

The petroleum-degrading bacteria *Alcaligenes aquatilis* strain YGD 2906 as a potential source of lipopeptide biosurfactant

Auteurs:

Drifa Yalaoui-Guellal, Samira Fella-Temzi, Salima Djafri-Dib, Sunil Kumar Sahu, Victor U Irorere, Ibrahim M Banat, Khodir Madani

Revue:Fuel

Volume:285

Pages:119112

Éditeur:Elsevier

Description:

Soummam river sediments were used to isolate a biosurfactant-producing and petroleum-degrading bacterium. The strain was identified as *Alcaligenes aquatilis* YGD 2906 using phenotypic characterization and 16S ribosomal RNA sequencing. The culture supernatant of the isolated strain showed no haemolytic activity had an oiled displacement of 23.66 ± 0.57 mm and Emulsification index (E₂₄) of $68.5\% \pm 0.5\%$. The biosurfactant produced in the minimal medium was extracted by acid precipitation and quantified gravimetrically, with a yield of 4.2 ± 0.01 g/L. The crude Biosurfactant was determinate by TLC and MALDI-TOF-MS as a lipopeptide with protein and lipid content of $8.49 \pm 0.19\%$ and $52.66 \pm 1.16\%$ respectively. This lipopeptide structure was confirmed by HPLC-MS/MS. This technique gave two main peak ranges which are typical of surfactins, iturins and fengycin. Tandem mass spectrometry was further ...

Articles Google Scholar:

The petroleum-degrading bacteria *Alcaligenes aquatilis* strain YGD 2906 as a potential source of lipopeptide biosurfactant .D Yalaoui-Guellal, S Fella-Temzi, S Djafri-Dib... - Fuel