

# CASE WESTERN RESERVE Efficacy of Ibrexafungerp (IBX, formerly SCY-078) in the Treatment of Candida auris Cutaneous Infection in a Guinea Pig Model



AAR-632

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### BACKGROUND

Candida auris, an emerging multi-drug resistant species recently reported worldwide as a cause of invasive infections and its persistence on the skin of patients may be associated with its transmission contributing to outbreaks in health care facilities. Ibrexafungerp (formerly SCY-078), a novel orally bioavailable glucan synthase inhibitor with demonstrated in vitro activity against C. auris, was evaluated for efficacy in an experimental in vivo cutaneous model

#### METHODS

 Guinea pigs (n=5 per group) were randomized into 5 treatment groups: 10, 20, and 30 mg/kg of Ibrexafungerp twice daily (BID) by gavage, micafungin 5 mg/kg once daily IP, and vehicle control. Animals received a single dose of prednisolone 30 mg/kg, subcutaneously, one day prior and again at three days post infection. A 100 µl cell suspension containing 10<sup>8</sup> blastospores of *C. auris* was applied to an abraded area on the back of animals. At Day 7, tissue biopsies were examined histologically, and tissue fungal burden was analyzed by colony counts from skin samples. PK bioanalysis of Ibrexafungerp plasma concentrations was conducted following the final dose (Day 7).

## RESULTS

Tissue fungal burdens were lower than vehicle controls in all treatment groups, with a significant reduction in tissue fungal burden in the 10 mg/kg Ibrexafungerp dosing group. Histological examination showed that no fungal elements were observed in the biopsy samples treated with Ibrexafungerp or micafungin, as opposed to the untreated control group (arrow). There were no significant differences in the clinical scores (crusting, inflammation) among the treatment groups. Animals dosed with 10, 20 or 30 mg/kg BID of IBX had exposures

(AUC  $_{0-24}$ ) of 2.8, 5.6, and 15 ug\*hr/ml.

SCY-078 20 mg/kg
Micofungin 5 malks
Micafungin 5 mg/kg

Figure 1. PAS stain of infected skin

Treatment Group	Average Log CFU ± SD	
Untreated	4.1 ± 0.3	
SCY-078 10 mg/kg, twice a day	2.8 ± 0.7*	SCY
SCY-078 20 mg/kg, twice a day	3.7 ± 0.4	SCY
SCY-078 30 mg/kg, twice a day	$3.6 \pm 0.3$	SCY
Micafungin 5 mg/kg, once a day	3.6 ± 1.2	Mica

Table 1. Average fun	ıgal tissue bı	urden of skin
* <i>P</i> -value of 0.039		

Treatment Group	Average Log CFI ± SD
Untreated	2.2 ± 0.2
SCY-078 10 mg/kg, twice a day	1.7 ± 0.4
SCY-078 20 mg/kg, twice a day	1.8 ± 0.4
SCY-078 30 mg/kg, twice a day	2.1 ± 0.4
Micafungin 5 mg/kg, once a day	2.1 ± 0.3

Table 2. Average clinical score of skin

#### CONCLUSIONS

The results from this experimental model show that IBX dosed orally distributed to the skin, and that treatment with IBX reduced the fungal burden in skin infected with *C. auris*, when compared to the untreated control, thus suggesting efficacy in the treatment of cutaneous infections and potential role in C.auris skin decolonization.

