'PepBiotics', novel antimicrobial peptides to fight fungal infections caused by *Aspergillus fumigatus* and *Malassezia spp*

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AMPs are important effector molecules of the innate immune system of vertebrates and invertebrates with a broad spectrum activity against viruses, bacteria and fungi. Here we investigated whether new cathelicidin-inspired AMPs (termed '**PepBiotics**', patent pending) can be used to fight two clinically relevant fungal species.

Aspergillus fumigatus can cause life-threatening invasive infections in immunocompromised patients and allergic bronchopulmonary aspergillosis in cystic fibrosis or asthmatic patients.

Malassezia yeasts have been associated with superficial skin infections like pityriasis versicolor and seborrheic dermatitis. These yeasts lack the cytosolic fatty acid synthase and require lipids in their growth medium.

AMPs: The 'PepBiotics' CR172 and CR184 were compared to the cathelicidin CATH-2 (chicken) and LL-37 (human).

Metabolic assay (*Aspergillus fumigatus*)

Conidia were incubated in minimal medium in absence or presence of AMPs and conversion of resazurin was followed.

Live-dead assay: counting CFU/mL (*Malassezia furfur*)

Yeast cells are incubated in minimal medium (with lipids) with or without PepBiotics and survival was determined in time by determining the CFU by plating.

'PepBiotics' inhibit metabolic activity of *A. fumigatus*

A. fumigatus mutants lacking surface components did not show increased sensitivity for the tested peptides.

Azole-resistant clinical *A. fumigatus* isolate is sensitive for 'PepBiotics'

'PepBiotics' are fungicidal for *Malassezia furfur*

CFU/mL

CR-184 (< 1.25 μM) within 24 h