

SUPPLEMENTARY DATA

PAHs degradation

Bacterial isolates were grown till mid log phase. One ml of the mid log phase culture was transferred to the 100 ml TRIS medium,¹⁹ appended with 100 mg/l of phenanthrene (or pyrene) and incubated in dark at 37°C at 160 rpm for 7 d. After 7 d, PAHs (phenanthrene and pyrene) enriched cultures was diluted and their OD₆₀₀ was adjusted to 0.5 and 2 ml of this diluted culture was transferred to a screw capped glass tube with glass beads of 2 mm diameter to increase the surface area for biofilm growth as described by Shimada *et al.*⁹⁰ The tube was incubated at 37°C for 48 h in static condition. After 48 h, free planktonic cells were aspirated from the tubes and the biofilm grown on the glass beads was rinsed with autoclaved PBS. To this biofilm culture, 5 ml of TRIS mineral medium with phenanthrene (or pyrene) (100 mg/l) was transferred. The tubes were incubated at 37°C under static condition (in dark) for 7 d. After 7 d incubation, the residual phenanthrene was extracted twice with an equal volume of n-hexane. 5 ml of n-hexane was added in the tube and the tube was vortexed for 5 min. After vortexing, hexane-PAHs culture mixture, the tube was centrifuged at 6000 rpm for 10 min for removing cell debris and to separate aqueous and organic phases. The organic phase of the extract was allowed to concentrate and the residual compound was re-suspended in 5 ml of n-hexane. For planktonic culture, after selective enrichment, cell mass was collected by centrifugation, resuspended in TRIS medium and OD₆₀₀ was adjusted to 0.5 to have equal CFU as that of biofilm culture. 5 ml of this suspension was transferred to a tube with phenanthrene or pyrene (100 mg/l) and incubated in dark with shaking condition for 7 d at 37°C.

Residual concentration of phenanthrene and pyrene was determined in an UV/VIS spectrophotometer in terms of absorbance at 292 nm and 335 nm respectively (Obayori et al. 2008). The residual amount was read on a standard curve. The control tubes without any inoculum were similarly treated and quantified. All the degradation experiments were performed in triplicates. The biofilm mediated degradation of phenanthrene and pyrene was extended up to 15 d for isolates with superior degradation potential.

Table S1 List of biofilm forming bacteria identified by 16S rRNA gene sequencing.

Isolates	GenBank accession no.	Deposition no.
<i>Paenibacillus lautus</i> NE3B01	JX273779	MTCC 11807*
<i>Pseudomonas alcaliphila</i> NE3B02	KC771234	DSM 29517 [§]
<i>Alcaligenes faecalis</i> NCW402	JX514370	BCCM-LMG 28186 [#]
<i>Stenotrophomonas acidaminiphila</i> NCW702	JX514371	MTCC 11809*
<i>Lysinibacillus fusiformis</i> NCW903	KC771231	BCCM-LMG 28188 [#]
<i>Pseudomonas mendocina</i> NR802	JX273777	MTCC 11808*
<i>Sporosarcina luteola</i> NR402	KC771233	BCCM-LMG 28192 [#]
<i>Pseudomonas pseudoalcaligenes</i> NP103	JX273778	BCCM-LMG 28190 [#]
<i>Pseudomonas</i> sp. NP202	KC771232	--
<i>Pseudomonas aeruginosa</i> N6P6	KJ461700	BCCM-LMG 28185 [#]

* Isolates deposited at Microbial Type Culture Collection and Gene Bank (MTCC, India); # Isolates deposited at Belgian Coordinated Collections of Microorganisms (BCCM, Belgium); [§] Isolate deposited at Leibniz-Institut DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH

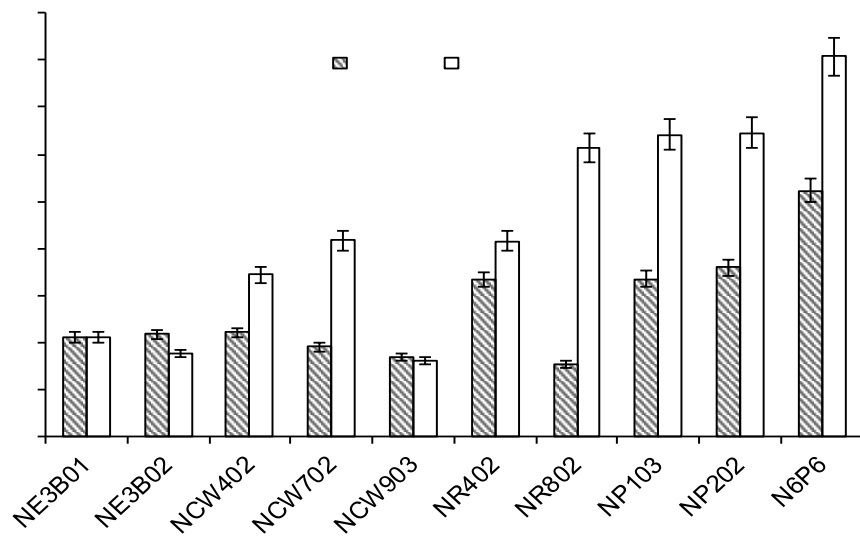


Fig. S1 Biofilm growth over glass surface at 28°C and 37°C quantified in terms of A_{595} , after crystal violet staining. Data are expressed as mean \pm SD of the triplicate experimental data.

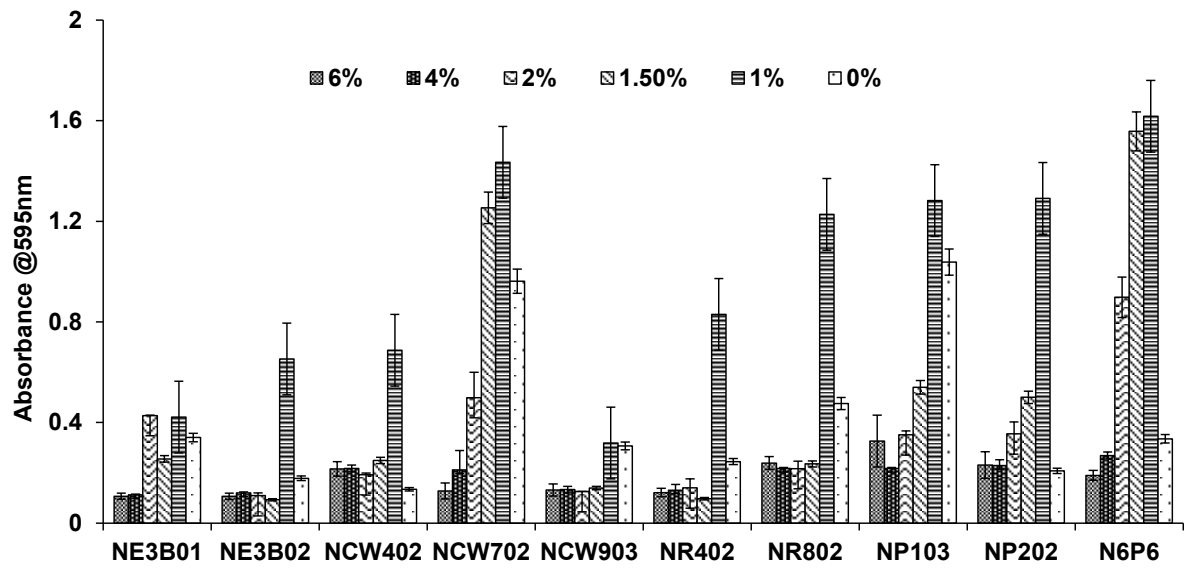


Fig. S2 Biofilm growth of marine bacterial isolates in the presence of different concentration of NaCl in the growth medium. Error bar represents \pm SD.

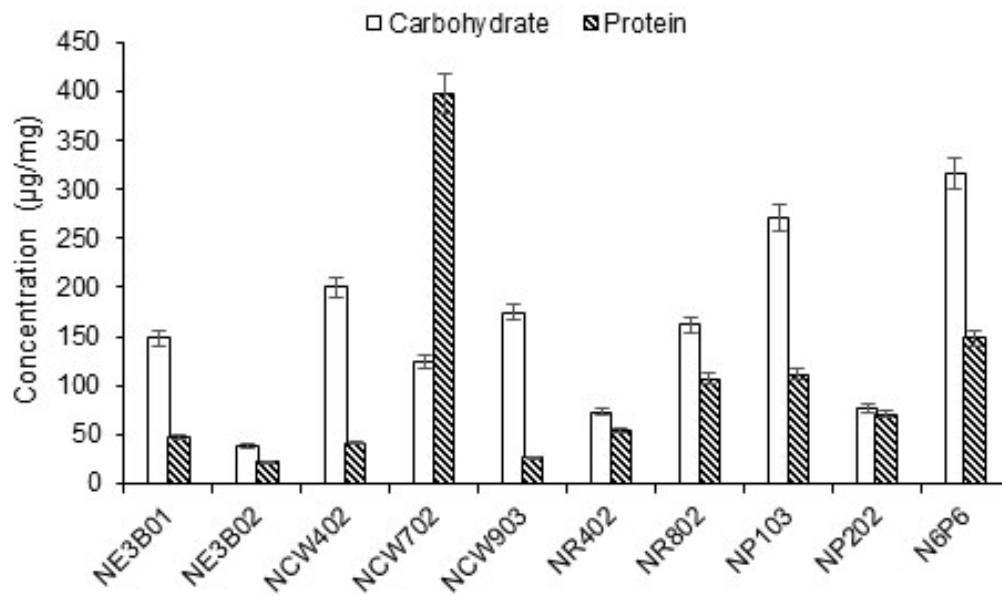


Fig. S3 Total carbohydrate and protein content of the biofilm associated EPS after 48 h of growth. Data are expressed as mean \pm SD of triplicate data.

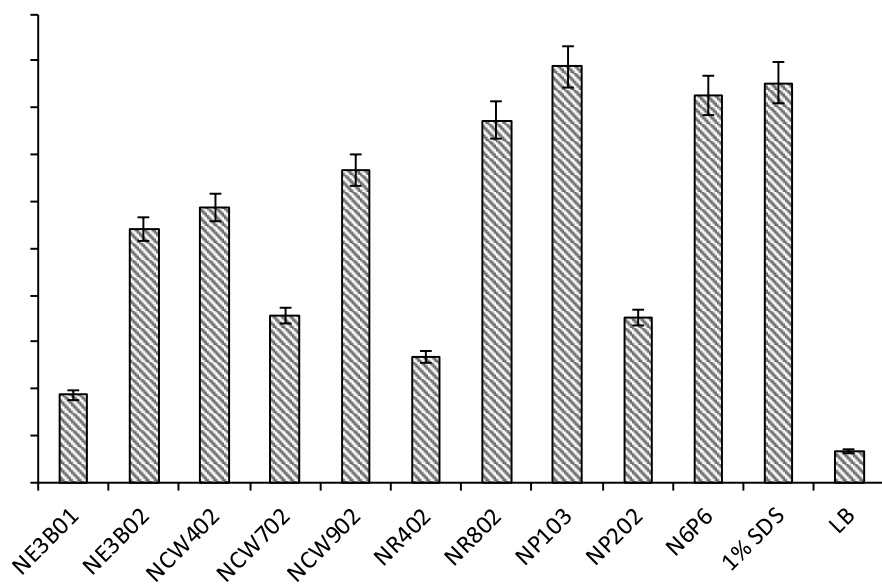


Fig. S4 Emulsification index of biofilm-EPS expressed as E₂₄%.