

O11 CURCUMIN SUPPRESSES P38 MAPK ACTIVATION, REDUCES IL-1BETA AND MMP-3, AND ENHANCES IL-10 EXPRESSION IN THE MUCOSA OF PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Background: IBD results from activation of pro-inflammatory, and failure of anti-inflammatory pathways. p38 MAPK is central to the coordination of inflammatory responses and is raised in IBD, suggesting a critical role in pathogenesis and presenting a target for therapy. In IBD there is excess production of pro-inflammatory cytokines including IL-1 β and under-expression of the major anti-inflammatory cytokine IL-10. Fibroblasts over-produce matrix metalloproteinases (MMP), mediating tissue destruction. Curcumin, a component of the spice turmeric, is anti-inflammatory and shows clinical potential in IBD. Objectives: To assess the effect of curcumin on p38 MAPK activation and on the expression of cytokines and MMP-3 in the gut of children and adults with IBD.

Methods: Colonic mucosal biopsies and myofibroblasts (CMF) from children and adults with active IBD were cultured ex vivo with curcumin. p38 MAPK, NF-kappaB and MMP-3 were measured by immunoblotting and IL-1 β and IL-10 by ELISA.

Results: We show reduced p38 MAPK activation in curcumin-treated mucosal biopsies, enhanced IL-10 expression and reduced IL-1 β . We also demonstrate dose-dependent suppression of MMP-3 in CMF with curcumin, by a mechanism which appears to be p38-independent.

Conclusion: Curcumin, a naturally occurring food substance with no known human toxicity, holds promise as a novel therapy in IBD.