

Development of an encapsulated cocktail of gut-microbiota-derived metabolites as a potential therapeutic modality for Ulcerative Colitis

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About the Technology: The invention presents a metabolite-based combination therapy that mimics the anti-inflammatory effects of faecal microbiota transplantation while avoiding safety risks. It uses a synergistic cocktail of gut microbiota-derived metabolites to modulate multiple inflammatory pathways simultaneously. This multi-pathway approach addresses the complex pathology of inflammatory bowel disease more effectively than single-target microbiome therapies.

Technology ID: PM-TT-MC-2026-Apr-43

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Institute: All India Institute of Medical Sciences, New Delhi

Technology Domain: Other

Disease Area (Broad): Others

Eol Start Date: 14/05/2026

Eol End Date : 20/05/2026

Need and utility of the Technology from

Public health perspective: A targeted microbiome-modulating combination therapy that addresses the root cause of IBD can improve long-term disease control, reduce relapse and treatment costs, enhance quality of life, and support sustainable healthcare and innovation in India.

Technology Readiness level (TRL):

TRL 4: We investigated the efficacy of metabolite cocktails using patient-derived intestinal organoids by assessing the viability, barrier integrity and inflammatory gene expression. Pre-clinical validation was subsequently conducted in a DSS-induced colitis model, in comparison with standard therapies, to determine therapeutic outcomes, including disease severity, histopathological damage, and modulation of intestinal inflammation.

Validation Status and Study Outcome:

- Inhouse Validation –Complete
- Efficacy Outcome: This combination therapeutic strategy enables synergistic modulation of disease mechanisms underlying IBD.

Market Potential: Pharmaceutical companies developing anti-inflammatory and microbiome-based therapies, with clinical institutions and hospital networks as adopters, and specialist gastroenterologists/hepatologists as end users for IBD (including Ulcerative Colitis) management.

Publication: NA

IP Filing: Patent Application Number - 202511124871