

# Biodegradation potential of crude petroleum by hydrocarbonoclastic bacteria isolated from Soummam wadi sediment and chemical-biological proprieties of their biosurfactants

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## Description

This work aims to evaluate the biodegradation potential of petroleum by hydrocarbonoclastic bacteria isolated from Soummam wadi sediments. The chemical-biological properties of their biosurfactants products were also determined. Percentage of petroleum degraded by *Rhodococcus ruber*, *Alcaligenes faecalis* and *Cellulosimicrobium* sp. reached the maximum of  $56.5 \pm 1.2\%$ ,  $52.7 \pm 1.1\%$  and  $49.7 \pm 1.2\%$  respectively. Chemical profile study of the biosurfactants confirms their lipopeptide nature. The antifungal activity of these biosurfactants has given diameters of the zones of inhibition varying between  $11.66 \pm 0.57$  mm and  $18.33 \pm 0.57$  mm. The antioxidant activity showed a low activity for the antiradical power using the DPPH \* and the molybdate test. The biosorption capacity of lead showed maximum biosorption of  $74.91 \pm 2.1$   $\mu\text{g/g}$  of *Rhodococcus ruber* biosurfactants. These bacterial isolates may find ...