APL DOWNREGULATION IN T CELLS IN THE SETTING OF CHRONIC COLITIS

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A murine study found that CD4+ T cells are a major source of apelin in colonic tissue and that downregulated apelin expression in effector T cells may contribute to chronic colitis development, with synthetic apelin administration reducing colitis severity.

KEY POINTS

- CD4+ T cells expressed higher levels of apelin compared to other colonic cell types including epithelial cells in wild-type mice
- Apelin expression was unexpectedly downregulated in colonic tissues of chronic colitis induced by T cell reconstitution in Rag-/- mice, contrasting with prior reports of upregulation in acute DSS colitis models
- Apelin expression was significantly decreased in splenic and colonic T cells from colitis-induced Rag-/- mice compared to wild-type mice
- Differentiated T cells (Th1, Th2, and Th17) showed significantly downregulated apelin expression compared to non-differentiated control T cells in vitro
- Administration of synthetic apelin peptide APL-13 to T cell-reconstituted Rag-/- mice reduced colitis severity compared to vehicle control, suggesting apelin as a potential therapeutic target for IBD

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