

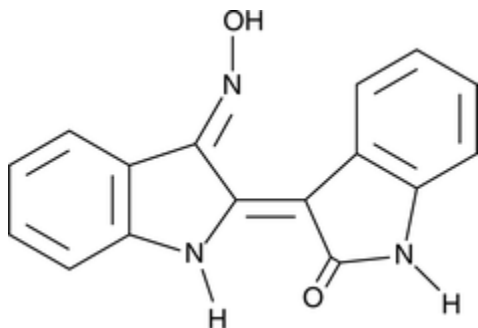
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Identification of two flavin monooxygenases from an effluent treatment plant sludge metagenomic library.

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Abstract



Oxygenases are useful for the production of many industrially important molecules. Screening of an effluent treatment plant (ETP) sludge metagenomic library identified two clones encoding proteins, B1 and B2, with similarity to putative flavin monooxygenases from *Mesorhizobium loti* and *Sphingomonas wittichi*, respectively. The deduced amino acid sequences show only 20% identity, but both have a paired Rossmann fold and a flavin monooxygenase (FMO) motif. B1 and B2 appear to be members of the flavin-containing monooxygenase and the Baeyer-Villiger monooxygenases subfamilies, respectively. When expressed in *Escherichia coli*, the two clones produced activities that oxidized indole to a mixture of indigo and indirubin pigments. These results suggest that B1 and B2 have potential as a biocatalyst in indigo/indirubin production.

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