

Table S2: Query sequences for protein identity searches

| Protein | Group | Query Strain Name | GenBank Accession Number/NCBI Reference Sequence Number | Reference |
|----------------|---------------------------------|---|--|---|
| PahE-NP | PAH Hydratase Aldolase | <i>Novosphingobium pentaromativorans</i> US6-1 | AIT82654.1 | Liang et al., 2019; Liang et al., 2022 (13, 14) |
| PahE-RO | PAH Hydratase Aldolase | <i>Rhodococcus opacus</i> B4 | BAH47216 | Liang et al., 2019; Liang et al., 2022 (13, 14) |
| PahE-MV | PAH Hydratase Aldolase | <i>Mycobacterium vanbaalenii</i> PYR-1 | ABM11319 | Liang et al., 2019; Liang et al., 2022 (13, 14) |
| PahE-PA | PAH Hydratase Aldolase | <i>Pseudomonas aeruginosa</i> PaK1 | BAA12246.1 | Takizawa et al., 1999 (15) |
| NidA | Gram + PAH/Phthalate | <i>Mycobacterium vanbaalenii</i> PYR-1 | AF249301.2 | Kim et al., 2012 (16) |
| PobA | I | <i>Pseudomonas pseudoalcaligenes</i> POB310 | CAA55400.1 | Dehmel et al., 1995 (17) |
| AntA | II | <i>Pseudomonas resinovorans</i> CA10 | WP_011077861.1 | Urata et al., 2004 (18) |
| PahAc | III | <i>Pseudomonas putida</i> OUS82 | BAA20391.1 | Kiyohara et al., 1994 (19) |
| BphA1 | IV | <i>Rhodococcus globerulus</i> P6 | CAA56346.1 | McKay et al., 1997 (20) |
| NagG | Salicylate | <i>Ralstonia</i> sp. U2 | AAD12607.1 | Fuenmayor et al., 1995 (21) |
| PcaH | Protocatechuate 3,4-Dioxygenase | <i>Pseudomonas</i> sp. Strain HR199 | CAB43484.1 | Overhage et al., 1999 (22) |
| PcaA/LigB | Protocatechuate 4,5-Dioxygenase | <i>Pseudarthrobacter phenanthrenivorans</i> Sphe3 | ADX75303.1 | Tsagogiannis et al., 2021 (23) |
| CatA | Catechol 1,2-Dioxygenase | <i>Acinetobacter calcoaceticus</i> | SUU57696.1 | Neidle & Ornston, 1986 (24) |
| CatE/YfiE | Catechol 2,3-Dioxygenase | <i>Bacillus subtilis</i> 168 | BAA09109.1 | Thi Tam et al., 2006 (25) |