Summary of: Evaluating the effect of spaceflight on the host–pathogen interaction between human intestinal epithelial cells and Salmonella Typhimurium

Key findings and quantitative results:

- **RNA-seq and iTRAQ Analysis**: - **HT-29 Cells**: - **Flight vs. Ground Cultures**: - **Flight Cultures**: - **Upregulated Genes**: - **Pro-Inflammatory Genes** (TNF, IL-1, NF-κB, NOD signaling) - **Cell Chemotaxis Genes** (CXCL1, CXCL2, CXCL3, CXCL8, CCL20) - **Pro-Differentiation Genes** (NFKBIZ, RELB) - **Downregulated Genes**: - **Glycolysis Genes** (SLC2A3, HK2, PFKFB3, PFKFB4, PDK1) - **Fatty Acid Metabolism Genes** (FADS1, FADS2, ELOVL5, EHHADH, SIRT4) - **Glycolytic Genes** (FBS interference) - **Ground Cultures**: - **Upregulated Genes**: - **Pro-Inflammatory Genes** (TNF, IL-1, NF-κB, NOD signaling) - **Cell Chemotaxis Genes** (CXCL1, CXCL2, CXCL3, CXCL8, CCL20) - **Pro-Differentiation Genes** (NFKBIZ, RELB) - **Downregulated Genes**: - **Glycolysis Genes** (SLC2A3, HK2, PFKFB3, PFKFB4, PDK1) - **Fatty Acid Metabolism Genes** (FADS1, FADS2, ELOVL5, EHHADH, SIRT4) - **Glycolytic Genes** (FBS interference) - **Flight vs. Ground**: - **Enriched GO Terms**: - **NF-κB Transcription Factor Activity** - **Epstein-Barr Virus Infection** - **Enriched KEGG Pathways**: - **Rheumatoid Arthritis** - **Cell Surface/Membrane** - **Exosome** - **Fibrinogen Complex** - **Hypoxia** - **Protein Degradation**

- **Protein Expression**: - **Flight vs. Ground Cultures**: - **Cytoskeletal Proteins**: - **KRT8, KRT18** (Downregulated) - **ACTG1, TUBA1C** (Upregulated) - **ALDH1A1** (Upregulated) - **HSPA1A** (Upregulated