Resource Summary Report

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Fluorescent in vitro model to assess adhesion and invasion of Bd in PAK

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Protocol Information

URL: https://dx.doi.org/10.17504/protocols.io.8ihhub6

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Summary: The largest current disease-induced loss of vertebrate biodiversity is due to chytridiomycosis and despite the increasing understanding of the pathogenesis, knowledge unravelling the early host-pathogen interactions remains limited. Batrachochytrium dendrobatidis (Bd)zoospores attach to and invade the amphibian epidermis, with subsequent invasive growth in the host skin. Availability of an in vitro assay would facilitate in depth study of this interaction while reducing the number of experimental animals needed. We describe a fluorescent cell-based in vitro infection model that reproduces host-Bd interactions. Using primary keratinocytes from Litoria caerulea and the epithelial cell line A6 from Xenopus laevis, we reproduced different stages of host cell infection and intracellular growth of Bd, resulting in host cell death, a key event in chytridiomycosis. The presented in vitro models may facilitate future mechanistic studies of host susceptibility and pathogen virulence.

Associated Publications: Verbrugghe E, Rooij PV, Favoreel H, Martel A, Pasmans F (2019) *In vitro* modeling of *Batrachochytrium dendrobatidis* infection of the amphibian skin. PLoS ONE 14(11): e0225224. doi: 10.1371/journal.pone.0225224

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