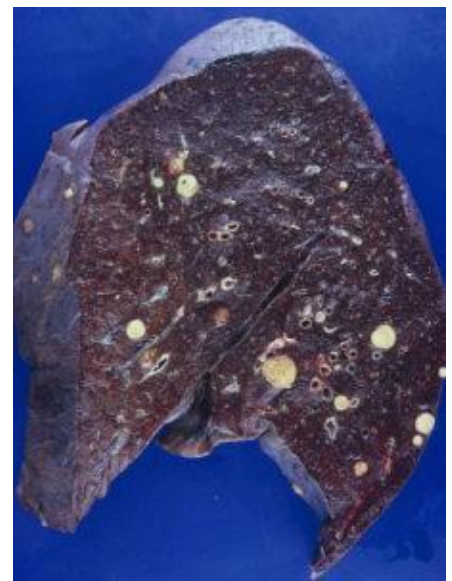
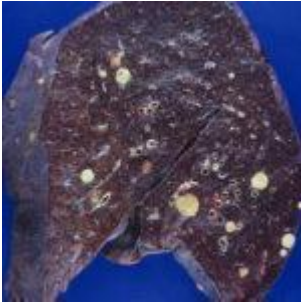


Gut microbiota suppress liver cancer



Metastatic stage of hepatocellular carcinoma (Yale Rosen, Wikimedia Commons)

The gut microbiota has been shown to influence numerous pathways in the human body. Researchers have now found that the gut microbiota play a beneficial role in reducing cancerous tumours.

This study, led by Hani El-Nezami, focused on hepatocellular carcinoma. This is a form of cancer that affects the liver and is considered the second deadliest type of cancer. The usual treatments for hepatocellular carcinoma include chemotherapy

and surgery, however, this is not fully effective and alternative therapies are needed.

The researchers used a mouse model to see the effect of the gut microbiota on the progression of cancerous tumours. They fed the mice a mixture of probiotics 1 week prior to inoculating a tumour into the mice. They found that both the tumour weight and size reduced by up to 40% when the mice were given probiotics.

At a molecular level, the mechanisms behind the microbiota-induced inhibition of tumour growth was not well understood. The microbiota could be working through suppression of pathogenic microorganisms in the gut or through its interaction with the mucosal system which would affect systemic immunity as a whole.

The mechanism the researchers found was that the probiotics mode of action was associated with the abundance of beneficial bacteria. These beneficial bacteria produced anti-inflammatory molecules which were able to regulate pro-inflammatory responses between the gut and the tumour.

Altogether, this study highlights the importance of the gut microbiota in fighting cancer. It reveals that probiotics may be used in cancer therapy; even for cancers outside of the gut. The study also provides a novel mechanism of how the probiotics are able to influence tumour growth.

Journal Article: [Li et al., 2016. Probiotics modulated gut microbiota suppresses hepatocellular carcinoma growth in mice. PNAS](#)

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