

FUSOBACTERIUM NUCLEATUM PLAYS A PATHOGENIC ROLE IN IRRITABLE BOWEL SYNDROME VIA URIC ACID - MEDIATED MAST CELL ACTIVATION

shengtao zhu

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Poster

Colorectal

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Fusobacterium nucleatum drives IBS-like symptoms in mice through uric acid-mediated mast cell activation, identifying a novel therapeutic axis.

KEY POINTS

- Monocolonization of antibiotic-treated mice with *F. nucleatum* induced IBS-like symptoms including increased visceral hypersensitivity and gastrointestinal transit by recruiting and activating mast cells.
- *F. nucleatum*-mediated purine metabolic reprogramming generated uric acid in intestinal epithelial cells that directly stimulated mast cell activation via purine nucleoside phosphorylase.
- IBS mouse models showed higher abundance of *F. nucleatum* that positively correlated with visceral hypersensitivity.
- *F. nucleatum*-driven visceral hypersensitivity and intestinal dysmotility were reversed by mast cell stabilization with cromolyn sodium and abrogated by uric acid generation inhibition with allopurinol.
- The study proposes the *F. nucleatum*-uric acid-mast cell axis as a novel therapeutic target for IBS.

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