Host Microbe Interactions and Intestinal Tumor Development

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Abstract
The long-standing evolutionary association with microbial communities in the gastrointestinal tract has given rise to an intimate relationship which affects many aspects of human health. Perturbations in these microbial communities by various external factors, including invasion by enteric pathogens, can disrupt this homeostasis leading to increased risk of gastrointestinal diseases including cancer. Accumulating evidence suggests that apart from the “bona fide oncomicrobes”, microbes that trigger transformation events in host cells, cancer in the gastrointestinal tract may also be influenced by drifts in a wider microbial community, a phenomenon known as “dysbiosis”. However, it remains largely unknown how these microbes or pathogens crosstalk with the host intestinal cells, in particular the stem cell niche and influence their signaling during oncogenesis. My research for the past years has been centered at understanding the interactions between the host and the microbes or pathogens in the gastrointestinal tract that may influence tumor development. I will briefly outline some of my studies involving Helicobacter pylori, a bona fide oncomicrobe, Salmonella typhimurium, an enteric pathogen capable of causing dysbiosis and on intestinal tumorigenesis.

Selected Publications for Reference