

Characterization of an azo-dye-degrading white rot fungus isolated from Malaysia

ABSTRACT

Sixty-three local white-rot fungi were isolated from soil and wood samples on potato dextrose agar (PDA). All these isolates were screened for their ability to degrade 4 textile azo dyes; Ponceau 2R (C.I. 16450), Orange G (C.I. 16230), Direct Blue 71 (C.I. 34140) and Biebrich Scarlet (C.I. 26905). Out of 40 isolates that gave positive results, only 1 promising isolate which completely degrades all 4 dyes in the minimum amount of time was selected for further investigation. This isolate was sourced from University Putra Malaysia (UPM) Serdang campus. The isolate was tentatively identified as *Coriolopsis* sp. Strain arf5 based on the analysis of the internal transcribed spacer (ITS) region. Nutritional studies on defined solid medium showed that this isolate was only able to degrade the 4 azo dyes under nitrogen-limiting conditions and an additional carbon source (glucose) need to be added to provide sufficient energy for the degradation to occur. Various parameters were optimized.

Keyword: Azo dye; Biodegradation; *Coriolopsis* sp.; White rot fungus