

Supplementary Table 3. Systemic Inflammation Models

Reference		Shen et al., 2022	Wen et al., 2022	Han et al., 2021	Thim-Uam et al., 2022	Ma et al., 2022	Zhang et al., 2021	Wang et al., 2023	Fu et al., 2024	Li et al., 2022	Hu et al., 2023
Animal Model		Infection Models						Cancer Models			Brain Trauma Model
Intervention		a	b	c	d	e	f	g	h	i	j
		STZ (Streptocotozin) + <i>Klebsiella pneumoniae</i> inoculation (periodontitis bacteria)	<i>Pseudomonas aeruginosa</i> injection of the lung	LPS injection	Splenectomy + LPS Injection	Splenic nerve denervation (SND) + LPS injection	Sleep deprived (SD) + LPS injection	Transplantation of cancer cells (sarcoma / liver cancer)	CT26 xenograft tumor injection	LLC (cancer) + cyclophosphamide injection	Traumatic brain injury
Gut Metrics	Dysbiosis	No	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
	Structure Alteration ^{1,2}			Macroscopic and Microscopic structural damage	Increased Gut Permeability						Microscopic structural damage
	Immune Alteration ^{5,6,7,8,9}	Decreased innate pro-inflammatory response; Increased adaptive regulatory immune response		Increased innate pro-inflammatory and anti-inflammatory response							
	Immunoglobulin expression ¹⁰										
	SCFAs ¹¹					Decreased			Decreased		
Spleen Metrics	Structure Alteration ^{3,4}		Disrupted splenic cellular organization			Splenomegaly; Disrupted splenic cellular organization	Splenomegaly	Splenic atrophy		Splenic atrophy; Disrupted splenic cellular organization	
	Immune Alteration ^{5,6,7,8,9}	Increased innate pro-inflammatory response; Increased regulatory immune response	Increased innate and adaptive pro-inflammatory response; Decreased regulatory immune response	Increased innate and adaptive pro-inflammatory response; Decreased innate anti-inflammatory response; Decreased regulatory immune response	Decreased innate and adaptive pro-inflammatory response; Increased innate anti-inflammatory response	Increased innate pro-inflammatory response	Increased innate pro-inflammatory response; Decreased innate anti-inflammatory response		Increased innate pro-inflammatory response; Increased innate anti-inflammatory response; Decreased adaptive pro-inflammatory response; Increased regulatory immune response	Increased innate pro-inflammatory response; Decreased adaptive pro-inflammatory response	Decreased regulatory immune response
	Immunoglobulin expression ¹⁰								Increased	Decreased	
	Oxidative stress ¹²							Increased			

¹ Gut Macroscopic Measurement Alteration (Length, Weight) and Fecal Mass Alteration

² Gut Microscopic Structure Damage: Distrupted villi, Destroyed Mucosal Barrier, Depletion of Goblet cells, Infiltration of Inflammatory cells

³ Spleen Macroscopic Measurement Alteration: Spleen weight, Spleen index (Spleen Weight / Body Weight)

⁴ Spleen Microscopic Measurement: diffuse white pulp, smaller follicles, diffuse white-red pulp border, infiltration of inflammatory cells, vascularization

⁵ Innate Immunity Pro-Inflammatory Cells or Cytokines Expression (Macrophage, Neutrophils, NK Cells, IFN-γ, TNF-α, IL-6)

⁶ Innate Immunity Anti-Inflammatory Immune cells or Cytokine Expression (IL-10)

⁷ Adaptive Immunity Pro-Inflammatory Immune cells (CD3 T Lymphocyte, CD4 T Lymphocyte, CD8 T Lymphocyte; Th1 T Lymphocyte, Th2 T Lymphocyte; IgM B Lymphocyte)

⁸ Adaptive Immunity Anti-Inflammatory Immune cells or Cytokine Expression

⁹ Adaptive Immunity Regulatory Immune cells or Cytokines (Th17 Lymphocyte, IL-17 Cytokines, Foxp3 / Treg Lymphocyte)

¹⁰ Immunoglobulin Expression: sIgA, IgM, IgG, IgA

¹¹ SCFAs: butyrate, acetate, propionate

¹² Oxidative Stress: Increased Free Radical Markers (MDA), Decreased Anti-Oxidant Markers (SOD, CAT, GSH)