
Pseudocercospora microsori

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Pseudocercospora microsori R.G. Shivas, A.J. Young & B.C. McNeil, *sp. nov.*

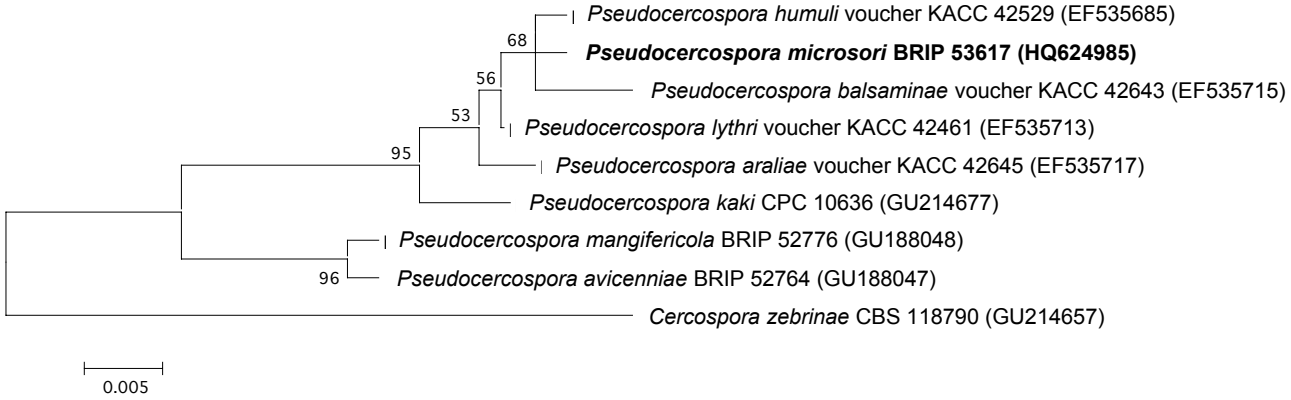
Frondium maculae amphigenae, sparsae ad confluentes, saepe tegentes multum paginae frondium, circulares ad irregulares, marginibus distinctis, inaequalibus et areis chloroticis, finitis venis principibus, 5–15 mm diametro, fuscis rubellis-brunneis, centris cinerascentibus. Conidiomata rubella-brunnea, amphigena, fasciculata, orientia ex stromate maturo substomatali 20–60 µm lato. Conidiophora 5–30 in fasciculis densis vel laxis, geniculata ad sinuosa, inramosa, rubella-brunnea, pallidiora ad apicem, 1–5-septata 30–65 × 3–5 µm. Cellulae conidiogenae terminales in conidiophoro, integratae, subcylindraceae, brunneolae, leves, 10–35 × 2.5–4 µm. Conidia obclavata ad subcylindracea, curvata ad flexuosa, apice rotundato, basi truncata vel paulum obconice truncata, 2–12-septata, 50–110 × 2.5–4 µm, brunneola, levia; hila nec crassata nec fuscata.

Etymology. From the name of the host plant *Microsorum* (*Polypodiaceae*).

Frond spots amphigenous, scattered to confluent, often covering much of the frond surface, circular to irregular with distinct, uneven margins and chlorotic haloes, limited by the main veins, 5–15 mm diam, dark reddish brown with centres becoming grey. *Conidiomata* reddish brown, amphigenous, fasciculate, arise from a well-developed substomatal stroma, 20–60 µm wide. *Conidiophores* 5–30 in dense or loose fascicles, geniculate to sinuous, unbranched, reddish brown, paler towards apex, 1–5-septate 30–65 × 3–5 µm. *Conidiogenous cells* terminal on conidiophore, integrated, subcylindrical, pale brown, smooth, 10–35 × 2.5–4 µm. *Conidia* obclavate to subcylindrical, curved to flexuous, apex rounded, base truncate to slightly obconically truncate, 2–12-septate, 50–110 × 2.5–4 µm, pale brown, smooth; hila not thickened nor darkened.

Typus. Australia, Queensland, Brisbane, West End, Doris Street, on fronds of *Microsorum pustulatum*, 6 Aug. 2010, *B.C. McNeil*, BRIP 53617, holotype; cultures ex-type BRIP 53617, ITS sequence GenBank HQ624985, MycoBank MB517678; Indooroopilly Research Centre, Indooroopilly, 26 Aug. 2010, *B.C. McNeil*, BRIP 53618, paratype.

Notes — Although several *Pseudocercospora* spp. have been recorded on ferns, *P. microsori* is the first on the genus *Microsorum*. Other *Pseudocercospora* spp. with fasciculate conidiophores that have been recorded on ferns include: *P. adianti*[1], *P. arachniodis*[2], *P. athyrii*[2], *P. christellae*[3], *P. cyatheae*[4], *P. lonchitidis*[1], *P. nephrolepidis*[5], *P. phyllitidis*[1], *P. plagiogyriae*[2], *P. pteridicola*[6], *P. pteridophytophila*[2] and *P. thelypteridis*[2]. *Pseudocercospora microsori* is morphologically distinct from these species with its combination of moderately wide (2.5–4 µm) and curved to flexuous conidia. A megablast search of NCBIs GenBank nucleotide database using the ITS sequence revealed high identity to *P. lythri* (GenBank EF535713; Identities = 496/498 (99 %), Gaps = 0/498 (0 %)), *P. humuli* (GenBank EF535685; Identities = 495/498 (99 %), Gaps = 1/498 (0 %)), *P. crousii* (GenBank GQ852756; Identities = 497/502 (99 %), Gaps = 2/502 (0 %)) and *P. araliae* (GenBank EF535717; Identities = 495/499 (99 %), Gaps = 1/499 (0 %)). Genomic DNA of *P. microsori* (holotype) is stored in the Australian Biosecurity Bank (www.padil.gov.au/pbt/).



Maximum Likelihood Tree obtained using the General Time Reversible Model from an ITS sequence alignment generated with MUSCLE in MEGA4. The bootstrap support values from 1 000 replicates are shown at the nodes. Bar represents number of substitutions per site. The species described here is printed in **bold** face. The tree was rooted to *Cercospora zebrinae* CBS 118790 (GU214657).

Colour illustrations. Microsorum pustulatum in a garden, Brisbane with a frond (right) severely infected with *P. microsori*; frond with lesions caused by *P. microsori*; stroma with conidiophores; conidia. Scale bars (left to right) = 1 cm, 10 µm, 10 µm.

References. [1]Crous PW, Braun U. 2003. Mycosphaerella and its anamorphs: 1. Names published in Cercospora and Passalora. CBS Biodiversity Series 1: 1–571. [2]Guo YL, Liu XL, Hsieh WH. 1998. Pseudocercospora. Flora Fungorum Sinicorum, Vol. 9. Science Press, Beijing. [3]Phengsintham P, Chukeatirote E, McKenzie EHC, Moslem MA, Hyde KD, Braun U. 2010. Two new species and a new record of cercosporoids from Thailand. Mycosphere 1: 205–212. [4]Nakashima C, Inaba S, Park JY, Ogawa Y. 2006. Addition and re-examination of Japanese species belonging to the genus Cercospora and allied genera. IX. Newly recorded species from Japan (4). Mycoscience 47: 48–52. [5]Kirschner R, Chen CJ. 2007. Foliicolous hyphomycetes from Taiwan. Fungal Diversity 26: 219–239. [6]Braun U, Melnik VA. 1997. Cercosporoid fungi from Russia and adjacent countries. Proceedings of the Komarov Botanical Institute, Russian Academy of Sciences.

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