Genome Sequence of the Sponge-Associated Ruegeria halocynthiae Strain MOLA R1/13b, a Marine Roseobacter with Two Quorum-Sensing-Based Communication Systems

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Genome Sequence of the Sponge-Associated Ruegeria halocynthiae Strain MOLA R1/13b, a Marine Roseobacter with Two Quorum-Sensing-Based Communication Systems

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Ruegeria halocynthiae MOLA R1/13b (MOLA culture collection no. WDCM911; see http://collection.obs-banyuls.fr/index.php) was isolated in 1:5 marine R2A agar (in 75% seawater) at 25°C, from the sponge Crambe crambe collected on 20 January 2010 from a 12-m depth at the Bay of Banyuls (48°28'08"N, 3°08'30"E, France). A major step in our isolation protocol is that sponge homogenates were acclimated for 24 h at 16°C with marine R2A added at a 1:200 final dilution, before strain isolation. Based on its 16S rRNA gene sequences, the strain is phylogenetically related to Ruegeria halocynthiae. MA1-6 (99% sequence identity to 16S rRNA genes) and belongs to the Rhodobacteraceae (Roseobacter clade).

The strain was cultivated in 100 mL of marine broth 2216 medium (BD, Difco, Sparks, MD) at 25°C, from the sponge Crambe crambe (20°C, from the sponge Crambe crambe). A major step in our isolation protocol is that sponge homogenates were acclimated for 24 h at 16°C with marine R2A added at a 1:200 final dilution, before strain isolation. Based on its 16S rRNA gene sequences, the strain is phylogenetically related to Ruegeria halocynthiae. MA1-6 (99% sequence identity to 16S rRNA genes) and belongs to the Rhodobacteraceae (Roseobacter clade).

The strain was cultivated in 100 mL of marine broth 2216 medium (BD, Difco, Sparks, MD) at 25°C over 48 h. DNA was extracted using a cetyltrimethylammonium bromide (CTAB)-based method (1).

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The genome annotation also revealed 3 genes encoding RhlR/YesE-like proteins, known to be involved in long chain homoserine lactones transmembrane transport (3). This is the first report of quorum-sensing genes within the marine species Ruegeria halocynthiae. Thus, this draft genome reinforces previous observations suggesting that marine bacteria are able to communicate using quorum sensing in sponge microenvironments where these cells can be found at high concentrations (4, 5)

Nucleotide sequence accession number. The whole-genome shotgun project has been deposited at DDBJ/EMBL/GenBank under the accession no. IPEZ00000000.

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We declare no conflicts of interest.

REFERENCES


