BOTANICHESKII ZHURNAL, 2022, Vol. 107, N 2, p. 132–148

MORPHOLOGICAL AND MOLECULAR GENETIC ANALYSIS OF GENUS *VISCHERIA* (EUSTIGMATACEAE, OCHROPHYTA) IN THE ACSSI ALGOLOGICAL COLLECTION

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DOI: 10.31857/S0006813622020119

Morphological and molecular genetic analysis of four strains of soil eustigmatophyte algae isolated from grey forest soils of Moscow and Tula regions of Russia and kept in the Algal Collection of Soil Science Institute (ACSSI) was carried out. According to the 18S rRNA and ITS2 phylogeny data, the studied strains are the members of the *Vischeria* genus. They are morphologically close to *V. magna*; however, only one ACSSI 026 strain with high statistical support clustered with the authentic SAG 2554 strain. The other strains formed a separate independent group. The paper shows that the taxonomy of the genus seems to be problematic due to the unresolved phylogenetic tree of 18S rRNA and ITS2, the lack of information content of the variable regions V4-V5 and V8-V9 of the 18S rRNA gene and the failure of the CBC approach based on the separation of closely related species in the presence of at least one CBC in the conservative regions of the secondary structure of ITS2. It is assumed that an increase in the number of strains of eustigmatophyte algae isolated from various biotopes, the use of plastid genes or deep sequencing of the whole plastid genome, the study of ultrastructural, physiological, and biochemical characteristics will make it possible to develop the concept of a species in eustigmatophyte algae in general and in the genus *Vischeria* in particular.

Key words: eustigmatophyte algae, light microscopy, phylogeny, 18S rRNA, ITS2, CBC approach

ACKNOWLEDGEMENTS

The work was supported by the Russian Science Foundation, project number 19-74-00030.

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