

Cyanobacterial signature genes.

Martin KA, Siefert JL, Yerrapragada S, Lu Y, McNeill TZ, Moreno PA, Weinstock GM, Widger WR, Fox GE.

Department of Biology and Biochemistry, University of Houston, Houston, TX, 77204-5001, USA, fox@uh.edu.

A comparison of 8 cyanobacterial genomes reveals that there are 181 shared genes that do not have obvious orthologs in other bacteria. These signature genes define aspects of the genotype that are uniquely cyanobacterial. Approximately 25% of these genes have been associated with some function. These signature genes may or may not be involved in photosynthesis but likely they will be in many cases. In addition, several examples of widely conserved gene order involving two or more signature genes were observed. This suggests there may be regulatory processes that have been preserved throughout the long history of the cyanobacterial phenotype. The results presented here will be especially useful because they identify which of the many genes of unassigned function are likely to be of the greatest interest.

PMID: 16228602 [PubMed - as supplied by publisher]