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Isolation and Characterization of *Pseudomonas otitidis* WL-13 Capable of Decolorizing Triphenylmethane Dyes

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Pseudomonas otitidis WL-13 with the high capability of decolorizing triphenylmethane dyes were isolated from activated sludge of wastewater treatment plant of dyeing industry. The strain exhibited a remarkable color removal capability against several triphenylmethane dyes tested under both shaking and static conditions, even at a high concentration of dye. More than 95% of malachite green and brilliant green wasremoved in color within 12 h at 500 M dye concentration under shaking condition, while crystal violet lost about 13% of its color under the same condition. Decolorization rate increased when yeast extract was supplemented in the M9 medium. The most suitable pH and temperature for color removal were pH 7-9 and 35-40°C, respectively. The observed changes in the visible spectra and the inspection of the bacterial growth indicated color removal by the absorption of dye to cells during incubation with the strain.

Key words: Absorption; decolorization; *Pseudomonas otitidis* WL-13; triphenylmethane dye

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Isolation and Characterization of *Shewanella oneidensis* WL-7 Capable of Decolorizing Azo Dye Reactive Black 5

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A *Shewanella oneidensis* WL-7 with the capability of decolorizing Reactive Black 5 (RB- 5) was isolated from activated sludge of an effluent treatment plant of a textile and dyeing industry. This strain almost completely decolorized 50 μM of RB-5 in 12 h under unaerobic conditions. Optimal color removal (more than 96%) was achieved at 30-35°C, and no noticeable effects on decolorization were observed at different pH values (6.0-8.0). This strain also exhibited a remarkable decolorization capability against other azo dyes under unaerobic conditions, even at a high concentration (300 μM) of dye. A significant increase in the activities of laccase was found in cells obtained after decolorization, indicating the involvement of this enzyme in the color removal process.

Key words: Azo dye; decolorization; Reactive Black 5; *Shewanella oneidensis*