First report of *Cytospora chrysosperma* causing canker on staghorn sumac in China

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Staghorn sumac (*Rhus typhina*) is an exotic plant widely distributed in China. During 2020, a canker disease has been observed on approximately 40% of staghorn sumac in Alar area, Xinjiang (40°32'46"N, 81°17'34"E), China. The affected branches were yellowish-brown, and the inner bark was black. Under moist conditions, spore masses jutted out in long, reddish-orange, coiled tendrils. Samples were collected from nine symptomatic trees. The pathogen was isolated from surface-disinfected tissues and incubated on PDA medium at 26 °C for 5 days. Colonies had whitish-orange, fluffy mycelium. Multilocules (with common walls) were arranged irregularly around the stroma. Conidiophores and monospores were hyaline, the latter slightly curved, 3.7–6.6×1.1–1.9 µm (n=20). Genomic DNA was extracted from the representative isolate ALE04. The internal transcribed spacer (ITS) region of rDNA, transcription elongation factor (*tef-1α*) and β-tubulin (*tub2*) gene portions were sequenced using ITS1/ITS4, EF1-728F/EF1-986R and Bt2a/Bt2b primers, respectively (Zhang et al. 2014). The obtained sequences were deposited in GenBank (accession numbers OK275544, OK382944 and OK382949 for ITS, *tef-1α* and

tub2, respectively). Phylogenetic analysis of the combined ITS, *tef-1α* and *tub2* sequences of the ALE04 isolate and the reference strains of same and closely related species was done using the maximum likelihood method. Based on the phylogenetic analysis and morphological characterization, the isolate ALE04 was identified as *Cytospora chrysosperma* (Pers.) Fr.. Inoculation of 1-year-old twigs of staghorn sumac proved the pathogenicity of *C. chrysosperma* isolates. Pathogenicity tests were repeated five times. The typical canker symptoms appeared after 15 days, and the same fungus was re-isolated from all inoculated branches. No lesions developed on the control branches. Currently, the proven hosts of *C. chrysosperma* in China are *Castanea*, *Populus*, *Morus*, *Salix*, *Ulmus*, and *Juglans* genera (Fan et al. 2015). To our knowledge, this is the first report of pathogenic *C. chrysosperma* occurrence on *R. typhina* in China (Farr and Rossman 2021).

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Declarations

Conflict of interests There are no potential conflicts of interest, and this research is not involved with any Human Participant or Animal. All authors have approved the submission of this manuscript.

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