

Figure S1: Experimental set-up. Preterm and near-term piglets were delivered by caesarean section at 90% gestation (n=34, 2 litters) and 96% gestation (n=18, 1 litter) respectively. Piglets from each litter were stratified according to birthweight into 2 groups of enteral diets, 1) MP-WPC and 2) EH-WPC. In addition to the enteral nutrition, all piglets received parenteral nutrition support from day 1 to day 5. For passive immunization, piglets received three doses of maternal serum (iv). On day 5 the piglets were euthanized, followed by macroscopic evaluation of gastroenterocolitis and collection of intestinal tissues.

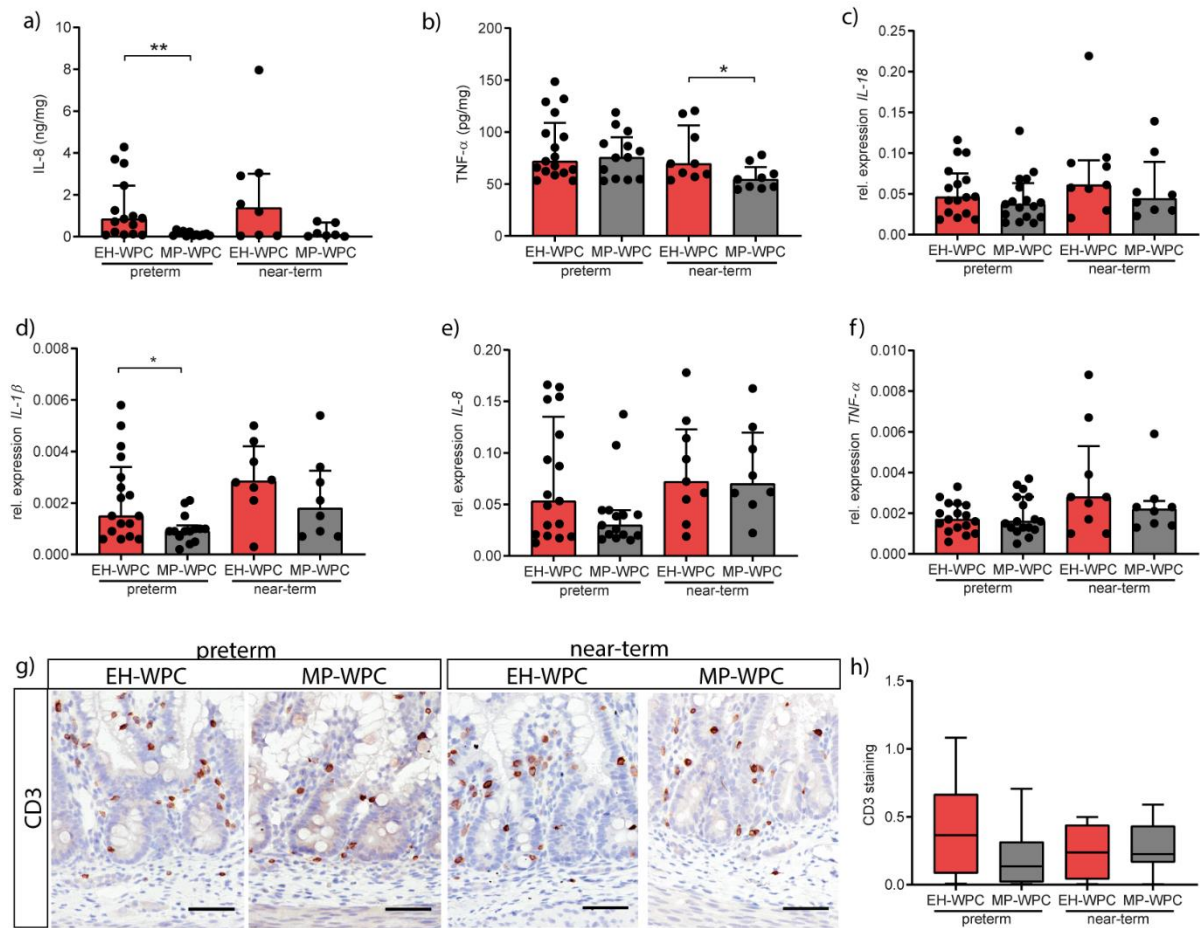


Figure S2: Distal small intestine and colonic inflammation. Cytokine levels of (a) IL-8 and (b) TNF- α in colon tissue homogenates as determined by ELISA, and relative expression levels of (c) IL-18 in colon tissue as determined by RT-qPCR. Relative expression levels of pro-inflammatory cytokines (d) IL-1 β , (e) IL-8 and (f) TNF- α in the distal small intestine as determined by RT-qPCR. (g) T cells were detected in distal small intestinal tissue by immunohistochemistry staining for CD3, and (h) staining intensity in the crypt region was quantified by ImageJ analysis. Values are median \pm IQR, * $p \leq 0.05$ ** $p \leq 0.01$. Scalebar equals 50 μ m.

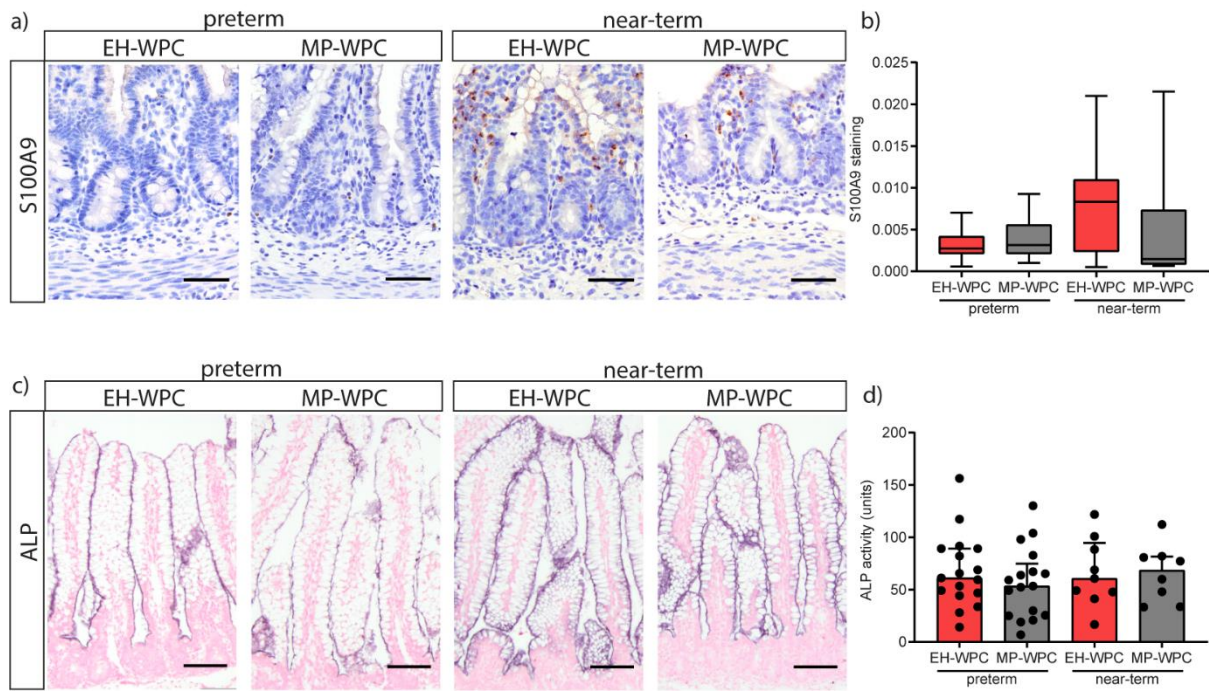


Figure S3: Innate defense in the immature distal small intestine. (a) detection of S100A9 by immunohistochemistry in distal small intestinal tissue, with (b) relative staining intensity determined by ImageJ analysis. iALP brush border activity was determined with (c) NBT/BCIP conversion on distal small intestinal tissue slides and (d) pNPP conversion ($\mu\text{g pNPP} \cdot \text{mg protein} \cdot \text{min}^{-1}$) in distal small intestinal tissue homogenates. Values are median \pm IQR. Scalebar equals 50 μm for (a) and 100 μm for (c).

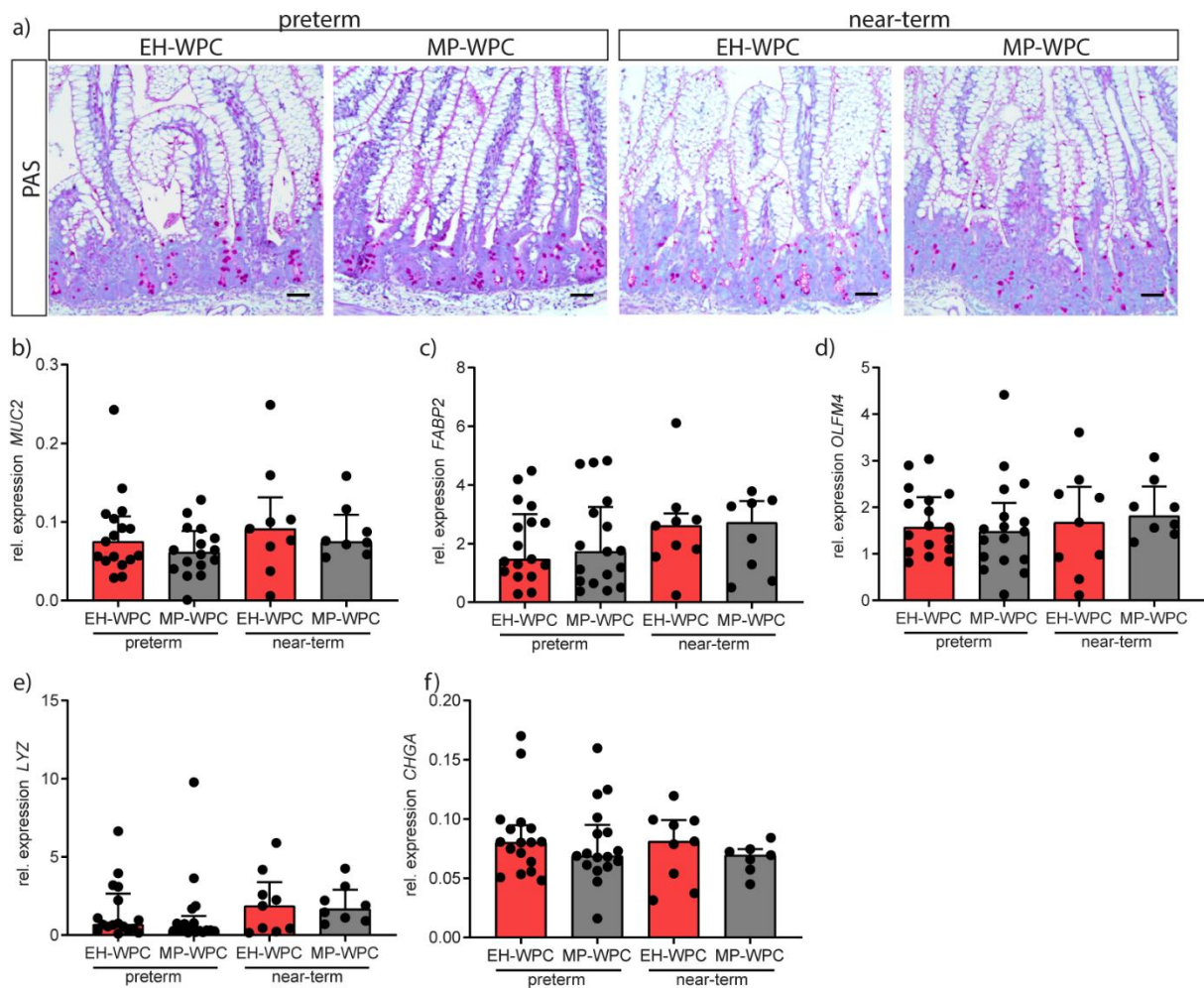


Figure S4: Epithelial cell types in the immature small intestine. (a) detection of mucin-containing cells in distal small intestinal tissue by PAS staining, with relative expression levels of (b) *MUC2* in distal small intestine, as determined by RT-qPCR. Relative expression levels of enterocyte marker (c) *FABP2*, stem cell marker (d) *OLFM4*, paneth cell marker (e) *LYZ* and enteroendocrine cell marker (f) *CHGA* in the distal small intestine as determined by RT-qPCR. Values are median \pm IQR, scalebar equals 50 μm .