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Conservation of the Name *Micropolyspora* Lechevalier, Solotorovsky, and McDurmont over *Faenia* Kurup and Agre and Designation of *Micropolyspora faeni* Cross, Maciver, and Lacey as the Type Species of the Genus

Amended Request for an Opinion

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We request an Opinion conserving the name *Micropolyspora* Lechevalier, Solotorovsky, and McDurmont over *Faenia* Kurup and Agre. If our proposal is accepted, *Micropolyspora faeni* (type strain, ATCC 15347) should be cited as the type species of *Micropolyspora*. We also provide a new description of this genus.

McCarthy et al. (24) requested an Opinion from the Judicial Commission of the International Committee on Systematic Bacteriology that the genus *Micropolyspora* Lechevalier Solotorovsky, and McDurmont 1961 (21) be conserved following the transfer of the type species, *Micropolyspora brevicatena* Lechevalier Solotorovsky, and McDurmont 1961 (Approved Lists 1980), to the genus *Nocardia* Trevisan 1889 (Approved Lists 1980) (32) by Goodfellow and Pirouz (7). They also proposed that *Micropolyspora faeni* Cross, Maciver, and Lacey 1968 should be designated the type species of the conserved genus. Recently, the genus *Faenia* has been proposed by Kurup and Agre (17) to accommodate isolates of *Micropolyspora rectivirgula* (Krassilnikov and Agre 1964) Prauser and Momirova 1970 (Approved Lists 1980), a species synonymous with *M. faeni*.

In this amended request we propose that the Judicial Commission reject *Faenia* and accept our original proposal in the interest of nomenclatural stability and to avoid confusion in the literature, given the widespread use of *M. faeni* in scientific and medical publications as the causative organism of farmers' lung disease and related hypersensitivity pneumonitides.

The Approved Lists of Bacterial Names (31) included four species of *Micropolyspora* apart from *M. brevicatena*, but several other species names appear in the literature. There is little doubt that *M. faeni* and *M. rectivirgula* are synonymous (3, 6, 16, 29) despite considerable differences between the original descriptions of the two species (5, 13). Krassilnikov (12) stated that "*Thermopolyspora*" and *Micropolyspora* were not distinct genera but later classified his isolates as "*Thermopolyspora rectivirgula*" because their method of spore formation excluded them from *Micropolyspora* (13). This was not supported by Henssen (9), who had originally described the method of spore formation in "*Thermopolyspora*" (8). "*Thermopolyspora rectivirgula*" was subsequently found to have wall chemotype IV, similar to that of *M. brevicatena* (20), and the species was tentatively assigned to *Micropolyspora*. However, no formal proposal for transfer was made as stated by Kurup and Agre (7). Indeed, transfer was formally made only in 1970 by Prauser and Momirova (29).

Of the remaining species, "*Micropolyspora fascifera*," like *M. brevicatena*, contains mycolic acids characteristic of *Nocardia* (27, 28), but has not been formally transferred to that genus. "*Micropolyspora viridinigra*" and "*Micropolyspora rubrobrunea*" have been transferred to the genus *Excellospora* Agre and Guzeva 1975 (Approved Lists 1980) (1), and *Micropolyspora internatus* Agre, Guzeva, and Dorokhova 1974 (Approved Lists 1980) (2) and "*Micropolyspora caesia*" (10) have been transferred to the genus *Saccharomonospora* Nonomura and Ohara 1971 (Approved Lists 1980) (16, 26), although none of these transfers has been validated. "*Micropolyspora coerulea*" (30) and "*Micropolyspora thermovirida*" (11) also appear to be typical saccharomonosporas. However, the position of "*M. thermovirida*" cannot be clarified since no strains of this species are extant (16). *Micropolyspora angiospora* Zhukova, Tsyganov, and Morozov 1968 (Approved Lists 1980) (33) has wall chemotype III (16); its position remains to be determined, but it may be a species of *Actinomadura* (Lechevalier, quoted by Kurup [16]) or *Excellospora* (18).

Clearly, *M. internatus* and *M. angiospora*, which are included on the Approved Lists (31), cannot be accommodated in the genus *Micropolyspora*. Thus, this taxon now contains only one species, and the following two questions have to be resolved: (i) can the name *Micropolyspora* be retained, or must it be replaced by *Faenia*; and (ii) can *faeni* be conserved (Rule 56b of the *International Code of Nomenclature of Bacteria* [19]) over *rectivirgula* as the specific epithet for the new type species.

Kurup and Agre (17) argue that because of the removal of the type species, the name *Micropolyspora* becomes illegitimate under Rule 37a of the *International Code of Nomenclature of Bacteria* (19) and that the new generic name, *Faenia*, is thus necessary. However, these authors did not consider whether bacterial systematics was best served by such a change or whether the change advocated would cause more confusion than exists already. Similar considerations apply to the support given by Kurup and Agre (17) to the priority of

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rectivirgula over *faeni* (Rule 42 of the *International Code of Nomenclature of Bacteria* [19]).

Principal 1 of the *International Code of Nomenclature of Bacteria* (19) states that the essential aims of nomenclaure are as follows: stability of names; to avoid or reject the use of names which may cause error or confusion; and to avoid the useless creation of names. We submit that to change a name which has been used in more than 350 papers referring to *M. faeni* in relation to farmers' lung disease and other forms of hypersensitivity pneumonitis, placing the organism in a new genus with a specific epithet which has been used in few publications and which has never been used in reports of respiratory disease, does not aid the stability of names, will lead to much confusion, and is thus a needless creation. It also highlights an undesirable consequence of the new starting date for bacterial nomenclature and the Approved Lists (1 January 1980). If *Faenia* is retained, it seems that the easy way to resolve a difficult taxonomic problem is to create a new name regardless of what has gone before.

Rules 23a and 37a of the *International Code of Nomenclature of Bacteria* (19) allow the retention of a name in a way that excludes the type. Furthermore, the name *Micropolyspora* can be preferred to *Faenia* under Rule 42 of the *International Code of Nomenclature of Bacteria* (19). Also, the definition of *Micropolyspora* can easily be amended to eliminate possible confusion with other sporoactinomycete genera, whereas the definition of *Faenia* remains incomplete. The description of the only species, *Faenia rectivirgula*, contains serious contradictions with other published descriptions of *M. faeni* and *M. rectivirgula*, including that of Kurup (16). Indeed, it is timely to redescribe the genus *Micropolyspora* in light of recent studies (4, 7, 14, 15, 22, 25), as done below.

Micropolyspora Lechevalier, Solotorovsky, and McDurmont 1961 (Approved Lists 1980) emend. Gram-positive, non-acid-fast bacteria with well-developed, branched, septate substrate mycelium 0.5 to 0.8 μm in diameter. The aerial mycelium is 0.8 to 1.2 μm in diameter, rising from the substrate mycelium. Spores formed in chains up to 20 spores long, but usually not more than 5 spores long, on both aerial and substrate hyphae on short, unbranched, lateral or terminal sporophores. Intercalary spores may sometimes be formed. Spore formation basipetal; spores thick walled, especially at sites of contact between spores. Colonies are slow growing, raised with entire or filamentous margins, and colorless or in yellow to brown shades; aerial mycelium sparse. Thermoduric, isolated from spontaneously heated organic substrates and soil, and somewhat xerotolerant. Able to utilize a wide range of organic compounds as sole sources of carbon for energy and growth to degrade a number of substrates. Susceptible to lysozyme.

The wall peptidoglycan contains *meso*-diaminopimelic acid, arabinose, and galactose (wall chemotype IV). Mycolic acids are lacking, but organisms are rich in iso and anteiso branched-chain fatty acids and have polar lipid contents characterized by large amounts of phosphatidylcholine, diphosphatidylglycerol, phosphatidylglycerol, phosphatidylinositol, and phosphatidylmethylethanolamine. Tetra-, hexa- and octa-hydrogenated menaquinones with 9 isoprene units are predominant, with smaller amounts of other menaquinones with 8 and sometimes 10 isoprene units.

The type species is *Micropolyspora faeni* Cross, Maciver, and Lacey 1968; the type strain of this species is strain ATCC 15347.

The characteristics of *M. faeni* have been well described (3, 5, 7), and in a recent extensive comparative study of thermophilic actinomycetes (23) *M. faeni* was readily identified by its good growth and aerial mycelium production in the presence of 10% (wt/vol) NaCl and its very strong activity against guanine, hypoxanthine, and xanthine.

Arguments and precedents for the retention of *M. faeni* as the type species of the genus *Micropolyspora* were given by McCarthy et al. (24) and remain valid. Following these arguments, to maintain a stable nomenclature and to avoid confusion in the literature, especially in light of the misleading description of "*Thermopolyspora rectivirgula*" (13) and the inadequate description of *Faenia rectivirgula* (17), we request that the Judicial Commission of the International Committee on Systematic Bacteriology issue an Opinion conserving the genus *Micropolyspora* and the specific epithet *faeni* over the genus *Faenia* and the specific epithet *rectivirgula*. If these proposals are accepted by the Judicial Commission, *Micropolyspora faeni* (type strain, ATCC 15347) should be cited as the new type species of *Micropolyspora*.

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