Designation of Type Strains for *Bifidobacterium* Species

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In 1963, the author described seven new species in the genus *Bifidobacterium* Orla-Jensen. However, type strains were not designated for these species, and therefore they are here established as follows: *Bifidobacterium adolescentis* (E194a = ATCC 15703), *B. breve* (S1 = ATCC 15700), *B. infantis* (S12 = ATCC 15697), *B. lactentis* (659 = ATCC 25962), *B. liberorum* (S76e = ATCC 15702), *B. longum* (E194b = ATCC 15707), and *B. parvulorum* (S50 = ATCC 15698). Descriptions of the type strains are given.

In 1963, microbiological investigations (3) of the stools of infants and adults resulted in the proposal of seven new species of the genus *Bifidobacterium* Orla-Jensen (2). However, at that time type strains were not designated for these species. In accordance with Rule 9a of the Bacteriological Code (1), type strains are here designated for these organisms.

MATERIALS AND METHODS

Bacterial strains. The organisms reported in this paper were isolated by the author or by J. Dehnert (strain 659) from the sources indicated in Table 1.

Methods. The media and methods used to characterize the type strains were described previously (3).

RESULTS

The strains cited in Table 1 were included among those on which the original descriptions

of the species with which the strains are associated were based (3). These strains are here designated as the types of the species as indicated in Table 1, wherein the strains are described, and have been deposited in the American Type Culture Collection, Rockville, Md.

LITERATURE CITED

1. International Code of Nomenclature. 1966. Int. J. Syst. Bacteriol. 16(4):459-490.
2. Orla-Jensen, S. 1924. La classification des bactéries lactiques. Lait 4:468-474.
3. Reuter, G. 1963. Vergleichende Untersuchungen über die Bifidus-Flora im Säuglings- und Erwachsenenstuhl. Zentralbl. Bakteriol. Parasitenk. Abt. I Orig. 191:486-507.

TABLE 1. *Descriptions of type strains of Bifidobacterium species*

Species	<i>B. adolescentis</i> Reuter	<i>B. breve</i> Reuter	<i>B. infantis</i> Reuter	<i>B. lactentis</i> Reuter	<i>B. liberorum</i> Reuter	<i>B. longum</i> Reuter	<i>B. parvulum</i> Reuter
Type strain	ATCC 15703 (Reuter E194a)	ATCC 15700 (Reuter S1)	ATCC 15697 (Reuter S12)	ATCC 25962 (Dehnert 659)	ATCC 15702 (Reuter S76e)	ATCC 15707 (Reuter E194b)	ATCC 15698 (Reuter S50)
Source of type strain	Intestine of adult	Intestine of infant	Intestine of infant	Intestine of infant	Intestine of infant	Intestine of adult	Intestine of infant
Morphology	Short, curved rods which may be bifurcated	Very short, slender, club-shaped rods which may be bifurcated	Short, often swollen rods without bifurcations	Slender rods without bifurcations	Long, slender or swollen rods without bifurcations	Long, curved, club-shaped, swollen or dumb-bell shaped rods which may be bifurcated	Short, stout rods without bifurcations
Gram reaction	+	+	+(granule frequently in center of cell)	+(granule frequently in center of cell)	+(granular)	+(Gram-variable)	+(granular)
Endospore	-	-	-	-	-	-	-
Capsule	-	-	-	-	-	+	-
Motility	-	-	-	-	-	-	-
Colonies	Convex to pulvinate, entire, 2-3 mm in diameter, soft or paste-like consistency	Convex to pulvinate, smooth or undulating surface, entire 2-3 mm in diameter, paste-like consistency	Convex to pulvinate, entire, 2-3 mm in diameter, soft, moist or paste-like consistency	Convex to pulvinate, entire, 2-3 mm in diameter, soft, moist, shining	Convex to pulvinate, entire, 2-3 mm in diameter, soft or paste-like consistency	Convex to pulvinate, entire, 2-5 mm in diameter, soft, moist, shining or slimy	Convex to pulvinate, entire, 2-3 mm in diameter, soft or paste-like consistency
Dispersion in NaCl solution	Homogenous	Agglutinating	Homogenous	Homogenous	Homogenous	Homogenous	Agglutinating
Anaerobic	+	+	+	+	+	+	+
Growth in liquid media without added reducing substances	-	(+)	(+)	-	-	(+)	(+)
Catalase	-	-	-	-	-	-	-
Nitratase	-	-	-	-	-	-	-
Carbohydrate fermentation products:							