**Introduction**

Candida species are the most common cause of fungal infections ranging from superficial infections to invasive diseases. In particular, *Candida* affects high-risk patients who are either immunocompromised or critically ill.

LTX-109 is a novel antimicrobial agent initially being developed as a topical agent for impetigo, nasal decolonisation and biofilm infections. The drug is a mimic of a membrane-active host defence peptide having a membrane-lyzing mode of action causing rapid membrane disruption. LTX-109 shows a broad efficacy against a range of pathogens including Gram+ and Gram- bacteria, yeasts and fungi.

The compound is equally effective against antibiotic-resistant species such as methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococci* (VRE) and multi-resistant *Pseudomonas* isolates. LTX-109 shows a low propensity for resistance development and no in vitro cross-resistance with other classes of antibiotics.

**Objective**

There is a medical need for new and fast-acting antifungals to treat various fungal diseases. The present study demonstrates the potential fungicidal effect of LTX-109 by using minimal fungicidal concentration (MFC) and time-kill kinetics experiments.

**Methods**

MFCs for LTX-109 were determined in broth (MOPS-buffered RPMI 1640 without sodium bicarbonate but containing phenol red and glutamine) according to CLSI criteria with a doubling dilution concentration range (0.25 – 256 mg/L) for 15 different fungal strains and species and compared to that of amphotericin B (0.015 – 16 mg/L).

*Candida parapsilosis* (ATCC 22019) was included as an extra control reference strain for amphotericin B.

Time-kill experiments were performed in RPMI 1640 broth on three test Candida species, *C. albicans*, *C. glabrata* and *C. lusitaniae*, at four concentrations (1, 2, 4 and 8xMIC). Viable counts (Log10 percentage survival) were determined between 0 and 24h after inoculation.

**Results**

- **LTX-109 is as fungicidal as amphotericin B**
  - LTX-109 at 8xMIC (shown in figs.) was as fungicidal as amphotericin B, demonstrating a 3-log reduction within 4 hours in time-kill kinetics experiments.

Candida *lusitaniae*:
- LTX-109 and amphotericin B were non-fungicidal at 1 and 2xMIC, but fungicidal at 4 and 8xMIC with LTX-109 being slightly more active

Candida *glabrata*:
- LTX-109 was fungicidal at 2xMIC and above. Both compounds were more rapidly fungicidal against *C. glabrata* than to *C. lusitaniae*

Candida *albicans*:
- LTX-109 and amphotericin B were fungicidal at 1 and 2xMIC, but fungicidal at 4 and 8xMIC with LTX-109 being slightly more active

**Conclusions**

- LTX-109 is a fungicidal antimicrobial drug
- LTX-109 is as fungicidal as amphotericin B in time-kill experiments
- These data suggest a potential application for LTX-109 in treatment of fungal infections
- Further studies to document the antifungal efficacy in humans are envisaged