NOTES

Photobacterium mandapamensis Hendrie et al., a Later Subjective Synonym of *Photobacterium leiognathi* Boisvert et al.

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A comparison of the phenotypic and genotypic characters of the type strain of *Photobacterium leiognathi* Boisvert et al. 1967 with those of the type strain of *Photobacterium mandapamensis* Hendrie et al. 1970 indicates that these organisms belong to one and the same species. The correct name of this species, on the basis of priority, is *P. leiognathi*. American Type Culture Collection strain 25521 is designated as the type strain of *P. leiognathi*.

In a taxonomic paper on luminous bacteria, Hendrie et al. (4) proposed a new species, *Photobacterium mandapamensis*, on the basis of a characterization of four strains. In a recent study (5), we confirmed the validity of this species by means of an extensive phenotypic characterization of 28 strains and, furthermore, showed that *P. mandapamensis* differs from the phenotypically similar *Photobacterium phosphoreum* in a number of traits, including the guanine plus cytosine (G+C) content of its deoxyribonucleic acid (DNA). Since Hendrie et al. (4) did not designate a type strain, we designated American Type Culture Collection (ATCC) 27561 as the type strain of *P. mandapamensis* (5). Recently we obtained a strain of a luminous bacterium (ATCC 25521) which had been isolated from the luminous organ of a sea fish (*Leiognathus*) and named *Photobacterium leiognathi* by Boisvert et al. (1967). Since the phenotypic properties of *P. leiognathi* ATCC 25521 resemble those ascribed to *P. mandapamensis* and since six strains of the latter species have been isolated from the luminous organs of fishes in the family *Leiognathidae* (5), we performed a phenotypic and a genotypic characterization of *P. leiognathi* to determine its relationship to *P. mandapamensis*.

The methods used for phenotypic characterization (1, 5) and in vitro DNA/DNA hybridization (2) have been previously described. The G+C content of the DNA of ATCC 25521 was determined by means of CsCl density gradient centrifugation (6) and related to *P. phosphoreum* strain 439, which had a G+C content of 41.8 mol% (5). The value for strain ATCC 25521 represents an average of three determinations.

Table 1 summarizes the properties of *P. leiognathi* ATCC 25521 and the type strain of *P. mandapamensis* ATCC 27561. *P. leiognathi* has a single polar flagellum (Fig. 1) and a G+C content in its DNA of 43.2 mol%. Similarly, *P. mandapamensis* has a single polar flagellum and a G+C content of 42.9 mol% (5). These strains are phenotypically similar to each other (Table 1). ATCC 25521, however, differs from ATCC 27561 as well as from other strains of *P. mandapamensis* in having a requirement for L-methionine, a property found in a number of strains of *P. phosphoreum* (5). A requirement for amino acid(s) (other than L-methionine) has been previously demonstrated for three strains of *P. mandapamensis* (5). Our characterization of ATCC 25521 has confirmed the properties previously determined by Boisvert et al. (3) for this isolate. Since Boisvert et al. did not formally designate a type strain, we designate ATCC 25521 as the type strain of this species according to the suggestion of H. Boisvert communicated to E. F. Lessel.

In vitro DNA/DNA hybridization experiments with ATCC 27561 (*P. mandapamensis*) chosen as reference have indicated that the relative competitions (2) by the DNAs of ATCC 25521 (*P. leiognathi*) and strain 404 (*P. phosphoreum*) were 84 and 35%, respectively. This finding indicated a close genotypic relationship between *P. leiognathi* and *P. mandapamensis*, as well as a genotypic difference between these strains and *P. phosphoreum*.

The results of the phenotypic characterization, the G+C contents of the DNAs, and the in vitro DNA/DNA hybridization studies indicate that the type strains of *P. leiognathi* and

TABLE 1. Comparison of properties of *P. leiognathi* ATCC 25521 and *P. mandapamensis* ATCC 27561

Trait	<i>P. leiognathi</i>	<i>P. mandapamensis</i> ^a
G+C content (mol %)	43.2	42.9
Number of polar flagella	1	1
Accumulation of poly- β -hydroxybutyrate	+	+
Gas from D-glucose	—	—
Voges-Proskauer reaction	+	+
Arginine dihydrolase	—	—
Growth at 4 C	—	—
30 C	+	+
35 C	—	+
40 C	—	—
Nitrate to nitrite	—	+
Oxidase	—	—
Lipase	—	+
Chitinase	+	+
D-Ribose	+	+
D-Glucose	+	+
D-Mannose	+	+
D-Galactose	+	+
D-Fructose	+	+
D-Gluconate	+	+
N-acetylglucosamine	+	+
Acetate	—	+
Caprate	—	—
Succinate	+	+
Fumarate	+	+
DL-Malate	—	+
DL-Lactate	+	+
DL-Glycerate	+	+
α -Ketoglutarate	—	—
Pyruvate	+	+
Glycerol	+	+
L- α -Alanine	+	+
L-Serine	+	+
L-Threonine	+	—
L-Aspartate	+	+
L-Glutamate	—	+
L-Proline	+	+

^a Data from Reichelt and Baumann (5).

P. mandapamensis should be placed in a single species. On the basis of priority, the correct name of this species is *P. leiognathi* Boisvert et al.

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FIG. 1. Electron micrograph of *P. leiognathi* ATCC 25521, negatively stained (reference 1). $\times 6,500$.

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REPRINT REQUESTS

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