



## New Arctic Bacterial Isolates with Relevant Enzymatic Potential.

<https://arctichealth.org/en/permalink/ahliterature304889>

Author: Michal Piegza

Wojciech Laba

Miroslava Kacániová

Author Affiliation: Department of Biotechnology and Food Microbiology, Wroclaw University of Environmental and Life Sciences, Chelmonskiego 37, 51-630 Wroclaw, Poland.

Source: Molecules. 2020 Aug 28; 25(17):

Date: Aug-28-2020

Language: English

Publication Type: Journal Article

Abstract: Fragments of wood drifting in the vicinity of Spitzbergen were used for the isolation of microorganisms, carried out using atypical carbon sources: colloidal chitin, cellulose and carboxymethylcellulose, xylan, casein, tributrin and olive oil. Purified cultures were subjected to a three-step identification: with classical methods, using MALDI-TOF MS Biotyper whole-cell protein fingerprinting, and molecular analysis of 16S rDNA. Subsequently, a preliminary assessment of the enzymatic potential of isolates was carried out. As a result, cellulolytic activity was observed in more than 50% of the bacterial strains, exhibiting activity of 0.30-0.40 U/mL. Over 53% of the isolates demonstrated xylanolytic activity, of which the highest reached from 0.40 to 0.90 U. Polygalacturonase activity of 0.003-1.6 was also demonstrated in half of the bacterial strains studied. Proteolytic activity of isolates did not exceed 0.3 U. An important highlight was the ability of fluorescent dye production by certain strains, grown on skim milk-agar, but also on pure meat extract.

PubMed ID: 32872091 [View in PubMed](#) 