

P006 Host Defence Peptides in Human Oral Epithelial Cell proliferation
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There has been renewed interest in the role of host defence peptides (HDPs) as potential therapeutic agents for the treatment of malignant disease but consensus on their role in tumour cell biology is lacking. The aim of this study was to determine the effect of human beta defensins (HBDs) and cathelicidin LL-37 on proliferation of malignant and non-malignant human oral epithelial cell lines.

Malignant (H357) and non-malignant (DOK) cells were cultured in serum free and 10% serum conditions, with 0 to 100 µg/ml LL-37, HBD2 or HBD3 for 24h. Proliferation was assessed by measuring mitochondrial dehydrogenase activity.

HBD effects on proliferation were greatest in serum-free medium and always increased over 24h. HBD3 inhibited cell proliferation rapidly and at concentrations ≥ 25 µg/ml against DOK and > 50 µg/ml against H357. LL-37 > 50 µg/ml inhibited proliferation of H357 cells, but not DOK. HBD2 did not affect proliferation of either cell line.

Therefore, human HDPs differed in their effects upon proliferation of human oral epithelial cell lines. While HBD3 was rapidly toxic, HBD2 was not and LL-37 anti-proliferative activity was selective for the malignant cell line. These HDPs appear to have different roles in tumour cell biology and LL-37 and HBD2 may have potential for development as therapeutic agents.