Oxygen Control of Cyclic di-GMP Homeostasis

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The relatively recently discovered dinucleotide cyclic bis(3′ -> 5′)diguanylic acid (also cdiGMP, c-di-GMP, or cyclic di-GMP) is an important and ubiquitous second messenger in bacteria. For the GGDEF-class diguanylate cyclases that synthesize this nucleotide and EAL-class phosphodiesterases that degrade it, a commonly observed coupling of their enzymatic domains to well-known sensory domains has long suggested that they sense environmental signals. Nevertheless, relatively few signal ligands have been identified for these sensors, and even fewer instances of *in-vitro* switching by ligand have been demonstrated. I will give an overview of the current knowledge about signal regulation of GGDEF/EAL enzymes. After this, I will present recent findings by our laboratory about an *Escherichia coli* operon for control of cdiGMP level by O_2.

References

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