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Creation of Stable Porphobilinogen Synthase Knockouts in E. Coli

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Poster Presentation P20

CREATION OF STABLE PORPHOBILINOGEN SYNTHASE KNOCKOUTS IN E. COLI

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Porphobilinogen synthase (PBGS) is the enzyme responsible for the first step in the biosynthesis of tetrapyrroles such as chlorophyll and porphyrin. Our goal is to create a stable porphobilinogen synthase (PBGS) knockout in Escherichia coli. Escherichia coli does not have a natural system to import heme, the end product of the biochemical pathway in this organism. Consequently we also must also have a stable heme uptake system. Using a strain we obtained from another laboratory that has a heme uptake protein from another bacterium S. marcescens, we used PCR products to knockout the PBGS gene, and isolate organisms that must uptake heme from their environment. The PBGS knockout strain is being created so that the genes for PBGS from other organisms can be introduced and studied in an in vivo system.