
Tuber lusitanicum

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Tuber lusitanicum Ant. Rodr. & Muñoz-Mohedano, *sp. nov.*

Etymology. Referring to Lusitania, the name given by the Romans to the western region of the Iberian Peninsula, which now covers the Portuguese area below Douro river and the neighbouring regions of Spanish Extremadura.

Classification — *Tuberaceae*, *Pezizales*, *Pezizomycetes*.

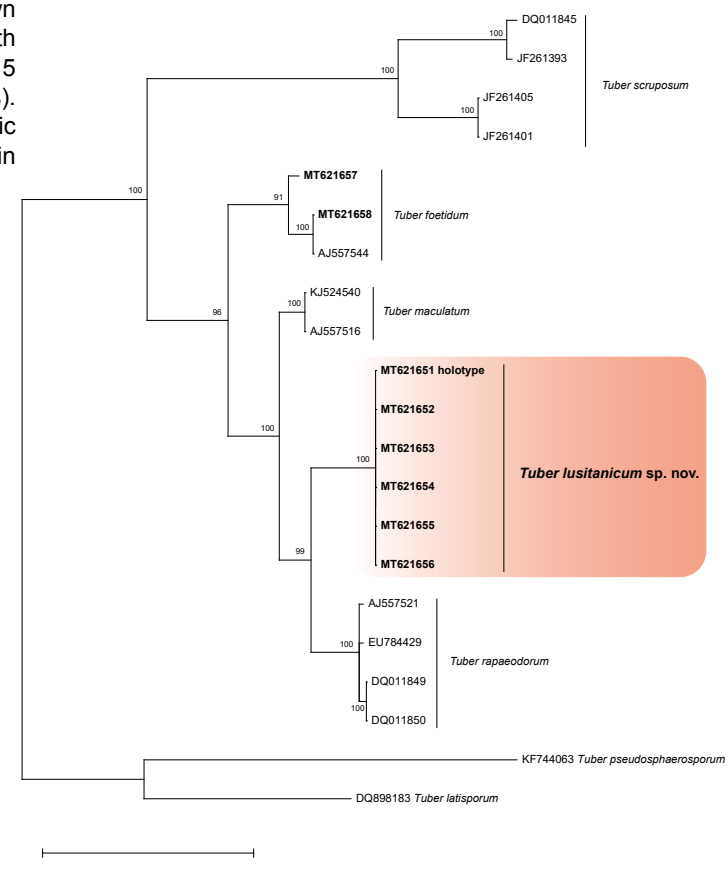
Ascomata hypogeous, 0.5–2 cm in size, subglobose, often lobed or irregular in form, solid, firm, white at first, becoming white-cream, pale yellowish, sometimes with a reddish tinge, darker at maturity, smooth. *Peridium* 300–500 µm thick, two-layered: the outermost pseudoparenchymatous, composed of subglobose or subangular cells, mostly 10–20 µm diam, yellowish, thick-walled, giving rise to hairs at the surface overlying; the inner layer composed of hyaline, thin-walled, interwoven, broad hyphae gradually intermixing into gleba. *Hairs* sparse, commonly 40–60 × 3–5 µm, hyaline, slender, tapered, setose, thick-walled, sometimes 1-septate near the base. *Gleba* whitish when immature, becoming olive brown, dark brown at maturity, marbled with numerous, thin, white veins, some veins ending in the peridium. *Odour* slight and not distinctive. *Asci* inamyloid, 50–80 × 50–60 µm, thin-walled, ellipsoid to subglobose, sessile or short-stalked, (1–)3–4(–5)-spored. *Ascospores* 19–35 × 17–28 µm, Q = 1.1–1.3, excluding ornamentation, the walls 2 µm thick, at first hyaline, becoming yellowish brown at maturity, subglobose to broadly ellipsoid, ornamented with a regular reticulum, alveoli 3–6 µm tall, 6–10 µm long, 2–5 alveolar meshes along the spore length, polygonal (5–6 sides).

Ecology & Distribution — *Tuber lusitanicum* grows in acidic soils of Extremadura dehesas associated to *Quercus* spp. in spring. Currently known only from Cáceres, Spain.

Typus. Spain, Cáceres, Rosalejo, in acidic soil, under *Quercus suber* (*Fagaceae*), 10 June 2012, *A. Rodriguez* (holotype MUB Fung-986, ITS and LSU sequences GenBank MT621651 and MT705332, MycoBank MB835881).

Additional materials examined. Spain, Cáceres, Rosalejo, under *Quercus faginea*, 10 June 2012, *J. Mohedano*, MUB Fung-987 and MUB Fung-988, ITS sequences GenBank MT621652 and MT621653; Belvís de Monroy under *Quercus suber*, 20 May 2012, *J. Mohedano*, MUB Fung-989 and MUB Fung-990, ITS sequences GenBank MT621654 and MT621655; Millanes under *Quercus suber*, 5 June 2006, *J. Mohedano*, MUB Fung-991, ITS sequence GenBank MT621656.

Notes — *Tuber lusitanicum* is a whitish truffle that clusters in the maculatum clade, and is characterised by its white-cream smooth peridium, brown gleba marbled with numerous, thin, white veins and reticulate-alveolate spores. *Tuber lusitanicum* is a sister species to *T. rapaeodorum* (88 % of similarity of ITS sequence), but *T. rapaeodorum* differs by having larger, narrower spores and thinner peridium (Ceruti et al. 2003). It also resembles *T. maculatum* (74 % of similarity of ITS sequence) but *T. maculatum* has a prosenchymatous peridium, lacking hairs and larger spores (Mello et al. 2000).



Maximum likelihood (ML) phylogenetic tree inferred from ITS sequences using RAxML-HPC v. 8 (Stamatakis 2014) on XSEDE in the CIPRES science gateway (Miller et al. 2010). GTR + G was selected as model of evolution for the analysis. The sequences obtained in the present study are highlighted in **bold**. Bootstrap support values (≥ 70 %) are indicated at the nodes. *Tuber latisporum* and *Tuber pseudosphaerosporum* were used as outgroup. The scale bar indicates the expected changes per site.

Colour illustrations. Spain, Cáceres, Rosalejo, *Quercus suber* in Extremadura dehesa where the holotype was collected. Ascocarps; mature ascospores; peridium and hairs. Scale bars = 20 µm.

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