P021 Kinetics, polarisation, chemotactic and immunomodulatory impact of intestinal epithelial cell derived human β-defensin 2

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β-defensins fulfill a dual role in mucosal immunity. First, in providing broad-spectrum antimicrobial host defence against opportunistic pathogens and second as chemokines that recruit discrete effector cell populations to sites of inflammation and/or infection. To determine the interplay between these two host defence roles, we have studied the kinetics and polarisation of intestinal hBD2 protein secretion using cell line models of intestinal inflammation. For the first time, we demonstrate that in an intact barrier, hBD2 is only secreted apically in response to agonist and bacterial pathogen challenge. Basal secretion is only observed with the onset of barrier breakdown. We also demonstrate that even in the presence of constant agonist challenge, hBD2 secretion occurs in a rapid pulse that soon wanes. Therefore the chemotactic and immunomodulatory effects of hBD2 become relevant in the inflammatory response to mucosal pathogen challenge at a later stage than antimicrobial activity.