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Abstracts Résumés

**St. John's, Newfoundland & Labrador, Canada
June 7 – 12, 2005**

**St. John's, Terre-Neuve-et-Labrador, Canada
7 – 12 juin 2005**

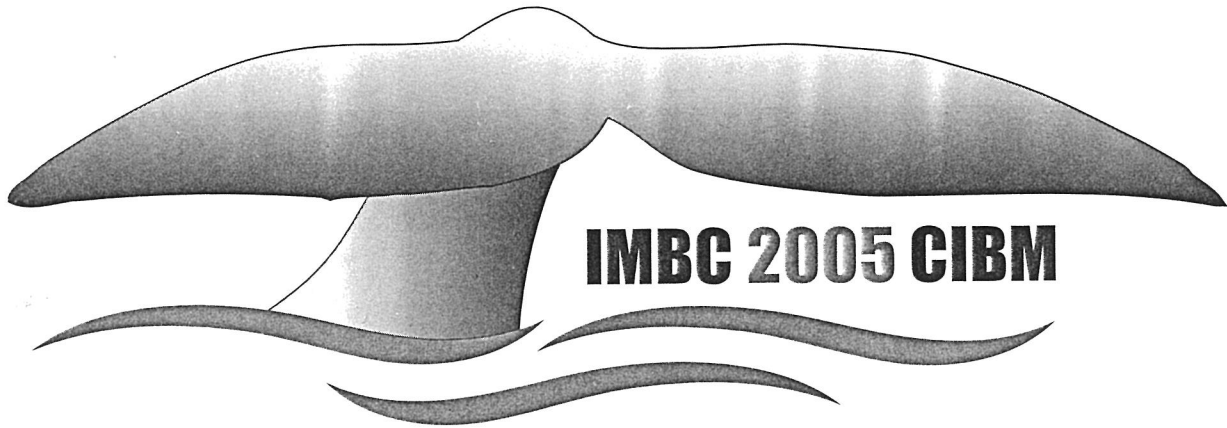
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Diversity of Arctic & Antarctic Marine Bacteria

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The Arctic & Antarctic are representative cold habitats that offer good sources of useful enzymes with activity at low temperature. Various marine bacterial strains were isolated from marine environment around the Korean Arctic Research Station Dasan located at Ny-Ålesund, Svalbard, Norway (79°N, 12°E), and the King Sejong Station in Antarctica (62°S, 58°W). The collected samples were diluted in distilled seawater, and spread on marine agar plates. They cultured at 10°C, and bacterial isolates were preserved in glycerol media (15%, v/v) at -80°C. Phylogenetic analysis of 16S rDNA sequences indicated that the marine bacteria belonged to alpha-, beta-, and gamma-Proteobacteria, the CFB group, and High GC Gram-positive bacteria. They were *Aequorivita*, *Ahrensia*, *Algoriphagus*, *Carnobacterium*, *Cellulophaga*, *Cobetia*, *Colwellia*, *Exiguobacterium*, *Flavobacterium*, *Glaciecola*, *Hydrogenophaga*, *Hyphomicrobium*, *Leifsonia*, *Loktanella*, *Marinobacter*, *Marinomonas*, *Paracoccus*, *Pibocella*, *Plantibacter*, *Planococcus*, *Polaribacter*, *Pseudoaltermonas*, *Pseudomonas*, *Psychrobacter*, *Psychroserpens*, *Roseobacter*, *Shewanella*, *Sulfitobacter*, *Vibrio* and *Zobellia* species. Among the bacteria, we found several candidates for new species or genus. We also screened chitinase-, lipase-, or protease-producing bacteria. Most of them belonged to genus *Pseudoalteromonas*. We expect that these Arctic & Antarctic bacteria can be used to develop new industrial enzymes.



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Molecular Cloning and Expression of a Novel Chitinase Gene from *Vibrio* sp. 98CJ11027

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The *chiK* gene encoding chitinase ChiK was isolated from a marine bacterium, *Vibrio* sp. 98CJ11027. We amplified a partial sequence of the *chiK* using chitinase-specific primer sets. Using inverse PCR cloning method with two specific sets of PCR primers rather than single set, we identified the 4 kb DNA fragment containing *chiK* gene. From the fragment, we amplified the full *chiK* gene and cloned into pUC18 vector designated as pChiK. The recombinant *E. coli* clones harboring pChiK produced a clear zone around the colony in the colloidal chitin plates. Open reading frame of the *chiK* is 2553 bp long encoding a ChiK precursor protein of 851 amino acids, which consist of N-terminal signal peptide of 21 amino acids and a mature ChiK protein with 830 amino acids. The deduced amino acid sequences of *chiK* shows 89% identity with that of *Vibrio carchariae* chitinase. The conserved module of *Vibrio* sp. 98CJ11027 ChiK indicates that the ChiK belongs to the family 18 of glycoside hydrolases.