



## Siderophore Production by Pathogenic Mucorales and Uptake of Deferoxamine B

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### Résumé en anglais

Clinical reports have established that mucormycosis, mainly caused by *Rhizopus* spp., frequently occurs in patients treated with deferoxamine B (DFO, Desferal®) which is misappropriated by these fungi. Siderophore production by twenty mucoralean isolates was therefore investigated using a commercial iron-depleted culture medium. Siderophore production was detected for most of the isolates. Our experiments confirmed that deferoxamine B (iron chelate of DFO) promoted in vitro growth of *Rhizopus arrhizus*. Electrophoretic analysis of somatic extracts revealed iron-regulated proteins of 60 and 32 kDa which were lacking in iron-depleted culture conditions. Using a fluorescent derivative of deferoxamine B, we showed by fluorescence microscopy the entry of the siderophore within the fungal cells, thus suggesting a shuttle mechanism encompassing the uptake of the entire siderophore-ion complex into the cell. This useful tool renders possible a better understanding of iron metabolism in *Mucorales* which could lead to the development of new diagnostic method or new antifungal therapy using siderophores as imaging contrast agents or active drug vectors.

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### Liens

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