

Bioengineering Photosynthesis

OPINION PAPER
 Christoph Peterhansel, Christian Blume, and Sascha Offermann
Photorespiratory bypasses: how can they work?
 J. Exp. Bot. (2013) 64 (3): 709-715 doi:10.1093/jxb/ers247

REVIEW PAPERS
 Martin A. J. Parry, P. John Andralojc, Joanna C. Scales, Michael E. Salvucci, A. Elizabete Carmo-Silva, Hernan Alonso, and Spencer M. Whitney
Rubisco activity and regulation as targets for crop improvement
 J. Exp. Bot. (2013) 64 (3): 717-730 doi:10.1093/jxb/ers258

Maureen R. Hanson, Benjamin N. Gray, and Beth A. Ahner
Chloroplast transformation for engineering of photosynthesis
 J. Exp. Bot. (2013) 64 (3): 731-742 doi:10.1093/jxb/ers252

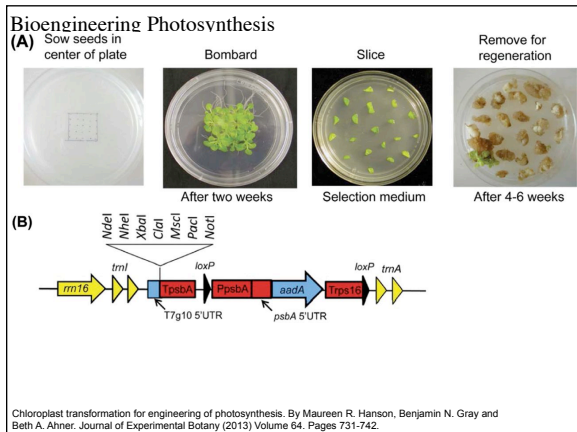
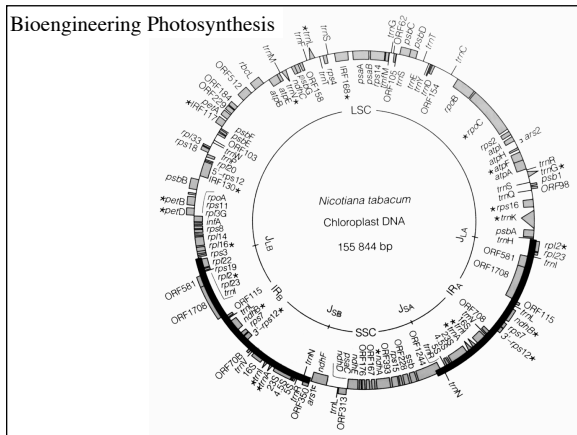
Veronica G. Maurino and Andreas P. M. Weber
Engineering photosynthesis in plants and synthetic microorganisms
 J. Exp. Bot. (2013) 64 (3): 743-751 doi:10.1093/jxb/ers263

G. Dean Price, Jasper J.L. Pengelly, Britta Forster, Jiahui Du, Spencer M. Whitney, Susanne von Caemmerer, Murray R. Badger, Susan M. Howitt, and John R. Evans
The cyanobacterial CCM as a source of genes for improving photosynthetic CO₂ fixation in crop species
 J. Exp. Bot. (2013) 64 (3): 753-766 doi:10.1093/jxb/ers257

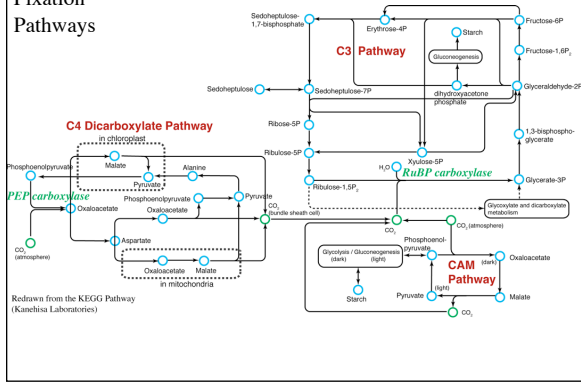
Moritz Meyer and Howard Griffiths
Origins and diversity of eukaryotic CO₂-concentrating mechanisms: lessons for the future
 J. Exp. Bot. (2013) 64 (3): 769-786 doi:10.1093/jxb/ers290

Jan Zarzycki, Seth D. Aven, James N. Kinney, and Cheryl A. Kerfeld
Cyanobacterial-based approaches to improving photosynthesis in plants
 J. Exp. Bot. (2013) 64 (3): 787-798 doi:10.1093/jxb/ers294

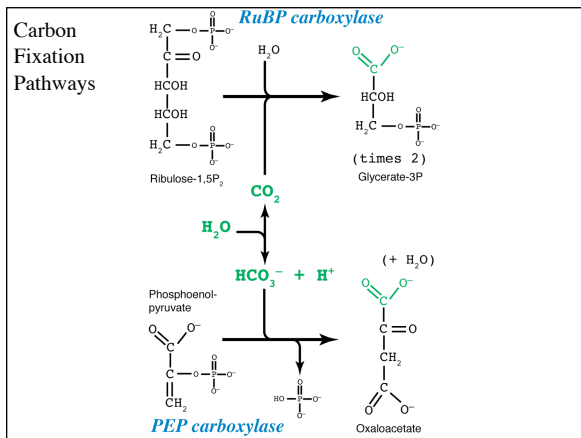
Fanny Ramel, Alexis S. Mialoundama, and Michel Havaux
Nonenzymic carotenoid oxidation and photooxidative stress signalling in plants
 J. Exp. Bot. (2013) 64 (3): 799-805 doi:10.1093/jxb/ers223



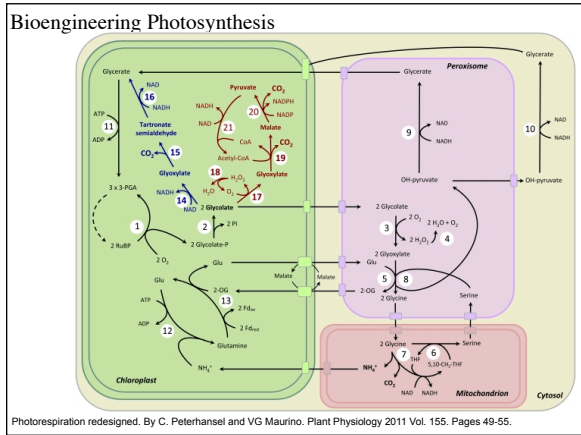
Carbon Fixation Pathways



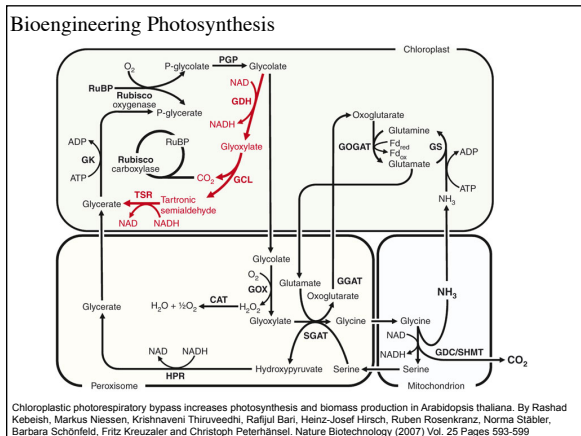
Carbon Fixation Pathways



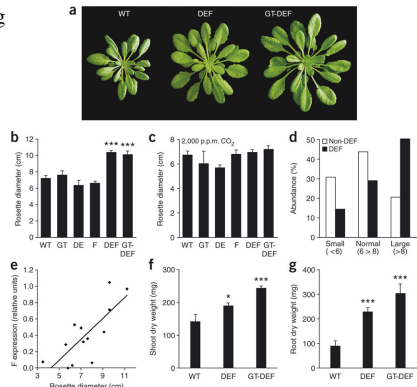
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Bioengineering Photosynthesis

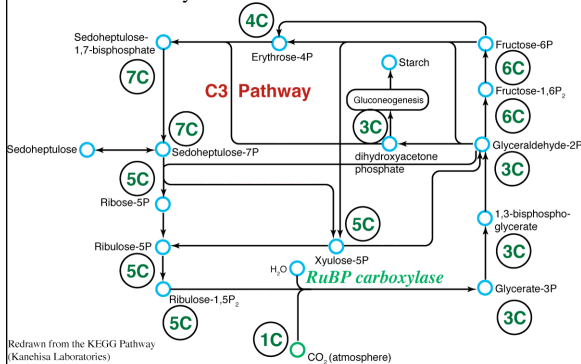


Bioengineering

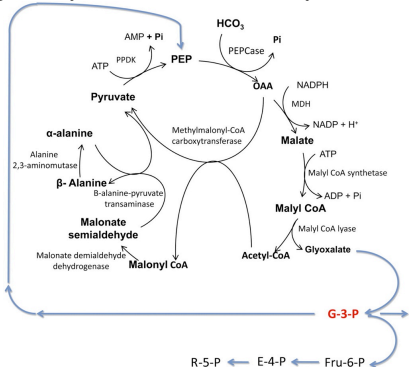


Chloroplastic photorespiratory bypass increases photosynthesis and biomass production in *Arabidopsis thaliana*. By Rashad Kebeish, Markus Niessen, Krishnaveni Thiruveedhi, Rafiul Bari, Heinz-Josef Hirsch, Ruben Rosenkranz, Norma Stähler, Barbara Schönfeld, Fritz Kreuzaler and Christoph Peterhänsel. *Nature Biotechnology* (2007) Vol. 25 Pages 593-599

C3 Fixation Pathway



Bioengineering Photosynthesis --De Novo Pathways



Alternative Carbon Fixation Pathways



Hydroxypropionate Pathway

