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Symbiotic bacteria provide chemoprevention against *hepatitis B virus* mediated hepatocellular carcinoma in hepatitis B x transgenic mice

Chronic infection with *hepatitis B virus* (HBV) is associated with the development of progression of chronic liver disease (CLD) and the appearance of hepatocellular carcinoma (HCC). HCC is a prevalent cancer worldwide with few treatment options. Given that HCC develops most often on the background of chronic inflammation, experiments were designed to test the hypothesis that selected probiotic bacteria that suppress inflammation could be used as a simple and inexpensive means to prevent or delay the appearance of HCC. To test this, hepatitis B x (HBx) transgenic mice, which develop progressive liver lesions that culminate in HCC, were treated with a mixture of probiotic bacteria (Synbiotic 2000). The result showed a significant reduction in the number and size of dysplastic and HCC nodules compared to control transgenic mice. Microarray analysis of selected immune and cancer associated markers showed a strong reduced expression in the liver of mice treated with Synbiotic 2000 compared to controls. Thus, Synbiotic 2000 attenuates the pathogenesis of HCC, and may be useful in cancer chemoprevention, not only for HCC, but perhaps against other cancers that often develop on the background of chronic inflammation.

Biography

Mark A Feitelson received his PhD in Microbiology and Immunology in 1979 from the UCLA School of Medicine. He was an American Cancer Society Post-doctoral Fellow at Stanford University from 1980-82, and was then recruited to the Fox Chase Cancer Center by Dr. Baruch Blumberg (Nobel laureate). In 1991, he became Associate Professor of Pathology and Cell Biology and Head of the Molecular Diagnostics Lab in Microbiology at Thomas Jefferson University. In 2007, he moved to Temple University, where he is now Professor of Biology. His research on hepatitis B and liver cancer has been supported by NIH for more than 25 years, has more than 130 publications, and is presently Head of the Professional Science Master's program in Biotechnology at Temple University.

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