

# Phagocytosis and Killing of Human Pathogenic, *Penicillium marneffe* and Non-pathogenic, *Penicillium citrinum* by Mouse Macrophage J774.1 Cells

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## ABSTRACT

In this study, we examined in vitro phagocytosis and killing activity of mouse macrophage cells against conidia of pathogenic *Penicillium marneffe*, and compared this with non-pathogenic *Penicillium citrinum*. Phagocytosis and killing assays were determined using microscopy and viable colony plate counts. The results indicated a highly efficient phagocytosis effect of J774.1 cells against both species of *Penicillium*. There was no difference between the percentages of cells phagocytosed in both species. The phagocytic indices of *P. marneffe* at 60, 120, and 240 minutes of infection were significantly higher than those of *P. citrinum*. However, in the early stages of phagocytosis, the percentage killing of *P. marneffe* was significantly lower than that observed in *P. citrinum*. Conidia of *P. marneffe* were more susceptible to being phagocytosed but also more resistant to killing by macrophages than those of non-pathogenic *Penicillium*. The mechanism of intracellular survival or resistance to killing by macrophages needs further investigation. (*J Infect Dis Antimicrob Agents* 2008;25:81-9.)

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Received for publication: February 14, 2008.

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**Keyword:** *Penicillium marneffe*, *Penicillium citrinum*, phagocytosis, killing, J774.1