TCS/23/02 - Novel therapeutics for the treatment of Candida infections

Invasive fungal infections, such as those caused by the fungi Candida, are an increasing global public health concern. Those with underlying health problems or a weakened immune system are most at risk. This underrecognized global health threat is compounded by the rapid emergence of antifungal resistance. Despite this, only four classes of antifungal medicines are used in clinical practice, with few others under development. In recognition of this global crisis, the World Health Organisation recently released their fungal priority pathogen list, which included several Candida pathogens.

We have discovered a new class of anti-infective agents, S-MGBs, that are resilient to resistance. Significantly, we have previously worked with a Scottish SME, MGB Biopharma, to progress a compound to the successful completion of a Phase IIa clinical trial for treatment of infections caused by the bacterium, C. diff. – this demonstrates our ability to translate basic science into clinical impact. Herein, we will use robust preliminary data confirming the antifungal effects of S-MGBs, to develop novel pre-clinical candidates for the treatment of Candida infections, specifically those causing invasive candidiasis. The project will design, synthesise and evaluate novel compounds, with optimised structures that increase their potency towards key pathogens. These compounds will then be rapidly triaged through a typical drug development cascade of evaluations to identify a compound to enter pre-clinical development.