



Supplemental Fig S2. Vitamin D induction of antimicrobial peptides (AMPs). A scheme showing pathways leading to vitamin D induced AMP transcription and expression. Proinflammatory ligands engage Toll-like receptor (TLR) 2. TLR signaling activates the NF- κ B module resulting in the expression of CYP27B1 (1 α hydroxylase), an enzyme that converts calcifediol (vitamin D) to calcitriol (1,25(OH) $_2$ D $_3$). This enzymatic process is thought to occur locally in response to infection [67]. Calcitriol combines with the vitamin D receptor (VDR) and vitamin D response element (VDRE). The promoter region of *CAMP* gene contains VDRE binding motifs that result in *CAMP* transcription and LL-37 expression [13]. Secondary to this pathway is *DEFB4B* transcription and HBD2 expression resulting from the TLR2-activated NF- κ B module. The promoter region of the *DEFB4B* gene contains several NF- κ B binding motifs that likely leads to *DEFB4B* transcription and HBD2 expression [13]. Pathway connections leading vitamin D induction of AMP transcription and LL-37 and HBD2 expression were based off of studies by a) White, 2022 [67], b) Campbell et al. 2012 [13], c) Edfeldt et al. 2010 [113], d) Liu et al. 2006 [112], e) Wang et al. 2004 [65], and f) Misawa et al. 2009 [60].

