Sphingosine-1-Phosphate Signaling in Inflammatory Bowel Disease

An unmet medical need exists for the development of targeted therapies for the treatment of inflammatory bowel disease (IBD) with easily administered and stable oral drugs, particularly as most patients on biologics [i.e., tumor necrosis factor (TNF) inhibitors and anti-integrins] are either primary non-responders or lose responsiveness during maintenance treatment. A new class of small molecules, sphingosine-1-phosphate (S1P) receptor modulators, has recently shown efficacy in IBD. Here we provide an overview of the mechanism of action of this novel treatment principle in the context of intestinal inflammation. The remarkable impact of therapeutic modulation of the S1P/S1P receptor axis reflects the complexity of the pathogenesis of IBD and the fact that S1P receptor modulation may be a logical therapeutic approach for the future management of IBD.