Discosia macrozamiae Crous, sp. nov.

Etymology. Name refers to Macrozamia, the host genus from which this fungus was collected.

Classification — Sporocadaceae, Amphisphaeriaceae, Sordariomycetes.

Conidiomata pycnidial, erumpent, subglobose to lenticular, unicellular, dark brown, to 250 µm diam; wall of polyclonal brown cells. Conidiophores lining the inner cavity, hyaline, smooth, subcylindrical to ampulliform, 0–2-septate, rarely branched at base, 7–15 × 2.5–3 µm. Conidiogenous cells terminal, integrated, hyaline, smooth, subcylindrical, 5–7 × 2–2.5 µm; proliferating inconspicuously percurrently at apex. Conidia cylindrical, 3-septate, pale brown, smooth with appendage at both ends, (25–)30–32–35 × (2.5–)3 µm; basal cell 6–7 µm long, obconic with truncate hilum; second cell from base (9–)10–11(–12) µm long, truncate; third cell 4–5 µm long, with obtusely rounded apex. Appendages cellular, unbranched, filiform, excentric; apical appendage 7–11 µm long; basal appendage 10–16 µm long.

Culture characteristics — Colonies flat, spreading, with moderate aerial mycelium, covering dish after 2 wk at 25 °C. On MEA, PDA and OA surface olivaceous grey, and reverse iron-grey.


Additional material examined. AUSTRALIA, New South Wales, Australian Botanical Garden Mount Annan, on leaves of Macrozamia miquelii, CPC 32109 = CBS 144437, ITS, LSU, tef1 and tub2 sequences GenBank MH327820.1, MH327856.1, MH327884.1 and MH327895.1.

Notes — In a phylogenetic treatment of Discosia, Tanaka et al. (2011) established genera for former ‘sections’ of the genus, recognizing Adisciso (Discosia spp. with a sexual morph), and Immersidiscosia (species occurring on Eucalyptus). Following the ‘one fungus one name’ approach, it is preferable to treat Adisciso under the older name, Discosia. The present collection is allied to, but distinct from, species presently recognized in this subclade, and a new species is introduced to accommodate this taxon.

Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the ITS sequence of CPC 32109 had highest similarity to Discosia cf. pleurochaeta (GenBank AB594777.1; Identities = 546/546 (100 %), no gaps), Discosia italica (GenBank KM678041.1; Identities = 552/556 (99 %), 1 gap (0 %)) and Discosia pseudoartocreas (GenBank NR_132068.1; Identities = 550/556 (99 %), 1 gap (0 %)). The ITS sequences of CPC 32109 and 32113 are identical (556/556). Closest hits using the LSU sequence of CPC 32109 are Adisciso yakushimense (GenBank AB593721.1; Identities = 802/803 (99 %), no gaps). Discosia fagi (GenBank KM678048.1; Identities = 871/873 (99 %), no gaps) and Adisciso tricellularis (GenBank NG_042334.1; Identities = 800/803 (99 %), no gaps). The LSU sequences of CPC 32109 and 32113 are identical (873/873). Closest hits using the tef1 sequence of CPC 32109 had highest similarity to Discosia brasiliensis (GenBank KF827465.1; Identities = 363/399 (91 %), 12 gaps (3 %), Pestalotiopsis diversiseta (GenBank JX399073.1; Identities = 224/249 (90 %), 12 gaps (4 %)) and Pestalotiopsis yanglingensis (GenBank KX895197.1; Identities = 221/246 (90 %), 6 gaps (2 %)). The tef1 sequences of CPC 32109 and 32113 are identical (529/529). Closest hits using the tub2 sequence of CPC 32109 had highest similarity to Discosia brasiliensis (GenBank KF827469.1; Identities = 805/832 (97 %), no gaps), Pestalotiopsis microspora (GenBank AF115396.1; Identities = 782/826 (95 %), no gaps) and Pestalotiopsis paeoniicola (GenBank KF827469.1; Identities = 781/826 (95 %), no gaps). The tub2 sequences of CPC 32109 and 32113 are identical (874/874).

Colour illustrations. Macrozamia miquelii at Australian Botanical Garden Mount Annan; conidiomata sporulating on PNA (scale bar = 250 µm), conidiogenous cells and conidia (scale bars = 10 µm).