GFP-Labeled Plasmid for Monitoring Horizontal Gene Transfer in Soil. (S03-gentry142857-Poster)

Authors:

- T.J.Gentry* - *University of Arizona*
- I.L.Pepper - *University of Arizona*

Abstract:

The efficient detection of recipient bacteria is a major limitation for gene transfer studies conducted in soil. It is often necessary to screen large numbers of microorganisms in order to detect very low numbers of recipients. We have constructed a plasmid containing the gene for the green fluorescent protein (GFP) for use in gene transfer studies. The gene for GFP was cloned into the mobilizable, broad-host-range plasmid pBHR1 along with genes for 2-chlorobenzoate degradation and nickel resistance, from Burkholderia sp. TH2 and Achromobacter xylosoxidans 31A, respectively. The constructed plasmid was transformed into E. coli JM109 and Pseudomonas putida KT2440. The GFP gene was expressed strongly in both E. coli and P. putida KT2440. The GFP-containing plasmid should allow more rapid detection of plasmid recipients and enhance the detection of plasmid transfer in soil.

Corresponding Author Information:

Terry Gentry
University of Arizona
429 Shantz Building
Tucson, AZ 85721

phone: 5206268292
fax: 5206211647
e-mail: tjgentry@u.arizona.edu

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