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The bchC Gene in Bacteriochlorophyll Biosynthesis in Rhodobacter Capsulatus

Marybeth Bartlet
Illinois Wesleyan University

David Bollivar, Faculty Advisor
Illinois Wesleyan University

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This project was designed to test the hypothesis that the *bchC* gene of *R. capsulatus* contributes to bacteriochlorophyll biosynthesis and encodes the 2-hydroxyethyl bacteriochlorophyllide dehydrogenase. The gene was cloned and inserted into *E. coli*, and overexpression of the BchC protein was induced. A mutant strain that accumulates 2-hydroxyethyl bacteriochlorophyllide α, an intermediate in bacteriochlorophyll synthesis, provided a substrate for BchC assays. Activity of the BchC protein was indicated by presence of bacteriochlorophyllide α, as detected by fluorescence analysis. It was demonstrated that the BchC enzyme requires NADPH to perform its catalytic role.