

Probiotic nomenclature matters

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Probiotic research has progressed greatly in recent years, to the extent that full genomic sequencing is becoming commonplace for strains used in intervention trials. Unfortunately, examples of inaccurate nomenclature or incomplete taxonomic description of probiotic strains still occurs in the scientific database.

One recent example is a publication by Han and colleagues.¹ In this paper, the names of the probiotics are indicated as “*Lactobacillus subtilis*” and *Streptococcus faecium*. *Streptococcus faecium* is decades old nomenclature, which became outdated in 1984.² Presumably the strain is of the species *Enterococcus faecium*. There is no such microbe as “*Lactobacillus subtilis*.” Perhaps the authors are using this designation as an incorrect name for *Bacillus subtilis*. Furthermore, the full strain designations were not provided for the strains used.

Another example is the use of the name “*Lactobacillus sporogenes*”.³ Presumably a *Bacillus coagulans*, this nomenclature was used in 1932 and was described as a misclassification in Bergey’s Manual in 1939.⁴ Yet misuse of this nomenclature persists.

As members of the board of directors of the International Scientific Association of Probiotics and Prebiotics, we and the rest of the board endorse the FAO/WHO guidelines for probiotics,⁵ which states that proper nomenclature and strain designation is a requirement on a probiotic product. This is also asserted as a necessary step in the conduct and reporting of human trials.⁶ Proper nomenclature and strain

designation are essential to clearly identify what is being tested as a probiotic intervention. Such information is essential to enable others to repeat the study and to clearly understand any safety risks associated with the species being used.

Although it is true that some nomenclature changes are not readily embraced by the scientific community, the nomenclature errors that we call attention to here cannot be excused. Correct nomenclature can be readily discerned from the List of Prokaryotic Names with a Standing in Nomenclature (<http://www.bacterio.net/>), and journals should conform to those recommendations.



We suggest that researchers bear the primary responsibility for proper strain identification and for conforming to systematic nomenclature changes, but journal editors can also play an important role by insisting that proper nomenclature and strain designations be used in any paper to be published on probiotics.

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No potential conflicts of interest were disclosed.

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