

Outlineoffungi.org - Note 1466 *Pichiales*

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Pichiales M. Groenew., Hittinger, Opulente & A. Rokas

Pichiales was established to accommodate *Pichiaceae* M. Groenew., Hittinger, Opulente & A. Rokas as the type family according to morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). *Pichiaceae* was typified by *Pichia* E.C. Hansen and *Pichia membranifaciens* (E.C. Hansen) E.C. Hansen as type genus and type species, respectively. *Pichiomyces* encompasses several orders, including *Alaninales*, *Pichiales*, and *Serinales*. The order-specific protein families OG0005494 and OG0005374 are identified within *Pichiales* (Groenewald et al. 2023). The Phylogenetic analyses were conducted using DNA sequences encoding LSU rDNA, SSU rDNA, EF-1 α , and mtSSU rDNA to study evolutionary relationships within *Pichiales*, (Daniel et al. 2014). This includes genera from *Pichiaceae* and the newly introduced genus *Allodekкера* by Jutakanoke et al. (2017). Originally, *Komagataella* was classified in *Phaffomycetaceae* by Kurtzman et al. (2011). However, genome-scale analyses have since indicated its reassignment to *Pichiales*. The taxonomic placement of this new order is *Pichiomyces*, *Saccharomycotina*, and *Ascomycota* (Groenewald et al. 2023). The genera included in the *Pichiales*, based on current and previous studies, are as follows: *Allodekкера*, *Ambrosiozyma*, *Brettanomyces* (teleomorph *Dekkera*), *Citeromyces*, *Komagataella*, *Kregervanrija*, *Kuraishia*, *Martiniozyma*, *Ogataea*, *Pichia*, and *Saturnispora*. These genera have been identified and classified within the *Pichiales* (Groenewald et al. 2023).

References

- Daniel HM, Lachance MA, Kurtzman CP. 2014 – On the reclassification of species assigned to *Candida* and other anamorphic ascomycetous yeast genera based on phylogenetic circumscription. *Antonie Van Leeuwenhoek* 106, 67–84.
- Groenewald M, Hittinger CT, Bensch K, Opulente DA, et al. 2023 – A genome-informed higher rank classification of the biotechnologically important fungal subphylum *Saccharomycotina*. *Studies in Mycology* 105(1), 1–22.
- Jutakanoke R, Endoh R, Takashima M, Ohkuma M, et al. 2017 – *Allodekкера sacchari* gen. nov., sp. nov., a yeast species in the Saccharomycetales isolated from a sugar factory. *International Journal of Systematic and Evolutionary Microbiology* 67(2), 250–5.
- Kurtzman C, Fell JW, Boekhout T, editors. 2011 – *The yeasts: a taxonomic study*. Elsevier.

Entry by

Maryam Tavakol Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Published online 24 July 2024