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Supplemental information

Integrative analysis reveals marker genes for intestinal mucosa barrier repairing in clinical patients

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Supplemental Information

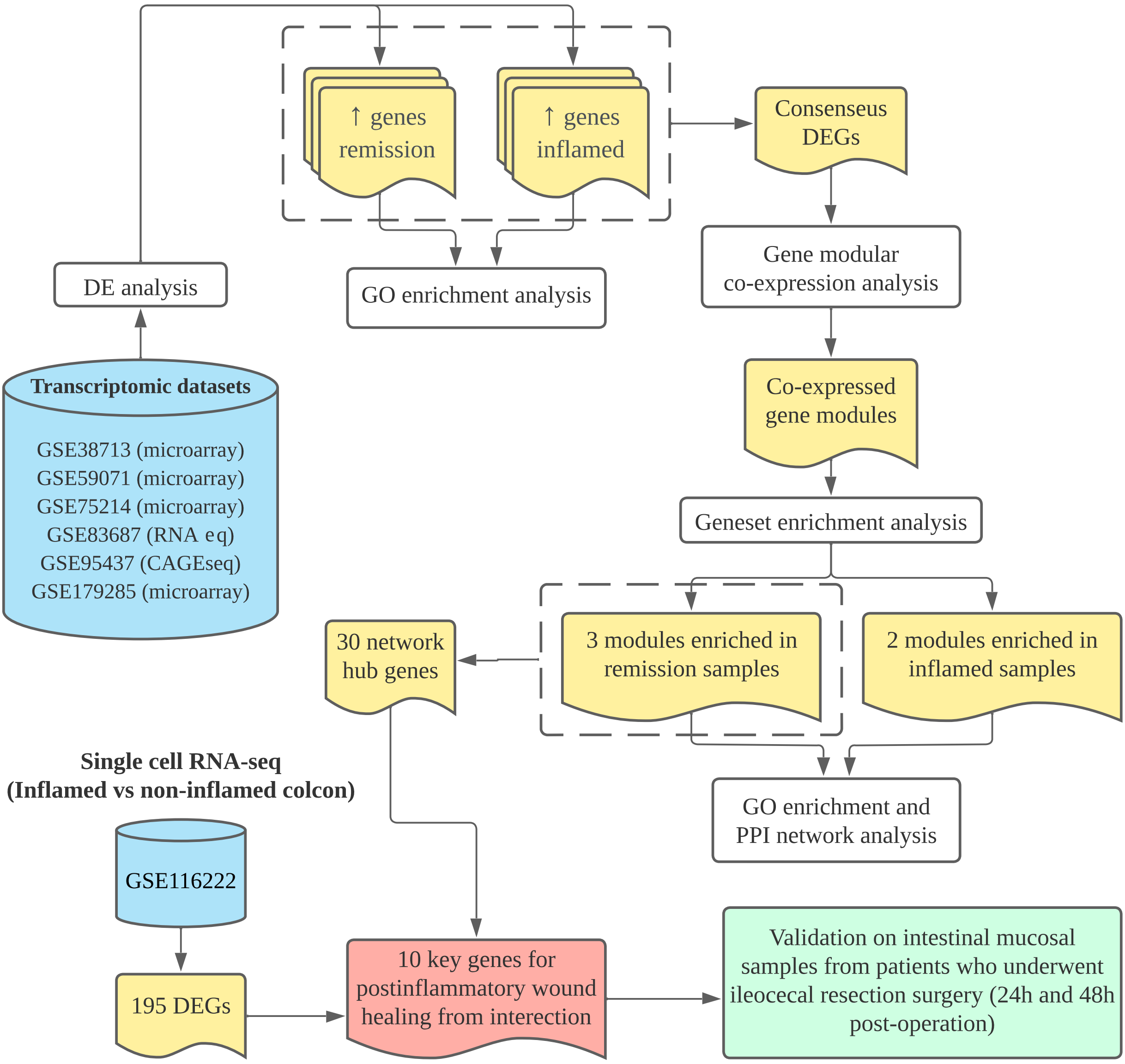
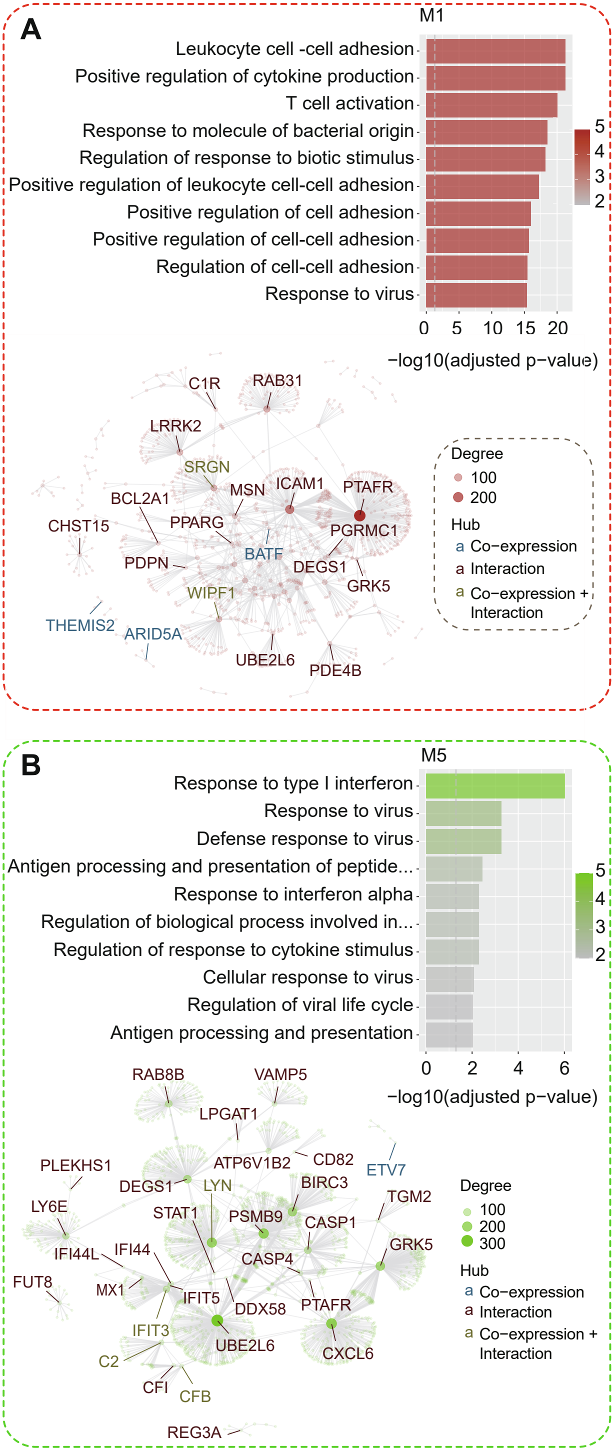


Figure S1. Flowchart of this study, related to all figures and tables. DE, differential expression. DEGs, differentially expressed genes. GO, Gene Ontology. PPI, protein–protein interaction.

Figure S2. Co-expressed gene module 1 and 5 of GSE179285, related to Figure 2 and Table S3.
Top: GO-BP enrichment of genes in M1 and M5. The top 10 terms enriched in each module are listed.
Bottom: Protein-protein interaction (PPI) and correlation networks of genes in each module. Each dot (hub) represents a gene, and lines connecting the genes indicate gene correlations or PPIs (demonstrated by hub colours). The size of the hubs demonstrates the degree of connectivity.



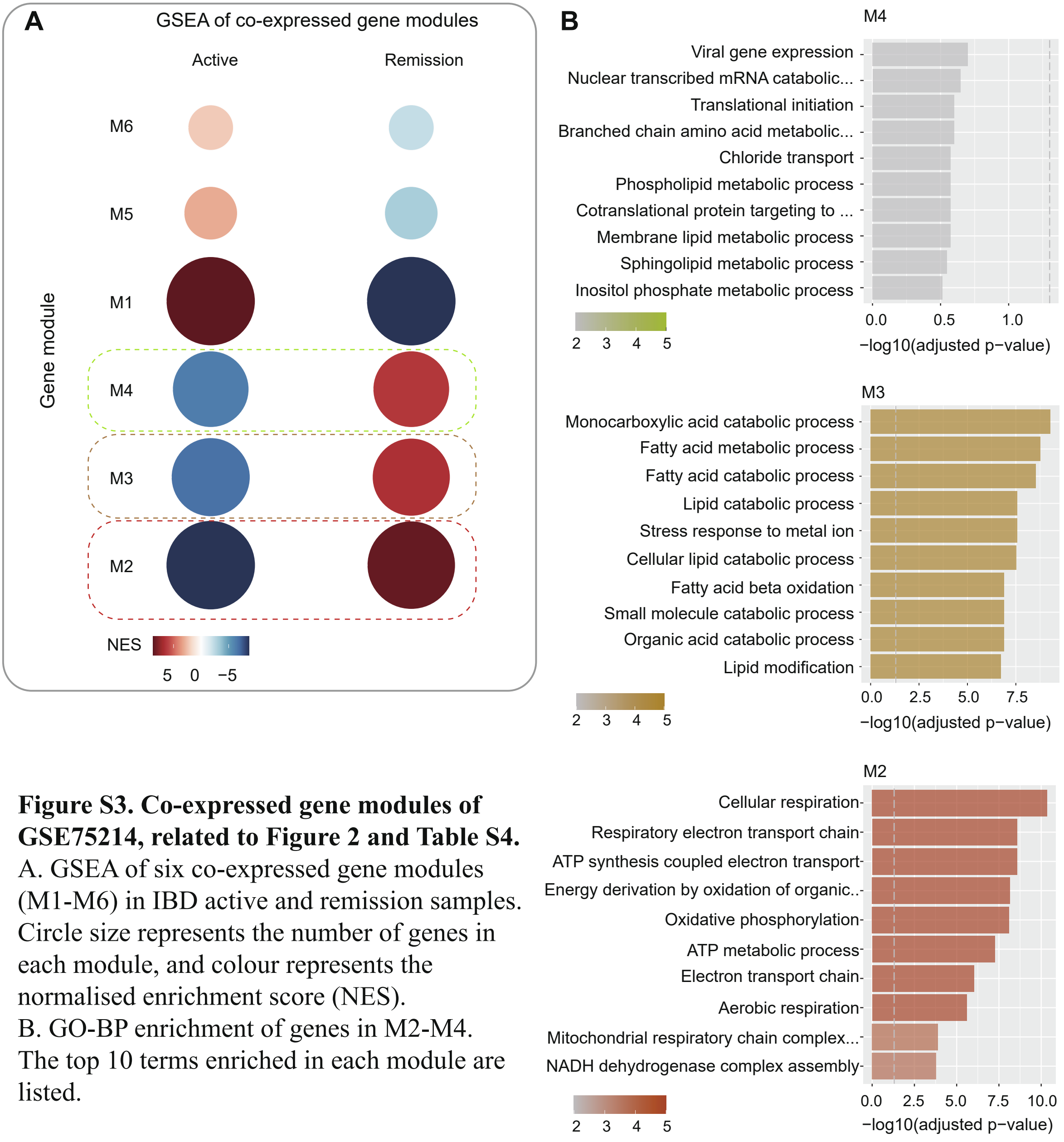


Figure S3. Co-expressed gene modules of GSE75214, related to Figure 2 and Table S4. A. GSEA of six co-expressed gene modules (M1-M6) in IBD active and remission samples. Circle size represents the number of genes in each module, and colour represents the normalised enrichment score (NES).
B. GO-BP enrichment of genes in M2-M4. The top 10 terms enriched in each module are listed.

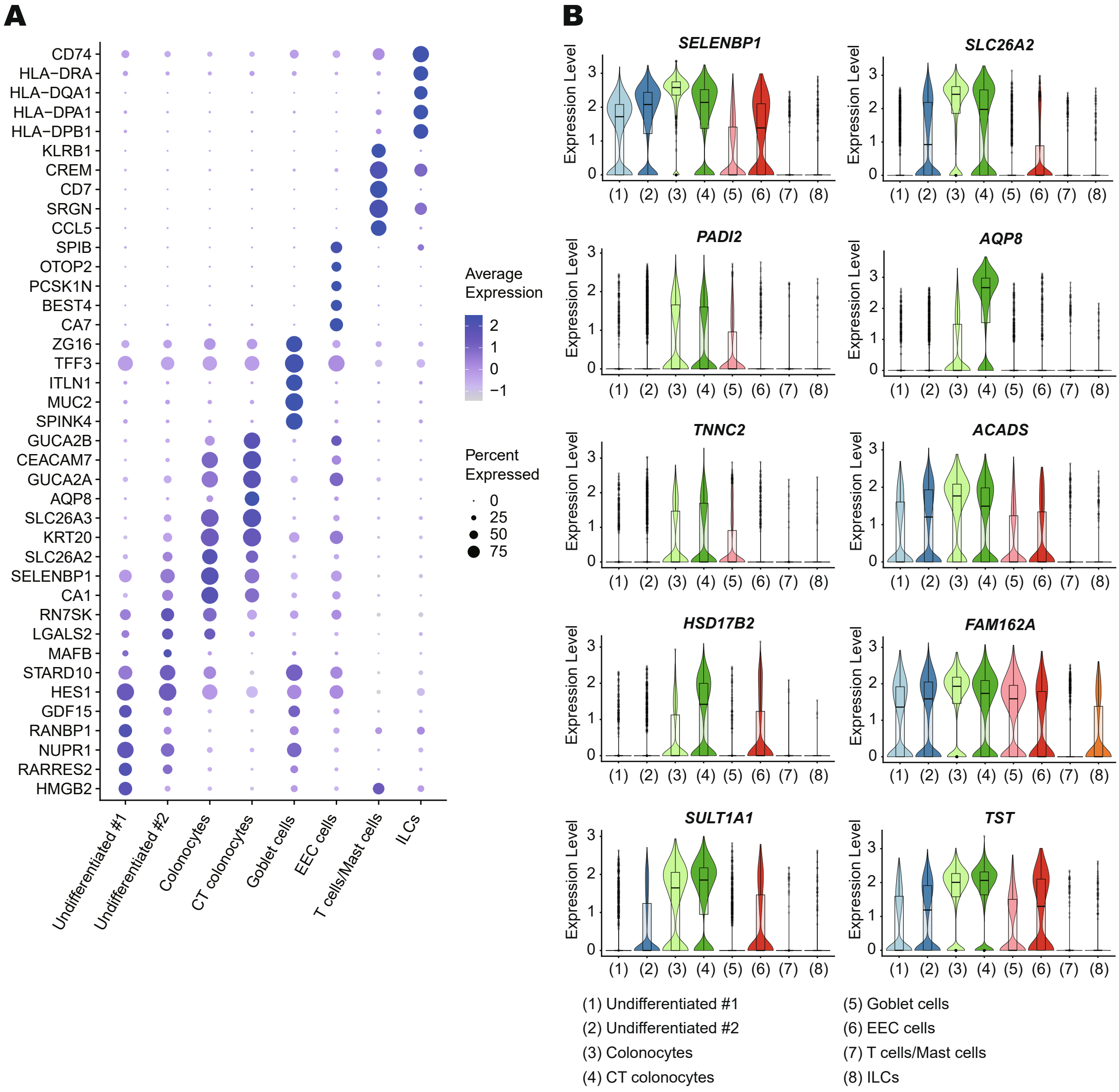


Figure S4. Cell-specific marker gene expression, related to Figure3.

A. The dot plot shows the top five marker genes in each type.

B. The violin plot shows the average expression of the 10 marker genes in each cell type.

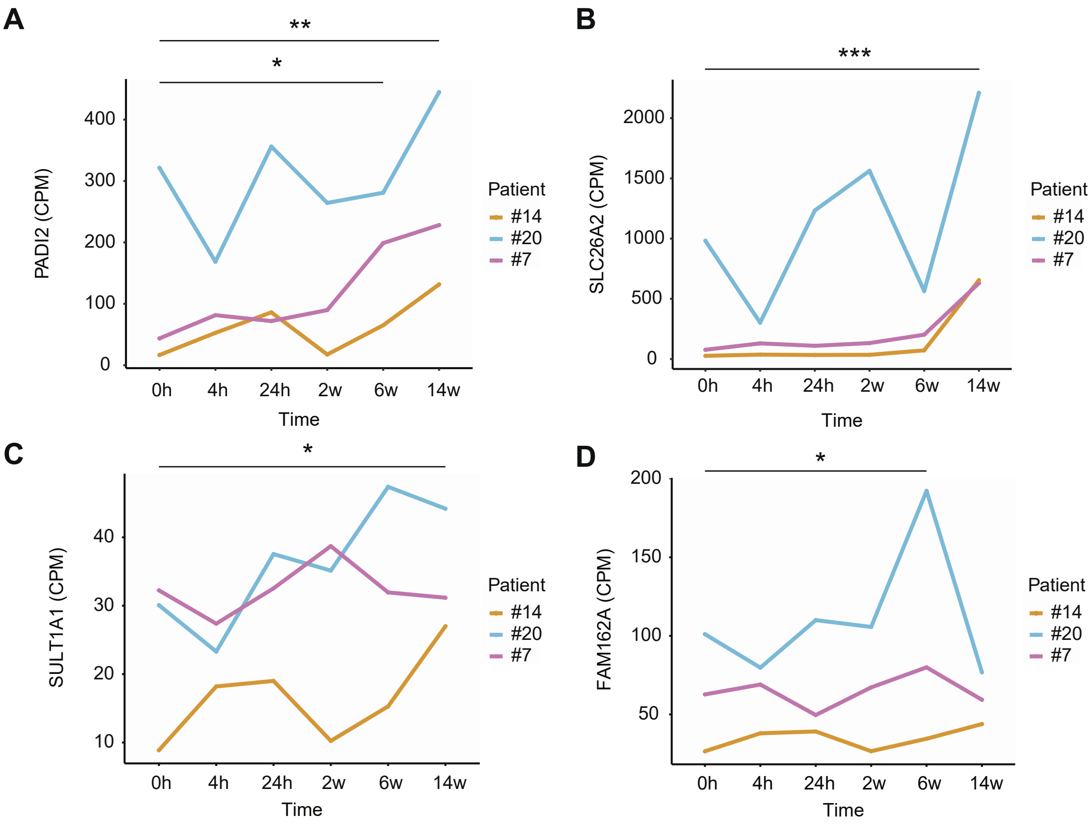


Figure S5. Validation of the marker genes using published longitudinal RNA sequencing dataset, related to Figure 3 and Table S8. Upregulation of *PADI2, SLC26A2, SULT1A1* and *FAM162A* is associated with intestinal barrier restoration after treatment with Olamkicept. P values were calculated by edgeR glmQLFTest.

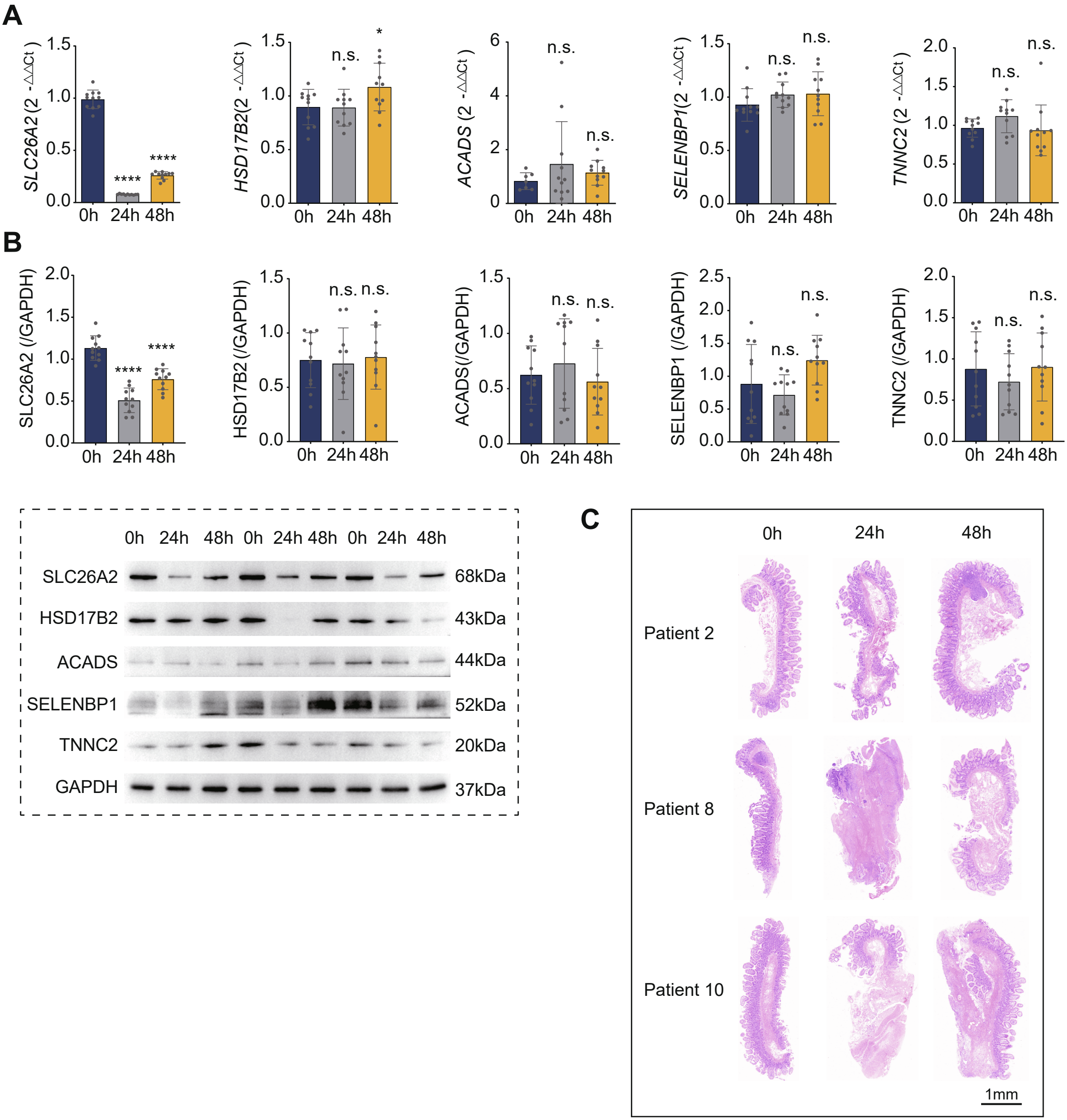


Figure S6. Expression and morphology analyse of patient intestinal mucosa samples, related to Figure 4. (A-B). q-PCR and western blotting analyses on *SLC26A2, HSD17B2, ACADS, SELENBP1* and *TNNC2* in intestinal mucosa samples collected from clinical patients. (C) Images of representative histological sections of patient intestinal mucosa samples at 0 hours, 24 hours, and 48 hours post-surgery (H&E staining). Scale = 1 mm. *P≤0.05, **P≤0.01, ***P≤0.001, ****P≤0.0001, one-way ANOVA with Tukey's multiple comparisons test. Data are represented as mean ± standard deviation.