

STRONG CHILDREN'S RESEARCH CENTER

Summer 2016 Research School

Name: Joana Coelho

School: University of Rochester

Mentor: Kirsi Jarvinen-Seppo, MD, PhD, Antti Seppo, PhD

ABS8c3SRACT 14D4()Tj EMC 4Tw 17 TJ 0 o16.94Ttd

yielded an up-regulation of IL -8, as previously shown.⁴ LPS treatments were not as strongly conclusive, but there was evidence to suggest a downregulation of NF- κ B by both apical and basolateral stimulation. Based on these results, apical stimulation with flagellin was used as the positive control to assert the functionality of the Caco-2 Cell model.

Data collected suggests a notable effect by breast milk on the Caco-2 cell monolayer. Both apical and basolateral stimulation by breast milk was found to up-regulate the expression level of IL-8. Stimulation from either chamber by breast milk yielded conflicting results for the expression levels of NF κ B. As well, IL-1B was shown to be upregulated by apical stimulation and down-regulated by basolateral stimulation. As a next step, this system will be used to assess epithelial cell RNA by RNAseq to give a complete understanding of the potential changes that occur in the expression levels of immunomodulatory factors. This could potentially give new insights to the effects of breast milk on the developing infant gut microbiome and immune system.

Citations:

- 1.