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Structural characterization and identification of cyclic lipopeptides produced by *Bacillus methylotrophicus* DCS1 strain

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Abstract

Bacillus methylotrophicus DCS1 strain was isolated from diesel contaminated soil and screened for its ability to produce biosurfactants; it was found effective for the production of surface active molecules. The structural characterization of the isolated lipopeptides was studied by a variety of analytical techniques. The organic extract of DCS1 lipopeptides was fractionated by silica gel column chromatography (60 Mesh). Fractions containing lipopeptides were collected and identified by tandem mass spectrometry MALDI-TOF-MS and MALDI-TOF MS2. The crude biosurfactants contains a mixture of homologous lipopeptides with molecular weights between 1016 and 1556 Da. Mass spectrometry analysis of partially purified lipopeptides revealed that it contains different isoforms belonging to three families: surfactin, iturin and fengycin. To identify lipopeptides isoforms, MALDI-TOF MS2