ANTI-INFLAMMATORY EFFECT OF LMT503, A MODULATOR OF CELL METABOLISM, AMELIORATES MURINE ADOPTIVE T CELL TRANSFER-INDUCED COLITIS

ISeul PARK

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LMT503, a novel organic small-molecule compound, ameliorated adoptive T cell transfer-induced colitis in mice by modulating cellular metabolism and immune cell responses.

KEY POINTS

- Oral administration of LMT503 at 50mg/kg and 100mg/kg for 2 weeks significantly decreased disease activity index, histopathological score, and macroscopic injury score in a dose-dependent manner in a murine adoptive T cell transfer-induced colitis model.
- LMT503 suppressed Th1, Th17 cells, and M1 macrophages in the spleen while inducing M2 macrophages, and significantly increased mucin production in the colon.
- LMT503 suppressed MPO activity and gene expression of pro-inflammatory cytokines including IL-6, IL-1β, and TNF-α in colon tissue, and reduced plasma levels of IL-2, TNF-α, and IFN-γ.
- LMT503 treatment significantly increased gene expression of Ppargc1a, a master regulator of mitochondrial biogenesis, suggesting modulation of cellular metabolism towards an anti-inflammatory state.
- The authors suggest LMT503 may be a novel therapeutic drug opening new avenues for IBD treatment; the study would be relevant to researchers investigating metabolic modulation in inflammatory bowel disease.

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