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Arabidopsis thalina a new model system to study *Cryptococcus gattii* environmental biology

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The encapsulated yeast, *Cryptococcus gattii* (Cg), is an emerging pathogen of immunocompetent and immunocompromised hosts. *Cryptococcus gattii* has diversified its tree hosts, geographical distribution, and amplified its pathogenic ability in comparison to its close relatives. In the USA, Cg was isolated from decayed hollows of many Pacific-Northwest trees. However, the precise mechanisms by which it colonizes these trees are currently unknown. The enzyme laccase has been implicated in the ability of fungi to colonize wood and to break down and utilize lignin by oxidation. Laccase initiates the synthesis of melanin, a virulence factor in fungal pathogenesis of animals and plants. We have cloned and disrupted laccase (LAC1) in Cg to evaluate its role in colonizing wood and plants. We are the first to explore *Arabidopsis thaliana*, a small flowering plant, as a model system to understand Cg biology. *Arabidopsis* is a well characterized model system in plant biology because it is cheap, easy to use, fully sequenced, and has well-established methods to evaluate fungal colonization and pathogenisis. *Arabidopsis* leaves and wood blocks were inoculated with Cg suspension and incubated at optimal temperature and humidity. Wood blocks were fixed, paraffin embedded, and sectioned for light microscopy analysis. Leaves were collected and processed for light and scanning electron microscopy (SEM) as well as CFU analysis. Results demonstrate Cg can colonize and survive on wood and live *Arabidopsis* leaves. SEM analysis suggests Cg may attach to leaf surface via pseudopodia-like structures and form biofilms.