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Identification of Marine microorganisms to produce functional biopolymers

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Some of marine microorganisms isolated from the seashore of the Kyungsang province in Korea was found to hydrolyze cellulose, carboxymethyl cellulose (CMC) or skim milk. Isolated microorganisms 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 and their activities to hydrolyze CMC were compared with *B. amyloliquefaciens* DL-3, which was known as a cellulase-producing strain. Two microorganisms showed higher activities of CMCase than *B. amyloliquefaciens* DL-3 were identified by 16S rDNA partial sequencing and gyrase A partial sequencing as *Bacillus subtilis* subsp. *subtilis* and *Bacillus velezensis* and were named as *B. subtilis* subsp. *subtilis* A-53 and *B. velezensis* A-68, respectively. *B. subtilis* subsp. *subtilis* A-53 showed 98.94% similarity of gyrase A base sequence with *B. subtilis* subsp. *subtilis* KCTC 3135T and *B. velezensis* A-68 showed 98.77% smilarity of gyrase A base sequence with *B. velezensis* LMG 22478T.