Abstract
Since its discovery, more than 60 years ago, the monoamine serotonin also known as 5-hydroxytryptamine (5-HT) has attracted considerable attention toward its role as a neurotransmitter in the central nervous system. What is often underappreciated is that the vast majority of serotonin in the body is found in gastrointestinal (GI) tract not the central nervous system. The GI tract contains about 95% of the body's serotonin which is generated primarily in the enterochromaffin (EC) cells which are the best characterized endocrine cell population in the gut. Serotonin is a key enteric mucosal signaling molecule and is considered important in maintaining intestinal homeostasis. Changes in EC cell numbers and serotonin are observed in a number of GI disorders including inflammatory bowel disease, functional disorders like irritable bowel syndrome, colon carcinoma and in various enteric infections. Due to the strategic location of EC cells in gut mucosa, it is very likely that interaction between EC and immune cells plays an important role in intestinal pathology and pathophysiology, and host defense. A major area of our current research program is to elucidate the role of serotonin in intestinal immune activation, inflammation and host defense with a view to develop improved therapeutic strategies to combat GI infection and inflammatory conditions. The talk will provide an introduction to the enteric endocrine system and serotonin, a brief review on the EC cells/serotonin response in various intestinal disorders, and will present our recent interesting and important findings on the role of serotonin in enteric infection and inflammation.

Selected Publications