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ISOLATION AND IDENTIFICATION OF BACTERIA TRAPPED IN SNOW-FIRN LAYERS OF KING GEORGE ISLAND / ANTARCTIC PENINSULA

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The interest in micro-organisms identification from Antarctica ice layers has become increasingly high since the last decade. Nevertheless, its general potential use is only now becoming evident to the scientific community. During the XXIII Brazilian Antarctic Expedition (2004-2005), recent snow-firn stratified samples were collected from 3 shallow pits at Wanda Glacier/King George Island. Sampling procedures followed typical microbiological sampling protocols and samples were kept frozen until laboratory analysis in Brazil.

Samples collected at Wanda glacier were melted, pre-filtrated, concentrated and added to a DNA marker before being introduced to a high sensitive flow cytometer. For each 10-cm-layer, the technique allowed the fraction of micro-organisms with respect to the total inorganic particulates deposited at the snow-firn samples as well as their log-normal size distribution functions. In addition, samples were cultivated directly from melted ice on liquid media and then isolated. The isolates were submitted to molecular sequencing in order to identify the species which would further on be included in a phylogenetic tree. The respective samples were also submitted to a DGGE analysis.