

## Validation of *Chlorella ohadii* sp. nov. (Chlorellaceae, Trebouxiophyceae)

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“*Chlorella ohadii*” was isolated from desert biological soil crusts in an Israeli desert, one of the most hostile environments on Earth, and is emerging as an exciting new model for studying growth, photosynthesis and metabolism under a wide range of conditions (Treves & al. 2013; Murik & al. 2024). However, “*Chlorella ohadii*” is an invalid designation as it lacks type designation as required by the *International Code of Nomenclature for algae, fungi, and plants* (Madrid Code, Turland 2025). We here validate this new taxon as follows.

### *Chlorella ohadii*, sp. nov.

Description: Unicellular, cells spherical, green, 2–3 µm diameter; under some conditions reaching 7–8 µm diameter; a single chloroplast per cell, with a single pyrenoid developed under low CO<sub>2</sub>.

Type locality: [Nizzana Sand-Dune Field Station](#) of the Hebrew University Arid Ecosystems Research Centre (AERC), Israel; situated close to the Israeli-Egyptian border (30°56'N, 34°23'E, elevation 190 m a.s.l.; average annual rainfall ± 100 mm); leg. Itzhak Ohad, 17.ix.2012.

Holotype: COh 2657; cryopreserved in a metabolically inactive state at RPTU (Rheinland-Pfälzische Technische Universität Kaiserslautern, Germany), Mr. Frosty, two-step cooling using 3% methanol as cryoprotectant.

Ex-type: culture SAG 2657 (isolated from the holotype gathering). This strain is not listed publicly; application may be made to SAG, and a Material Transfer Agreement (MTA) is required.

Illustrations: Treves & al. (2013: fig. 1b, c). Treves & al. (2013: fig. 1a) shows the biological crust from which the species was isolated.

Etymology: Named for Professor Itzhak (‘Itzik’) Ohad (Buzău, Romania, 1930–2016, Israel) of Hebrew University in Jerusalem, who made an enormous contribution to our understanding of photosynthetic mechanisms (Adir & al. 2017) and was the first to isolate and study this organism with Nir Keren and Aaron Kaplan (also of the HUJI).

Registration: <http://phycobank.org/106995>

Sequences: Raw sequencing data are available in the SequenceRead Archive (SRA) under BioProject PRJNA573576.

Distribution: Currently known only from the type locality.

Notes: Murik & al. (2024) referred to this taxon as “*Chlorella sorokiniana* subsp. *ohadii*” but did not validate this designation either. *Chlorella ohadii* can be easily distinguished from *C. sorokiniana* strains UTEX 1663 and SAG 211-8k. B. Cells of *C. ohadii*, about 2 µm in diameter, are smaller than those of *C. sorokiniana* Shihira & R.W.Krauss (1965: 30, figs 31, 32) possess far fewer starch bodies than those observed in *C. sorokiniana*. When placed in glass tubes without agitation, *C. sorokiniana* sedimented much faster in the water column than *C. ohadii* (Treves 2013: fig. 3), perhaps because of the larger number of starch bodies in the former. Taken together, the size, appearance, stability in the water column, and other physiological parameters (e.g. high-light stress resistance), these two related *Chlorella* species clearly differ from one another (Treves 2013: 375, Treves et al. 2016, fig. 1, Figure 5).

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