**Supplementary Material**

**Fig. S1.** Homology of the flagella-encoding cluster in strain Lw-13eT with *fla1* in *Dinoroseobacter shibae*.

**Fig. S2.** (A) Tolerance of *Po. algae* Lw-13eT to TDA compared to the TDA-susceptible strain *Paracoccus* sp. CP157 examined using a plate-based inhibition test. *Phaeobacter inhibens* DSM 17395 was not inhibited by any concentration, therefore these results are not included. (B) Tolerance of strain Lw-13eT to arsenate but not to arsenite. *Ph. inhibens* DSM 17395 was used as control and showed the same tolerance to 1 mM arsenate, corresponding to the presence of arsenate resistance genes in both genomes. (C) Copper resistance evaluated by growth (+) or lack of growth (-) on agar plates containing specified concentrations of CuCl2 in comparison to *Ph. inhibens* DSM 17395 lacking copper resistance genes. (D)Growth curve of *Po. algae* Lw‑13eT under optimal conditions (28°C, 120 rpm) in modified Marine Broth Difco 2216.

**Fig. S3.** Total ion chromatogram of GC/MS analysis of headspace extract of Lw‑13eT obtained by CLSA. Compound numbering refers to Table S6. Non-assigned peaks are medium constituents.

**Table S1.** Unique genes of *Pseudooceanicola* genomes. Cells highlighted in orange are unique to strain Lw-13eT.

**Table S2**. Selected genes corresponding to traits discussed in the main text. Unique genes for Lw-13eT are marked with a black box. Drugs, drug resistance; Alginate, oligomeric alginate degradation; Defense, defense mechanisms (general stress, heat stress, oxidative stress, compatible solutes, restriction enzymes); Metal, heavy metal tolerance; Squalene, squalene production; Siderophore, siderophore biosynthesis; Cell cycle, cell cycle control.

**Table S3.** Genomic islands of Lw-13eT as predicted by at least one method using IslandViewer v4. Genes in bold are unique to Lw-13eT compared to other *Pseudooceanicola* spp.

**Table S4.** Average nucleotide identities (%ANI) between genomes analyzed in the present study.

**Table S5.** Digital DNA-DNA hybridization (dDDH) values for the genome of strain Lw‑13eT compared to genomes of related species.

**Table S6.** Volatile compounds (terpenes in bold) produced by strain Lw-13eT based on total ion chromatogram from GC-MS analysis (Fig. S3).

**Table S7.** Homologs of the PL15 of strain Lw-13eT in metagenomic bins from different habitats, only showing hits ≥ 60% amino acid identity and ≥ 65% query coverage.

**Table S8.** Fatty acid composition (%) of strain Lw‑13eT compared to related *Pseudooceanicola* type strains and *Pseudopuniceibacterium sediminis* CY03T. −, not detected; tr, trace amounts (<1%). Fatty acids of strain Lw‑13eT were identified from a culture grown on Marine Agar in optimum conditions (Supplementary Methods). Results for the other type strains were obtained from the species descriptions [38, 48, 49, 93] based on comparable analyses.