

TREMELLA POLYSACCHARIDE ATTENUATES COLORECTAL CANCER THROUGH AKKERMANSIA MUCINIPHILA EVS-DEPENDENT MACROPHAGE POLARIZATION

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Poster

Colorectal

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Tremella polysaccharide suppresses colorectal cancer in murine models through a gut microbiota-extracellular vesicle-immune regulation axis involving Akkermansia muciniphila enrichment and inhibition of M2 macrophage polarization.

KEY POINTS

- TP demonstrated microbiota-dependent tumor suppression in AOM/DSS murine models by inhibiting M2 macrophage polarization, confirmed through antibiotic depletion experiments
- Metagenomic sequencing revealed that TP administration enriched Akkermansia muciniphila populations in the gut
- TP-primed A. muciniphila showed enhanced suppression of M2 polarization compared to untreated controls, with xenograft models confirming reduced tumor growth and intratumoral M2 populations
- Transcriptomic analysis identified activation of EV biogenesis and secretion pathways in TP-treated A. muciniphila, and isolated bacterial EVs recapitulated anti-M2 polarization effects in vitro
- The authors propose this as the first mechanistic evidence for a dietary polysaccharide-microbiota-EVs-immunity axis and suggest it provides a translational framework for microbiota-targeted CRC therapies

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