Isolation and characterization of marine microorganisms producing cellulase

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Marine microorganisms from the seashore of the Kyungsang province in Korea to produce functional biopolymers were isolated. Seventy microorganisms isolated in this study were found to produce functional biopolymers. Some of them hydrolyzed cellulose, carboxymethyl cellulose(CMC) or skim milk. Microorganism to show the activity to hydrolyze cellulose and CMC were incubated in marin broth and the other liquid medium containing 2.0% (w/v) glucose, 0.25% yeast extract, 0.5% K_2HPO_4, 0.1% NaCl, 0.02% $MgSO_4 \cdot 7H_2O$ and 0.06% $(NH_4)_2SO_4$ at 30°C for 72 hr under aerobic conditions 200rpm. Cellulase and CMCase activities of supernatants were assayed. One microorganism cultivated in marine broth showed higher activity to hydrolyze cellulose than *Bacillus amyloliquefaciens* DL-3, which was known as a cellulase-producing strain, whereas six microorganisms cultivated in the other liquid medium showed higher activities of cellulase and CMCase than *B. amyloliquefaciens* DL-3. Optimization of media to produce cellulase by these strains isolated form seawater will be studied.

References

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