

Regulatory networks performed by Ferric Uptake Regulator (FUR) proteins in the cyanobacterium Anabaena sp. PCC 7120 Jorge Guío, M. Teresa Bes, M. Luisa Peleato, María F. Fillat and Emma Sevilla



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The cyanobacterium Anabaena sp. PCC 7120 contains three Ferric Uptake Regulator (FUR) paralogues: FurA (Fur), FurB (Zur) and FurC (PerR). These proteins are global regulators that control a wide set of cellular processes, ranging from photosynthesis to nitrogen metabolism. Many of the genes belonging to these functional categories are directly regulated, but some others are indirectly regulated. This indicates that **FUR proteins** could be **cornerstones** of **novel regulatory networks** in cyanobacteria.

In this work, he have used Electrophoretic Mobility Shift Assays (EMSA) to determine the ability of FurA, FurB and FurC to bind to the promoter regions of genes with regulatory functions, namely transcriptional regulators, two component systems and sigma factors. The selection of the genes to be tested was based on the presence of FUR DNA-binding boxes and differential expresion in FUR misregulation strains. Besides, the coregulation of these networks by the global nitrogen regulator NtcA has also been analyzed.











> FUR proteins are cornerstones of regulatory networks containing transcriptional regulators, sigma factors and two component systems

> These networks could play key roles in nitrogen metabolism, since part of them is coregulated by the global nitrogen regulator NtcA

If you have any questions or are interested in our work please do not hesitate to contact me: jguio@unizar.es • Follow us on Twitter! @cyanofur

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