

# Discovery of two new proteins involved in hydrocarbons uptake in marine bacteria



Bacteria are the main actors of the biodegradation of hydrocarbons (oil, grease) in seawater and therefore constitute a first level of defense of the marine environment against these harmful compounds. During the last decades, many hydrocarbon-degrading strains have been isolated and their corresponding metabolic pathways elucidated. However, although they represent the first step in the process of biodegradation of hydrocarbons, the molecular mechanisms by which these bacteria access and absorb hydrocarbons that are insoluble in water are still poorly understood.

The work published by UPPA-IPREM researchers in *Mbio* journal of the American Society for Microbiology led to the discovery, in the bacterium *Marinobacter hydrocarbonoclasticus*, of two new genes, *aupA* and *aupB*, coding for proteins that transport hydrocarbons inside the cell where they are further degraded. The function and distribution of these genes indicate that they enable bacteria to proliferate in oil-contaminated seawater and thus contribute to the elimination of hydrocarbons in the marine environment.

**Mounier J, Hakil F, Branchu P, Naïtali M, Goulas P, Sivadon P, Grimaud R.** 2018. *AupA* and *AupB* are outer and inner membrane proteins involved in alkane uptake in *Marinobacter hydrocarbonoclasticus* SP17. *mBio* 9:e00520-18. <https://doi.org/10.1128/mBio.00520-18> (in bold are members of IPREM-UPPA).

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