

Microbial imbalance



Reduced intraluminal levels of butyrate

Decreased luminal IgA and defensin concentrations

Genetically predisposed defective macrophage phagocytosis



Down-regulation of epithelial tight junction protein expression



Increased epithelial permeability



Increased bacterial translocation



Ineffective bacterial clearance



Excessive TLR stimulation



Pro-inflammatory cytokines and activation of innate and T-cell mediated immune responses