ABSTRACT

CD101 is a novel echinocandin that has demonstrated robust antifungal activity in vitro and in vivo. The objective of this study was to determine the antifungal activity of a single SC dose of CD101 in mouse models of candidiasis and aspergillosis.

INTRODUCTION

Fungal infection poses a significant public health burden with high morbidity and mortality. Immunocompromised patients continue to be at risk for opportunistic infections caused by fungal pathogens, such as Candida spp. and Aspergillus spp. CD101 is a novel echinocandin that has demonstrated robust antifungal activity in vitro and in vivo. The objective of this study was to determine the antifungal activity of a single SC dose of CD101 in mouse models of candidiasis and aspergillosis.

RESULTS (cont’d)

In neutrophilic mouse aspergillosis (same strain/inoculum), all animals given 10 mg/kg survived regardless of prophylactic treatment day. The 2 mg/kg group showed increased survival when prophylaxis was given closer to challenge.

REFERENCES


ACKNOWLEDGMENTS

The authors would like to acknowledge the contributions from the respective inves team at TransPharm and Eurico Panthias, Taipei, Taiwan.

DISCUSSION / CONCLUSION

CD101, a novel echinocandin, was found to be protective against fungal infection in mice when administered as a single SC dose of 10 mg/kg (roughly 200 mg/kg human IV dose) at 1 to 2 days prior to fungal challenge. Additionally, results of the study with the non-neutrophilic model on normal BALB/c mice suggested that two smaller doses (3 mg/kg given within the same 5 days prior to fungal challenge on day 5 and 3) may offer the same protection as a longer single dose (10 mg/kg on day 0). As has been shown in caspofungin and micafungin in similar studies, tissue residence time likely plays an important role in CD101 prophylactic efficacy. Tissue residence time for CD101 has been noted to be especially long lasting in the peritoneal cavity using MALDI imaging mass spectrometry.

The results suggest that CD101 may be a potential new agent for intermittent outpatient echinocandin treatment and prophylaxis of Aspergillosis and Candida.

MOUSE PHARMACOKINETICS

The PK profile of CD191 in mice (Day 4) following a 10 mg/kg IV dose is shown in Figure 4A. The AUC (0-8 h) was significantly greater following a single SC dose of CD191 than following a single SC dose of caspofungin.

In neutrophilic mouse aspergillosis (same strain/inoculum), all animals given 10 mg/kg survived regardless of prophylactic treatment day. Similar to neutrophilic echinocandin model, the 2 mg/kg group showed increased survival when prophylaxis was given closer to challenge.

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