

# Effect of *Streptomyces viridosporus* T7A on kraft lignin

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## Abstract

The ability of the lignino-cellulolytic actinomycete *Streptomyces viridosporus* T7A to attack purified fractions of kraft lignin was examined. In the presence of 0.3% yeast extract, high-molecular weight kraft lignin (MW>3000, ether-insoluble fraction) does not affect growth of this microorganism significantly, whereas low-molecular weight kraft lignin (MW<3000, ether-soluble fraction) inhibits its development. Accordingly, average molecular weight of the ether-insoluble fraction after bacterial growth remained unaltered, as measured by Sephadex G-50 gel permeation chromatography. Slight modifications were detected by high performance liquid chromatography in the ether-soluble fraction after incubation with the microorganism. *S. viridosporus* T7A partially decolorized Remazol Brilliant Blue R during growth on wheat lignocellulose. However, decolorization of either fraction of kraft lignin was not observed. These results suggest that the filamentous bacterium *S. viridosporus* T7A is not suitable for pulp mill effluent treatment.

**Keywords** *Streptomyces viridosporus* T7A, Kraft lignin, Biodegradation