, and quinaldine
R. Kappl, J. Hüttermann, and S. Fetzner
"Metal Ions in Biological Systems: Molybdenum and Tungsten. Their Roles in Biological Processes" Eds. H. Sigel, A. Sigel, Vol. 39, 481-537, Marcel Dekker Inc., New York (2002)
- EPR and ENDOR of Metalloproteins
J. Hüttermann and R. Kappl
Specialist Periodical Reports, Electron Paramagnetic Resonance (The Royal Society of Chemistry), Volume 17, 246-304 (2000)
- Role of the Binuclear Manganese(II) Site in Xylose Isomerase
R. Bogumil, R. Kappl and J. Hüttermann
"Metal Ions in Biological Systems: Manganese and its Role in Biological Processes" Eds. H. Sigel, A. Sigel, Vol. 37, 365-405, Marcel Dekker Inc., New York (1999)
- EPR and ENDOR of Metalloproteins
J. Hüttermann and R. Kappl
Specialist Periodical Reports on Electron Spin Resonance (Royal Society of Chemistry), Volume 16, 145-198 (1998)
- Metal Ion Coordination in Metalloproteins: Electron and Structural Characterization by High Resolution Electron Paramagnetic Resonance (EPR) Spectroscopy
J. Hüttermann,
Bioinorganic Chemistry. Transition Metals in Biology and their Coordination Chemistry (A. X. Trautwein, ed.), Research Report, Deutsche Forschungsgemeinschaft, Wiley-VCH, 696-709 (1997)
- EPR and ENDOR of Metalloproteins
J. Hüttermann
Specialist Periodical Reports on Electron Spin Resonance (Royal Society of Chemistry), Volume 15, 59-111 (1996)
- Metalloprotein-ENDOR-Spectroscopy
J. Hüttermann, G. P. Däges, H. Reinhard and G. Schmidt
Proceedings NATO Advanced Research Workshop (Kluwer Publisher) 165-192 (1995)

Radiation damage to DNA: original publications (since 1995)

- Products from polycrystalline DNA constituents after X-irradiation and heavy ion bombardment: Formation of the 5,6-dihydroadduct in thymidine 5'-monophosphate and release of unaltered bases in nucleotides
A.-K. Hoffmann and J. Hüttermann
International Journal of Radiation Biology **76**, No. 9, 1167-1178 (2000)
- Spin transfer from protein to DNA in X-irradiated 'dry' and hydrated chromatin: An Electron Spin Resonance investigation of spectral components between 77 K and room temperature
B. Weiland and J. Hüttermann
International Journal of Radiation Biology **76**, No. 8, 1075-1084 (2000)
- Free radicals from lyophilized 'dry' DNA bombarded with heavy ions as studied by electron spin resonance spectroscopy
B. Weiland and J. Hüttermann
International Journal of Radiation Biology **75**, No.9, 1169-1175 (1999)
- An EPR Study of the Transfer and Trapping of Holes Produced by Radiation in Irradiated Guanine (Thioguanine) Hydrochloride Single Crystals
J. N. Herak, K. Sankovic, D. Krilov and J. Hüttermann
Radiation Research **151**, 319-324 (1999)
- Free radicals from X-irradiated 'dry' and hydrated lyophilized DNA as studied by electron spin resonance spectroscopy: analysis of spectral components between 77 K and room temperature
B. Weiland and J. Hüttermann
International Journal of Radiation Biology **74**, 341-358(1998)
- EPR studies of X-ray irradiated dithiophosphate metal complexes
N.D. Yordanov, M. Zdravkova and J. Hüttermann
Applied Magnetic Resonance **13**, 375-385 (1997)
- Release of unaltered bases from polycrystalline pyrimidine DNA constituents after X-irradiation and bombardment with heavy ions
A.-K. Hoffmann and J. Hüttermann
International Journal of Radiation Biology **72**, 735-744(1997)
- Radiation energy transfer and trapping in single crystals of hemihydrate and hydrochloride of 5-methylcytosine doped with 5-methylthiocytosine. An EPR study
J.N. Herak, K. Sankovic, D. Krilov, M. Jaksic and J. Hüttermann
Radiat. Phys. Chem. **50**, 141-148 (1997)
- The Influence of cysteamine on free radical formation in frozen aqueous matrices containing dCMP
G. Przybytniak, J. Hüttermann, H. Ambroz and B. Weiland
Nukleonika **42**, No. 2, 323-332 (1997)
- Primary free radical formation in randomly oriented DNA: EPR spectroscopy at 245 GHz
B. Weiland, J. Hüttermann and J. van Tol
Acta Chemica Scandinavica **51**, 585-592 (1997)
- Nature of the Chlorine-Centered Paramagnetic Species in Irradiated Crystals of Cytosine Hydrochloride Doped with Thiocytosine
K. Sankovic, D. Krilov, T. Pranjic-Petrovic, J. Hüttermann and J.N. Herak
International Journal of Radiation Biology **70**, No.5, 603-605 (1996)
- Formation of C1'-located sugar radicals from x-irradiated cytosine nucleosides and nucleotides in BeF₂ glasses and frozen aqueous solutions
B. Weiland, J. Hüttermann, M.E. Malone and P.M. Cullis
International Journal of Radiation Biology **70**, No.3, 327-336 (1996)
- EPR Studies of the X-Ray Irradiated Dithiophosphate Salts

N.D. Yordanov, M. Zdravkova, L. Nenchev and J. Hüttermann

Applied Magnetic Resonance **10**, 165-171 (1996)

- Influence of electron scavengers on the radical formation in thymidine-5'-monophosphate and DNA in frozen aqueous solution and glasses

M. Lange, B. Weiland and J. Hüttermann

International Journal of Radiation Biology **68**, No.4, 475-486 (1995)

Radiation damage to DNA: review articles or published lectures

- Free Radical Formation in DNA: Some New Aspects of an Old Problem

J. Hüttermann, W. Gatzweiler, M. Lange and B. Weiland

in: Radiation Damage in DNA: Structure/Function Relationships at Early Times (A. F. Fuciarelli and J. D. Zimbrick, Eds.) Battelle Press, Columbus, Ohio, 75-96 (1995)