

Technology Offer

Reference Number
TO 02-00075

Novel non-toxic antifungal agents

The Challenge

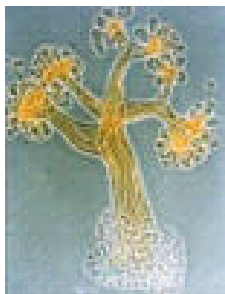
Systemic fungal infection is considered to be an important cause of morbidity and mortality in immunosuppressed patients. As the number of these individuals increases, so do the incidence and types of fungal infections noted in these patients. Although candidiasis remains the most common fungal infection in immunosuppressed patients, aspergillosis, zygomycosis, and other invasive filamentous fungal infections also pose a major problem. Endemic mycoses, constitute a risk for other groups of patients.

Over the past decades, amphotericin B has been the mainstay of antifungal therapy for severe systemic mycotic infections. Despite its proven efficacy, use of amphotericin B is limited by potentially severe adverse reactions, especially nephrotoxicity and infusion-related events. Therefore azoles, primarily fluconazole and itraconazole, have become attractive, less toxic alternatives to amphotericin B. However, there are problems, namely, their relatively poor efficacy against invasive infections and emerging clinical and microbiologic resistance to azoles.

Today amphotericin B still is the only antifungal agent for which significant effect on mortality in severe systemic fungal infections.

The Technology

The invention relates to a novel group of polyketide derived compounds synthesized by a group of myxobacteria. The genecluster required for synthesizing these compounds was isolated.



Myxobacterium, species *Melittangium*
Source: GBF, Braunschweig

Therefore it is possible to synthesize the antifungal agents in recombinant bacteria resulting in higher yields and the possibility to produce modified, even more effective substances.

Preclinical trials in mice already provided promising results.

Commercial Opportunity

These novel non toxic antifungal agents offer a breakthrough in treatment of systemic fungal infections. In contrast to the products currently on the market the new agents combine the benefits of amphotericin B and azoles without having the weaknesses of either substance.

Advantages are:

- broad spectrum fungicide
- no severe side effects
- effective against resistant strains
- presumably low dosage needed

Patent situation

A German patent application is currently pending. A PCT application has been filed.

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