Outlineoffungi.org - Note 836 *Agriosomyces*

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Agriosomyces Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, 513 G.W. Griff, Elshahed, and N.H. Youssef

Agriosomyces was established by Hanafy et al. (2020) to accommodate *A. longus* Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff, Elshahed, and N.H. Youssef as the type species, based on morphology and phylogenetic analysis with ITS and D1-D2 LSU sequence data. The genus is currently monospecific (*A. longus*), that was isolated from fecal samples of a wild mouflon sheep and Boer Goat in 2020. Phylogenetic analysis based on ITS1 and D1/D2 region of the LSU demonstrated its position as a distinct lineage within *Neocallimastigales* (Hanafy et al. 2023). However, its phylogenetic affinity to other genera is unstable and highly dependent on the phylogenetic markers. The lack of additional marker genes beyond ITS and D1/D2 LSU, as well as the lack of genome sequence or transcriptomic datasets, hinders subsequent phylogenomic analysis and prevents its classification with any of the four recently proposed families *Neocallimastigales* (Hanfey et al. 2023). The life cycle of *Agriosomyces* involves the production and release of motile spores (zoospores) from sporangia. These zoospores encyst, germinate, and develop into a thallus structure, anchoring the formation of new sporangia. *Agriosomyces* spores are monoflagellate and are characterized by extremely long flagellum (hence the species epithet *longus*). Sporangia are very homogenous and display no pleomorphism. The genus is characterized by monocentric thallus development, and filamentous rhizoidal growth pattern. The taxonomic placement of *Agriosomyces* is in *Neocallimastigales*, *Neocallimastigomycetes*, *Neocallimastigomycotina*, and *Neocallimastigomycota*.

References:

Hanafy RA, Lanjekar VB, Dhakephalkar PK, Callaghan TM, Dagar SS et al. 2020 – Seven new *Neocallimastigomycota* genera from wild, zoo-housed, and domesticated herbivores greatly expand the taxonomic diversity of the phylum. Mycologia 112(6), 1212-1239. https://doi.org/10.1080/00275514.2019.1696619

Hanafy RA, Wang Y, Stajich J., Youssef NH, Pratt CJ et al. 2023 – Phylogenomic analysis of the *Neocallimastigomycota* Proposal of *Caecomycetaceae* fam. nov., *Piromycetaceae* fam. nov., and emended description of the families *Neocallimastigaceae and Anaeromycetaceae.* International Journal of Systematic and Evolutionary Microbiology 73(2), 5735. https://doi.org/10.1099/ijsem.0.005735

Entry by

Mostafa S. Elshahed Professor Department of Microbiology and Molecular Genetics Oklahoma State University 1110 S. Innovation Way Dr. Stillwater, OK 74074, USA

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