

**海外特別講演**

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**Biosketch**

Dr. Christian Jobin received his PhD in Immunology/Microbiology from Université Laval (Quebec, Canada) in 1994. He did a post-doctoral fellowship at the University of North Carolina Chapel Hill working on bacteria host interaction in the intestine. He is currently a Gatorade Trust Professor of Medicine at the University of Florida Gainesville. Dr. Jobin's research focuses on establishing mechanisms controlling host-bacteria interaction in the intestine. His laboratory is especially interested in the functional impact of bacteria in intestinal injury repair, inflammation and colorectal cancer. Using genetically engineered mice and zebrafish, germ-free and gnotobiotic technology in combination with microbial genomics, he studies the role of bacteria in intestinal homeostasis and disease states. He has published over 140 scientific papers (*Science, Nature, Immunity, J. Exp. Med., Gastroenterology*) and presented his work at various national and international scientific meetings. His research, supported by the National Institute of Health has led to numerous awards and honours (Mucosal Immunology Society Award, American Gastroenterological Association Fiterman Young Investigator Basic Research Award, UF Senior Faculty Excellence in Research Award). Dr. Jobin has served on several study sections including American Cancer Society, CCFA Fellowship and Career Awards, NIH tumor microenvironment and he is currently serving on the Gastrointestinal Mucosal Pathobiology study section (GMPB-permanent member).

## The complex impact of intestinal microbiota in cancer

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The microbiota, particularly the intestinal biota, plays a central role in host physiology and the composition and activity of this consortium of microorganisms is directly influenced by known cancer risk factors such as lifestyle, diet and inflammation. Specifically, inflammation represents a condition known to alter the microbial composition and biological activities. Although single organism such as adherent-invasive *E. coli* could promote development of colitis-associated colorectal cancer (CRC) in preclinical models, an emerging concept is that polymicrobial interaction is implicated in human pathology, including inflammatory bowel disease (IBD). We recently demonstrated that specific microbial activities are important for development of CRC, with for example the presence of the pathogenic island pks in certain *E. coli* B2 group responsible for the synthesis of the secondary metabolite colibactin (Arthur, J.C., *et al.* (2012), *Science* 338(6103), 120–123). In addition, we recently observed a correlation between presence of hydrogen sulfide (H<sub>2</sub>S)-producing bacteria (HSPB) and severity of new onset Crohn's disease (CD) in a pediatric population (Mottawea, W., *et al.* 2016. *Nat Commun* 7, 1–14). In this lecture, I will discuss the relationship between IBD-associated bacteria and the development of CRC. Using microbial genomic analysis and gnotobiotic technology, I will present evidence that inflammation is an important factors regulating the carcinogenic activities of bacteria. In addition, I will discuss the impact of intestinal microbiota on development and therapeutic response of extra-intestinal cancer. This lecture will highlight the profound modulatory effect of the intestinal microbiota on development of carcinogenesis.