

Mark L. Paddock

PUBLISHED WORK (Research Articles -73)

1. M.L. Paddock, J.C. Williams, S.H. Rongey, E.C. Abresch, G. Feher and M.Y. Okamura; "Characterization of Three Herbicide Resistant Mutants of *Rhodospseudomonas sphaeroides* 2.4.1: Structure-Function Relationship"; *Photosynthesis Research*, Vol. 3, pp. III.1.775-III.1.1.778 (Proceedings of the VIIth International Conference on Photosynthesis, Brown Univ., August 1986, editor, J. Biggins), Martinus Nijhoff, Boston (1987) (4 pages).
2. M.L. Paddock, S.H. Rongey, E.C. Abresch, G. Feher and M.Y. Okamura; "Reaction Centers from Three Herbicide Resistant Mutants of *Rhodobacter sphaeroides* 2.4.1: Sequence Analysis and Preliminary Characterization"; *Photosyn Res.* **17** (1988) (22 pages).
3. M.L. Paddock, S.H. Rongey, G. Feher and M.Y. Okamura; "Pathway of Proton Transfer in Bacterial Reaction Centers: Replacement of Glu²¹² in the L Subunit by Glutamine Inhibits Quinone (Q_B) Turnover"; *Proc. Natl. Acad. Sci. USA*, **86** (1989) (5 pages).
4. G. Feher, P.H. McPherson, M. Paddock, S.H. Rongey, M. Schönfeld and M.Y. Okamura; "Protonation of Quinones in Reaction Centers from *Rb. Sphaeroides*"; in *Current Research in Photosynthesis*, Vol. I, pp. I.1.39-I.1.46 (Proceedings of the VIIIth International Conference on Photosynthesis, Stockholm, Sweden, August 1989, Editor M. Baltscheffsky), Kluwer Academic Publishers, Dordrecht, (1990) (7 pages).
5. M.L. Paddock, S.H. Rongey, J.W. Farchaus, G. Feher and M.Y. Okamura; "Site-Directed Mutagenesis of Reaction Centers from *Rhodobacter sphaeroides*"; in *Current Research in Photosynthesis*, Vol. I, pp. I.1.161-I.1.164 (Proceedings of the VIIIth International Conference on Photosynthesis, Stockholm, Sweden, August 1989, Ed. M. Baltscheffsky), Kluwer Academic Publishers, Dordrecht, (1990) (4 pages).
6. M.L. Paddock, P.H. McPherson, G. Feher and M.Y. Okamura; "Pathway of Proton Transfer in Bacterial Reaction Centers: Replacement of Serine-L223 by Alanine Inhibits Electron and Proton Transfers Associated with the Reduction of Quinone to Dihydroquinone"; *Proc. Natl. Acad. Sci.*, **87** (1990) (5 pages).
7. M.L. Paddock, G. Feher and M.Y. Okamura; "Reaction Centers from Three Herbicide Resistant Mutants of *Rhodobacter sphaeroides* 2.4.1: Kinetics of Electron Transfer Reactions"; *Photosynthesis Research* **27** (1991) (11 pages).
8. G. Feher, M.L. Paddock, S.H. Rongey and M.Y. Okamura; "Proton Transfer Pathways in Photosynthetic Reaction Centers Studied by Site-Directed Mutagenesis"; in *Membrane Proteins: Structure, Interactions and Models*, Vol. 125 (Proceedings of the 25th Jerusalem Symposium on Quantum Chemistry and Biochemistry, May 1992. Eds. A. Pullman, J. Jortner, B. Pullman), Kluwer Academic Publishers, Dordrecht, (1992) (14 pages).
9. M.Y. Okamura, M.L. Paddock, P.H. McPherson, S. Rongey and G. Feher; "Proton Transfer in Bacterial Reaction Centers: Second Site Mutations Asn M44→Asp or Arg M233→Cys Restore Photosynthetic Competence to Asp L213→Asn Mutants in RCs from *Rb. Sphaeroides*"; (Proceedings of the IXth International Congress on

Photosynthesis, Nagoya, Japan, August 30-September 5, 1992) (8 pages).

10. R. Hienerwadel, E. Nabedryk, M.L. Paddock, S. Rongey, M.Y. Okamura, W. Mantele and J. Breton; "Proton Transfer Mutants of *Rb. sphaeroides*: Characterization of Reaction Centers by Infrared Spectroscopy"; in *Research in Photosynthesis*, Vol. I, (Proceedings of the IXth International Congress on Photosynthesis, Nagoya, Japan, August 1992, Ed. N. Murata), Kluwer Academic Publishers, the Netherlands, (1992) (4 pages).
11. S.H. Rongey, M.L. Paddock, G. Feher and M.Y. Okamura; "Pathway of Proton Transfer in Bacterial Reaction Centers: Second Site Mutation Asn-M44→Asp Restores Electron and Proton Transfer in Reaction Centers from the Photosynthetically Deficient Asp-L213→Asn Mutant of *Rhodobacter sphaeroides*"; *Proc. Natl. Acad. Sci.* **90** (1993) (5 pages).
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13. P.H. McPherson, M. Schönfeld, M. L. Paddock, M.Y. Okamura and G. Feher; "Protonation and Free Energy Changes Associated with Formation of $Q_B H_2$ in Native and Glu-L212→Gln Mutant Reaction Centers from *Rhodobacter sphaeroides*"; *Biochemistry* **33** (1994) (13 pages).
14. A.J. Chirino, E.J. Lous, M. Huber, J.P. Allen, C.C. Schenck, M.L. Paddock, G. Feher and D.C. Rees; "Crystallographic Analyses of Site-Directed Mutants of the Photosynthetic Reaction Center from *Rhodobacter sphaeroides*"; *Biochemistry* **33** (1994) (10 pages).
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18. M.L. Paddock, G. Feher and M.Y. Okamura; "Pathway of Proton Transfer in Bacterial Reaction Centers: Further Investigations on the Role of SER-L223 Studied by Site-Directed Mutagenesis"; *Biochemistry* **34** (1995) (9 pages).
19. M.S. Graige, M.L. Paddock, J.M Bruce, G. Feher and M.Y. Okamura; "Mechanism of Proton-Coupled Electron Transfer for Quinone (Q_B) Reduction in Reaction Centers of *Rb. sphaeroides*"; *J. Am. Chem. Soc.* **118** (1996) (11 pages).

20. P. Brzezinski, M.L. Paddock, M.Y. Okamura and G. Feher; "Light-Induced Electrogenic Events Associated with Proton Uptake Upon Forming Q_B^- in Bacterial Wild-Type and Mutant Reaction Centers"; *Biochim. Biophys. Acta* **1321** (1997) (7 pages).
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22. E. Nabedryk, J. Breton, M.Y. Okamura and M.L. Paddock; "Direct Evidence of Structural Changes in Reaction Centers of *Rb. sphaeroides* Containing Suppressor Mutations for Asp L213 \rightarrow Asn: A FTIR Study of Q_B Photoreduction"; *Photosyn Res.* **55** (1998) (7 pages).
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OTHER WORK (ABSTRACTS/PRESENTATIONS LAST 5 YEARS)

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