

Isolation and characterization of *Bacillus* sp. 275 exhibiting lignocellulolytic activities

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Lignocellulosic biomass including wood, switch grass and agricultural residues is an attractive natural resource for the production of chemicals and fuels because of its abundance and renewability. In addition, lignocellulosic biomass does not compete with edible biomass such as corn, wheat, sugar cane and sugar beet, and has lower cost than food crops. Despite these advantages, the efficient utilization of the three major components of lignocellulosic biomass is difficult and limited because of its natural recalcitrant properties. In this research, the isolation condition such as the sampling locations and the isolation medium was significant factors to efficiently isolating bacteria with lignocellulolytic activities. *Bacillus* sp. 275 showed cellulolytic, xylanolytic and lignolytic activities by extracellularly produced enzymes. Based on these results, *Bacillus* sp. 275 has a great potential for degrading or utilizing all major three components of lignocellulose. In addition, *Bacillus* sp. 275 is potentially capable of degrading wide ranges of polysaccharides in lignocellulosic biomass.