

Anisomitus miae gen. nov. et sp. nov.

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Table 1: Complete list of names proposed in the current register list.

Proposed Taxon	Etymology	Description	Parent Taxon	Type	Registry URL
Genus <i>Anisomitus</i>	[A.ni.so.mi'tus] Gr. masc. adj. <i>anisos</i> , uneven; Gr. masc. n. <i>mitos</i> , thread; N.L. masc. n. <i>Anisomitus</i> , referring to uneven filamentous form	Genus of bacteria commonly referred to as Segmented filamentous bacteria (SFB); known also as <i>Candidatus</i> Arthromitus (greek for “jointed thread”), as proposed by Snel et al. (1995) . However, “Arthromitus” describes a non-SFB bacteria (Thompson et al., 2012). The genus name <i>Anisomitus</i> (greek for “uneven thread”) was chosen in keeping with the spirit of a morphologically descriptive name for SFB and in recognition of the work by the French zoologist Pierre-Paul Grassé who, in 1925, was the first to describe SFB attached to the intestinal epithelium of a vertebrate, the domestic duck (Grassé, 1925). SFB are Gram variable and spore-forming bacteria that form a monophyletic group in the <i>Clostridiaceae</i> , based on 16S rRNA gene sequence analysis. SFB grow from unicellular bacteria of approximately 1 micrometer in length into filaments reaching over 80 micrometer in length. Particular characteristics include a tip-like structure, present on both the unicellular and filamentous forms, as well as a biphasic filament morphology of thin and smooth to thick and bulbous as the filament ages and unicellular bacteria develop inside the filament to either form spores or to be released from the filament as intracellular offspring. The genus is represented by closed genome sequences of SFB from mice and rat as well as metagenome-assembled genomes from the gut of humans and other vertebrates. Genomes are reduced and range in size from approximately 1.5 to 1.7 Mb, lack nearly all components of the TCA cycle, but include genes involved in flagella synthesis and chemotaxis.	<i>Clostridiaceae</i>	<i>Anisomitus miae</i> ^{Ts}	seqco.de/i:51462
Species <i>Anisomitus</i>	[mi'ae] L. gen. fem. n. <i>miae</i> , of Mia,	This bacterium was characterised from the faeces of children living in Mali. It is in the group of bacteria commonly referred to as Segmented filamentous bacteria (SFB); known also as <i>Candidatus</i> Arthromitus (greek for “jointed thread”), as proposed by Snel et al. (1995) , and now named <i>Anisomitus</i> after the first SFB described in vertebrates by French zoologist Pierre-Paul Grassé (1925). This bacterium is Gram variable and spore-forming, hybridises with the 16S rRNA-targeted oligonucleotide probe (5'-GGG TAC TTA TTG CGT TTG CGA CGG CAC-3'; Urdaci et al., 2001), and has a 16S rRNA gene sequence that clusters within the monophyletic group in the		NCBI Assembly: GCA_054906415.1	

<i>miae</i> ^{Ts} Proposed Taxon	daughter of Etymology	<i>Clostridiaceae</i> that includes SFB from hosts such as the mouse, rat, turkey, chicken, and human Description is approximately 1.6 to 1.7Mb in size with a GC content of approximately 30% and includes	<i>Anisomitus</i> Parent Taxon	^{Ts} Type	seqco.de/i:51464 Registry URL
		genes for chemotaxis and the synthesis of flagella. The bacterium has a short form with an apparent tip and forms filaments that include a tip structure at one end. The filaments can be morphologically uneven, with a more smooth and thin morphology closer to the tip and a thickening with increased distance from the tip including the appearance of more bulbous sections that are particularly pronounced after spore formation.			