

Peer Reviewed Articles

2016

Chen X., Schreiber K. , **Appel J.**, Makowka A., Fähnrich B., Roettger M., Hajirezaei M., Sönnichsen F., Schönheit P., Martin W.F. and Gutekunst K. (2016)

**The Entner-Doudoroff pathway is an overlooked glycolytic route in cyanobacteria and plants.**

*Proc Natl Acad Sci U S A - PNAS*, **113**(19):5441-5446, [DOI-Link](#)

2014

Beimgraben C., Gutekunst K., Opitz F. and **Appel J.** (2014)

**HypD as a marker for NiFehydrogenases in microbial communities of surface waters.**

*Applied and Environmental Microbiology*, **80**:3776-3782, [DOI-Link](#)

Burroughs NJ, Boehm M., Eckert C., Spence EM, Yu J., Nixon P.J., **Appel J.**, Mullineaux C.W. and Bryan S.J. (2014)

**Solar powered biohydrogen production requires specific localization of the hydrogenase Energy .**

*Env. Sci.*, **7**:3791-3800

Gutekunst K., Chen X., Schreiber K. , Kaspar U., Makam S. and **Appel J.** (2014)

**The bidirectional NiFe-hydrogenase in *Synechocystis* sp. PCC 6803 is reduced by flavodoxin and ferredoxin and is essential under mixotrophic, nitrate-limiting conditions.**

*Journal of Biological Chemistry*, **289**:1930-1937

2011

Bernát G., **Appel J.**, Ogawa T. and Rögner M. (2011)

**Distinct Roles of Multiple NDH-1 Complexes in the Cyanobacterial Electron Transport Network as Revealed by Kinetic Analysis of P700+ Reduction in Various ndh-deficient Strains of *Synechocystis* sp. PCC6803 .**

*J Bacteriol*, **193**:292-295

Inoue S., Ejima K., Iwai E., Hayashi H., **Appel J.**, Tyystjärvi E., Murata N. and Nishiyama Y. (2011)

**Protection by  $\alpha$ -tocopherol of the repair of photosystem II during photoinhibition in *Synechocystis* sp. PCC 6803.**

*Biochim Biophys Acta*, **1807**:234-241

McIntosh C.L., Germer F., Schulz R., Appel J. and Jones A.K. (2011)

**The NiFe-hydrogenase of the cyanobacterium *Synechocystis* sp. PCC 6803 is working bidirectional with a bias to H<sub>2</sub> production.**

*J Am Chem Soc*, **133**:11308-11319

## Publications

Dr. Jens Appel (Period: 1996 to 2016)

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- Appel J.** (2011)  
**The physiology and functional genomics of cyanobacterial hydrogenases and approaches towards biohydrogen production.**  
*Functional Genomics and Evolution of Photosynthetic Systems Eds. RL Burnap and WFJ Vermaas*, **33**:357-381
- 2010
- Barz M., Beimgraben C., Staller T., Germer F., Opitz F., Marquardt C. , Schwarz C., Gutekunst K., Vanselow K.H., Schmitz R., LaRoche J., Schulz R. and **Appel J.** (2010)  
**Distribution analysis of hydrogenases in surface waters of marine and freshwater environments.**  
*PlosOne*, (e13846)
- Schwarz C., Poss Z. , Hoffmann D. and **Appel J.** (2010)  
**Hydrogenases and hydrogen metabolism in photosynthetic prokaryotes.**  
*Adv Exp Med Biol*, **675**:305-348
- 2009
- Schultze M., Forberich B., Rexroth S., Dyczmons N.G., Rögner M. and **Appel J.** (2009)  
**Localization of cytochrome b6f complexes implies an incomplete respiratory chain in cytoplasmic membranes of the cyanobacterium *Synechocystis* sp. PCC 6803.**  
*Biochim Biophys Acta-Bioenergetics*, **1787**:1479-1485
- Germer F., Zebger I., Saggi M., Lenzian F., Schulz R. and **Appel J.** (2009)  
**Overexpression, isolation, and spectroscopic characterization of the bidirectional [NiFe] hydrogenase from *Synechocystis* sp. PCC 6803.**  
*J Biol Chem*, **284**:36462-36472
- 2007
- Gutthann F., Egert M., Marques A. and **Appel J.** (2007)  
**Inhibition of respiration and nitrate assimilation enhances hydrogen evolution in *Synechocystis* sp. PCC 6803.**  
*Biochem. Biophys. Acta- Bioenergetics*, **1767**:161-169
- 2006
- Gutekunst K., Hoffmann D., Lommer M., Egert M., Suzuki I., Schulz-Friedrich R. and **Appel J.** (2006)  
**Metal dependence and intracellular regulation of the bidirectional NiFe-hydrogenase in *Synechocystis* sp. PCC 6803.**  
*International Journal of Hydrogen Energy*, **31**:1452-1459

## Publications

Dr. Jens Appel (Period: 1996 to 2016)

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- Hoffmann D., Gutekunst K., Klissenbauer M., Schulz-Friedrich R. and **Appel J.** (2006)  
**Mutagenesis of all hydrogenase accessory genes of *Synechocystis* sp. PCC 6803 – additional homologs of *hyp A* and *hyp B* are not active in hydrogenase maturation.**  
*FEBS Journal*, **273**:4516-4527
- Ludwig M., Schulz-Friedrich R. and **Appel J.** (2006)  
**Occurrence of hydrogenases in cyanobacteria and anoxygenic photosynthetic bacteria: implications for the phylogenetic origin of cyanobacterial and algal hydrogenases.**  
*J Mol Evol*, **63**:758-768
- 2005
- Backasch N., Schulz-Friedrich R. and **Appel J.** (2005)  
**Influences on tocopherol biosynthesis in the cyanobacterium *Synechocystis* sp. PCC 6803.**  
*J Plant Phys*, **162**:758-766
- Gutekunst K., Phunpruch S., Schwarz C., Schuchardt S., Schulz-Friedrich R. and **Appel J.** (2005)  
**LexA regulates the bidirectional hydrogenase in the cyanobacterium *Synechocystis* sp. PCC 6803 as a transcription activator.**  
*Molecular Microbiology*, **58**:810-823
- 2004
- Zhang P., Battchikova N., Jansen T., **Appel J.**, Ogawa T. and Aro E.M. (2004)  
**Expression and functional roles of the two distinct NDH-1 complexes and the carbon acquisition complex NdhD3/NdhF3 /CupA/Sll1735 in *Synechocystis* sp. PCC 6803.**  
*Plant Cell*, **16**:3326-3340
- 2002
- Dähnhardt D., Falk J., **Appel J.**, van der Kooij T.A.W., Schulz-Friedrich R. and Krupinska K. (2002)  
**The hydroxyphenylpyruvate dioxygenase from *Synechocystis* sp. PCC 6803 is not required for plastoquinone biosynthesis.**  
*FEBS Lett*, (523):177-181
- 2000
- Appel J.**, Phunpruch S., Steinmüller K. and Schulz R. (2000)  
**The bidirectional hydrogenase of *Synechocystis* sp. PCC 6803 works as an electron valve during photosynthesis.**  
*Arch Microbiol*, **173**:333-338

## Publications

**Dr. Jens Appel (Period: 1996 to 2016)**

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1999

Kösling S., **Appel J.**, Schulz R. and Steinmüller K. (1999)  
**The complex I-homologous NAD(P)Hplastoquinone-oxidoreductase of *Synechocystis sp. PCC 6803*.**  
*The phototrophic prokaryotes, ed. Peschek GA, Löffelhardt W, Schmetterer G, Kluwer Academic Publishers, :211-215*

1998

**Appel J.** and Schulz R. (1998)  
**Hydrogen metabolism in organisms with oxygenic photosynthesis - hydrogenases as important regulatory devices for a proper redox poising?**  
*J Photochem Photobiol B: Biol, 47:1-11*

1996

**Appel J.** and Schulz R. (1996)  
**Sequence analysis of an operon of a NAD(P)-reducing nickel hydrogenase from the cyanobacterium *Synechocystis sp. PCC 6803* gives additional evidence for direct coupling of the enzyme to NAD(P)H-dehydrogenase (complex I).**  
*Biochim Biophys Acta, 1298:141-147*