Proposal to designate the order *Actinomycetales* Buchanan 1917, 162 (Approved Lists 1980) as the nomenclatural type of the class *Actinobacteria*. Request for an Opinion

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**Abstract**

The name of the class *Actinobacteria* is illegitimate according to Rules 15, 22 and 27(3) because it was proposed without the designation of a nomenclatural type. I therefore propose to designate the order *Actinomycetales* Buchanan 1917, 162 (Approved Lists 1980) as its nomenclatural type, based on Rule 22 of the International Code of Nomenclature of Prokaryotes.

In the framework of the recent proposal to include the rank of phylum in the International Code of Nomenclature of Prokaryotes (ICNP) [1], one of the proposed phylum names is *Actinobacterota*, with the class *Actinobacteria* as its nomenclatural type [2]. However, the name *Actinobacteria* is illegitimate according to Rules 15, 22 and 27(3) because it was proposed without the designation of a nomenclatural type [3].

According to Rule 8 of the ICNP as accepted during the meetings of the International Committee on Systematics of Prokaryotes in Istanbul in 2008 and published in 2011 [4, 5], the name of a class is formed by the addition of the suffix –*ia* to the stem of the name of the type genus of the type order of the class. As there is no genus named *Actinobacter*, it is not possible to propose *Actinobacterales* to serve as the type order of the class *Actinobacteria*. The section on the class *Actinobacteria* in the recent edition of Bergey’s Manual [6] stated that 'upon publication of the class *Actinobacteria*, a type order was not designated. Hence, this name is not validly published under Rule 27 of the Bacteriological Code …' Nevertheless, because of its wide use, the name is adopted for this volume of the Manual. If so designated by the Judicial Commission, the type order is likely to be *Actinomycetales* Buchanan 1917, 162AL [7] emend. Zhi, Li and Stackebrandt 2009, 594 [8], with type genus *Actinomyces* [9].

The Approved Lists of 1980 [10] also give the name of the class *Actinomycetes* Krassilnikov 1949, 328 [11]. The name *Actinomycetes* Krassilnikov 1949 essentially had the same circumscription as *Actinobacteria* Stackebrandt et al. 1997 [3], the latter name proposed without the designation of a type to replace the name *Actinomycetes* Krassilnikov 1949, contravening Rules 15 (Table 2), 22, 27(3), 51b and 55 of the ICNP [12].

The Judicial Commission has been asked to rule on the status of class and subclass names published contrary to Rules 22 and 27 [13]. Two names have been proposed for the class discussed here: *Actinomyces* and *Actinobacteria*. Both are illegitimate because they were proposed without the designation of a nomenclatural type. The name *Actinomycetes* featured in the 1980 Approved Lists [10] and therefore has priority over the name *Actinobacteria* published in 1997 [3]. However, as the name *Actinobacteria* is more widely used in the taxonomic literature in recent years than the name *Actinomycetes*, I request the Judicial Commission to consider designating *Actinobacteria* as the legitimate name of the class, with the order *Actinomycetales* Buchanan 1917, 162 (Approved Lists 1980) as its nomenclatural type:

Class *Actinobacteria* (Stackebrandt, Rainey and Ward-Rainey 1997, 483). (Act.i.no.bac.te’ri.a. Gr. n. actis, actinos a ray, beam; Gr. dim. n. bakterion a small rod; -ia ending to denote a class; N.L. pl. neut. n. *Actinobacteria* the actinomy-cete group of bacteria of diverse morphological properties).

The properties of the class are as given by Stackebrandt et al. [3] and Zhi et al. [8].

Type order: *Actinomycetales* Buchanan 1917, 162 (Approved Lists 1980).

**Funding information**

The author received no specific grant from any funding agency.

**Conflicts of interest**

The author declares that there are no conflicts of interest.
Ethical statement
No experiments with humans or animals were carried out.

References

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