PP2.091

SCY-078: A first-in-class, orally-bioavailable, glucan synthase inhibitor has broad spectrum activity against *Candida*, *Aspergillus* and *Pneumocystis* spp.

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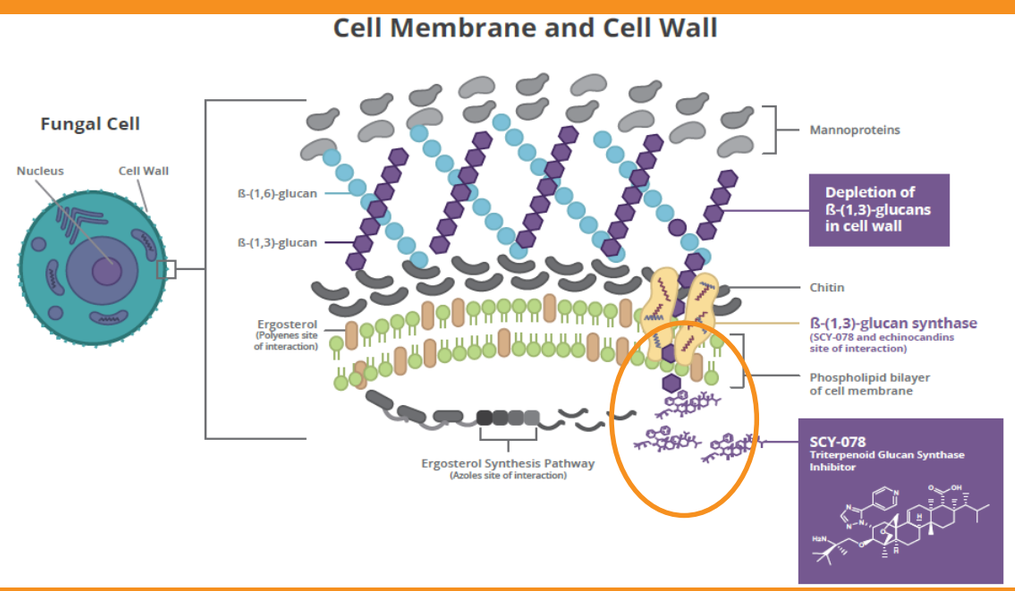
BACKGROUND

SCY-078 is a first-in-class oral and intravenous (IV) triterpenoid glucan synthase inhibitor with differentiated bindings from the echinocandins and broad activity against *Candida*, *Aspergillus* and *Pneumocystis* spp., currently in clinical development for the treatment of various fungal infections. *In vitro* studies show that SCY-078 has potent, cidal activity against wild-type and drug-resistant *Candida* strains, including the emerging pathogen multidrug-resistant *C. auris.* Activity *in vivo* has been shown in animal models of infection with *Candida*, *Aspergillus* and *Pneumocystis* spp. The pre-clinical profile of SCY-078 supports continued development of SCY-078 as a next generation antifungal agent.



METHODS

The *in vitro* activity of SCY-078 has been evaluated against ≈1500 wild-type (WT) and drug-resistant *Candida* spp. isolates and ≈500 WT and azole-resistant *Aspergillus* spp. across eight independent laboratories. The *in vivo* activity of SCY-078 has been evaluated across seven independent laboratories in murine models of invasive candidiasis, invasive aspergillosis and pneumocystis pneumonia. SCY-078 was also evaluated in a rabbit model of pulmonary aspergillosis, given alone and in combination with isavuconazole. The determination of efficacy across these studies was based on survival, kidney and/or lung fungal burden, serum galactomannan index (GMI) and/or nuclei and asci counts, as appropriate for each model. Plasma exposure was assessed across the dose ranges of each study in order to guide exposures in clinical studies.

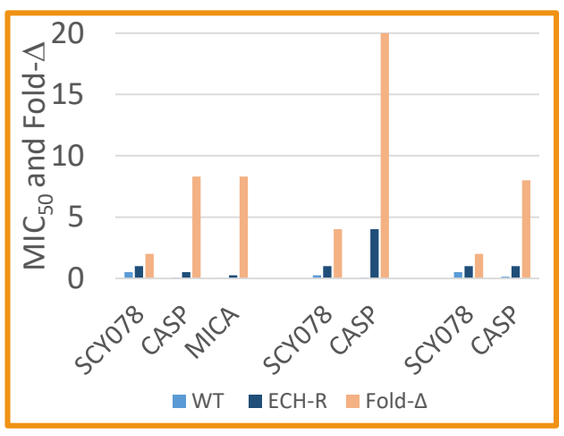
RESULTS

SCY-078 *In Vitro* Activity Against *Candida* and *Aspergillus* spp[a]

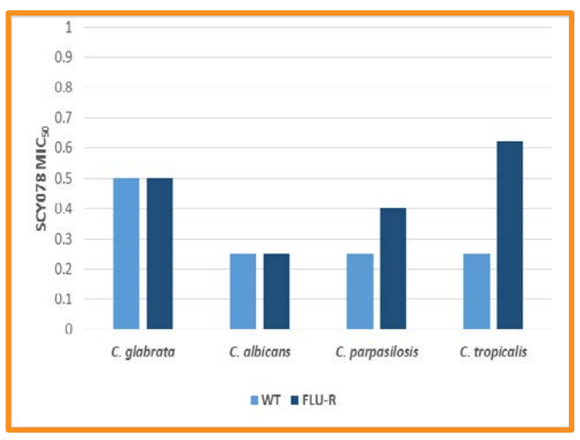
Candida Species	N	*MIC_{90}	*Aspergillus* Species	N	*MEC_{90}
C. glabrata	343	0.25 - 4	*A. fumigatus*	175	0.008 – 0.25
C. albicans	258	0.06 – 0.25	*A. flavus*	102	<0.06 - 4
C. tropicalis	186	0.25 - 1	*A. niger*	56	0.009 – 0.06
C. parapsilosis	181	0.25 - 1	*A. terreus*	99	0.125
C. krusei	130	0.5 - 2	*Azole-R*	18	0.03 – 0.5
C. auris	116	1			

*Represents the range of MIC_{90}/MEC_{90} values obtained across 7 independent laboratories

SCY-078 Demonstrated Superior Activity vs ECHs Against Isolates with *fks* Mutations[b]



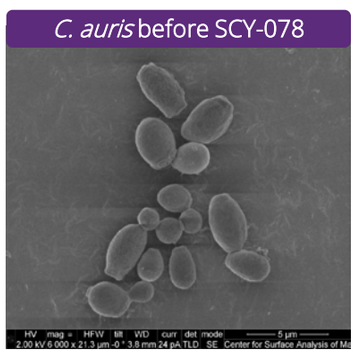
SCY-078 Demonstrated Potent Activity Against FLU-resistant *Candida* spp.[c]

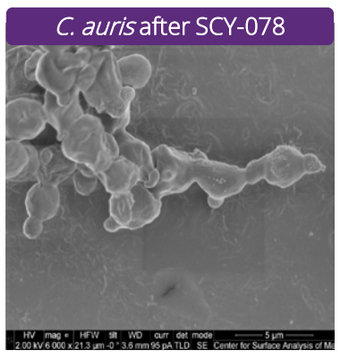


SCY-078 activity against a panel of *C. auris* isolates with elevated ECH MICs[e]

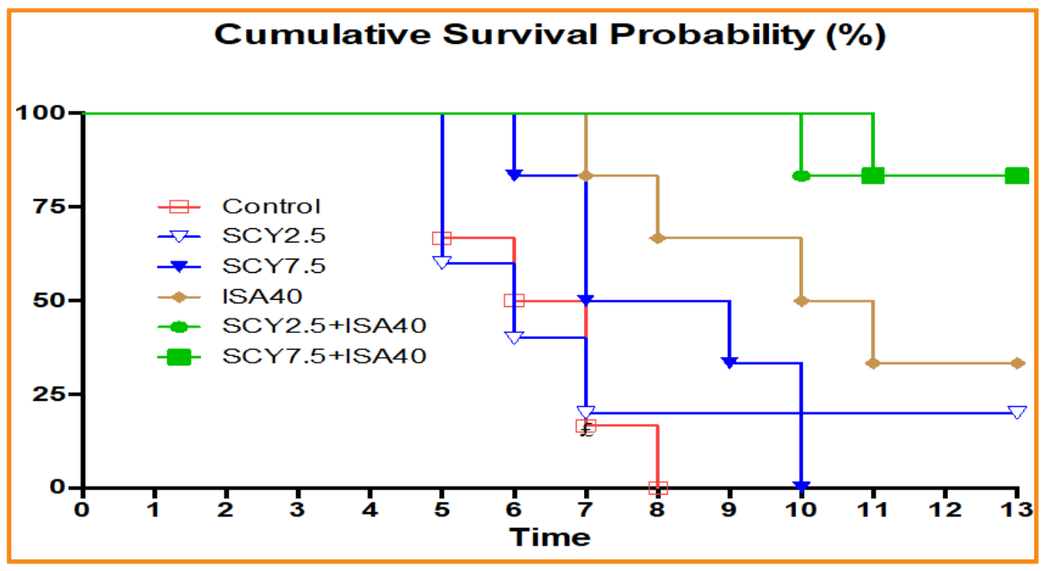
	Minimum Inhibitory Concentration (µg/ml)			
C. auris Isolate	Anidulafungin	Caspofungin	Micafungin	SCY-078
1	8	1	4	1
2	16	1	4	1
3	1	16	1	1
4	2	16	2	1
5	4	.5	.5	0.5
6	>16	>16	>8	0.5
7	4	>16	1	1

Scanning Electron Micrographs Showing Cidal Activity of SCY-078[f]

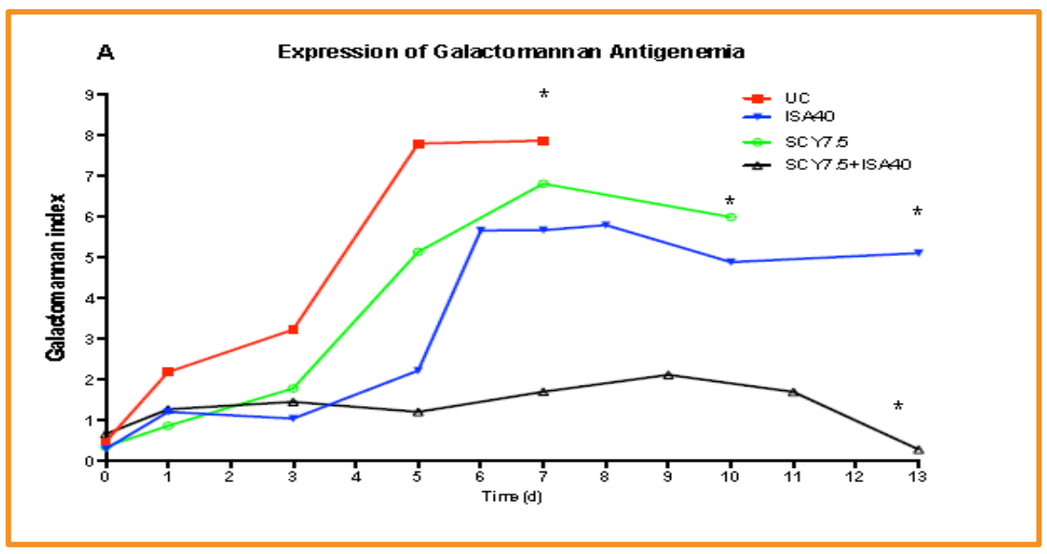




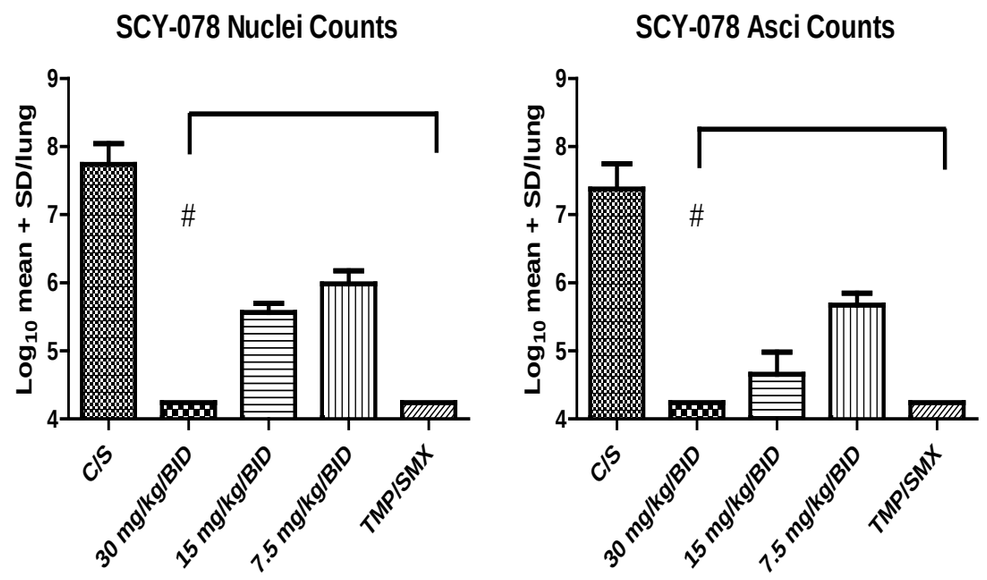
SCY-078 Activity in a Rabbit Model of Pulmonary Aspergillosis[d]



Lower GMI in rabbits treated with combination regimen of SCY7.5+ISA40 in comparison to that of single therapy of SCY7.5, ISA40, and untreated controls[d]



SCY-078 Activity in a Murine Model of Pneumocystis[g]



CONCLUSION

SCY-078's broad spectrum activity, high potency and flexibility for IV and PO dosing support its continued development as a new antifungal agent.

[a]Data on file
[b]Borroto-Esoda et al. 2016, 13th ASM conference on Candidiasis; poster #45
[c]Borroto-Esoda et al. 2016, 13th ASM conference on Candidiasis; poster #44
[d]Walsh et al. 8th Advances Against Aspergillosis 2018
[e]Berkow et al. AAC July, 2017
[f]Hager et al. 2018 ASM Microbe; poster #497
[g]Ashbaugh et al. 2018, 28th ECCMID; poster #969

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