

TABLE 1. Immunomodulating components of BM against NEC.

Component	Role in NEC protection	Reference
Lactoferrin	a. acts against Gram-bacteria in the stomach b. synergistically with lysozyme kills Gram- bacteria in the stomach c. binds to the TLR4 and CD14 receptors blocking the adherence of bacteria to the intestinal epithelium d. promotes the apoptosis of infected intestinal epithelial cells e. stimulates the growth of commensal bacteria f. reduces the production of inflammatory cytokine IL-1 β , TNF*- α , IL-6, IL-8	32-34
Lysozyme	a. synergistically with lactoferrin degrades the outer wall of pathogens bacteria protecting the intestine b. protects the intestinal epithelial. From NEC	35-36
Oligosaccharides	a. inhibit pathogens from adhering with epithelial cells of intestine b. preserve the growth of lactobacilli and bifidobacterial c. reduce the incidence of NEC	37-41
Cytokines <i>TNF-α, IL-6, IL-6, IL-12, IL-2, INF-γ, TGF-β, IL-7, IL-10, IL-18, G-CSF</i>	a. contribution in the pathogenesis of NEC b. anti-inflammatory properties (IL-10)	42-46
L-glutamine	a. stimulates intestinal cell proliferation and small bowel growth b. antioxidant, anti-apoptosis and anti-inflammation activities which are involved in the pathogenesis of NEC	47-50
Secretory IgA	a. entraps microbes in the mucus of intestine b. downregulates pro-inflammatory bacterial antigens on commensal bacteria	51-52
Lipids and fatty acids - Saturated and monounsaturated fatty acids - Long-chain Polyunsaturated fatty acids (LCPUFA)	a. promotes intestinal barrier b. regulate the intestinal inflammation	53-54
Growth factors <i>EGF, HB-EGF, IGF1/IGF2, VEGF, EPO, G-CSF</i>	a. maintain intestinal homeostasis b. protect intestinal barrier	55-57

TLR4: toll like receptor 4, CD14: cluster of differentiation 14, TNF: tumor necrosis factor, INF- γ : interferon gamma, TGF- β : tumor growth factor beta, G-CSF:granulocyte colony stimulator factor, EGF: epidermal growth factor, HB: heparin binding, IGF: insulin like growth factor, VEGF: vascular endothelial growth factor, EPO: erythropoietin