Supplementation with butyrate-producing bacteria reduces tumour load in a mouse model of colitis-associated cancer

Ana Montalban-Arques, PhD

Department of Gastroenterology and Hepatology, University Hospital Zurich, Zurich, Switzerland

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Conflict of interest: None
- **Colitis-associated cancer (CAC)** is a severe complication in inflammatory bowel disease (IBD) patients with colonic involvement.

- Patients with IBD who develop CAC have a **worse prognosis** than those with sporadic colorectal cancer and are frequently diagnosed at an advanced stage.

- In both IBD and CAC there is a detrimental **alteration of the microbiota**.

**Aim:** Study how gut microbiota contributes to the onset/prevention of CAC
The AOM/DSS Model of Colitis-associated Carcinoma

- **Dextran sulfate sodium (DSS)** treatment induces epithelial damage and inflammation

- **Azoxymethane (AOM)** causes spontaneous DNA mutations

In combination: Colitis-associated tumor induction
Butyrate-producing bacteria protects from tumour development

**Increased anti-tumour immune response**

- **Tumour tissue**
  - PDL1+ Macrophages
  - IFNγ+CD8+ T cells

- **Non-tumour tissue**
  - B cells

**Graphs:**
- PBS
- Pepto
- Butyrate

**Legend:**
- PBS
- Pepto
- Butyrate

**AOM/DSS:**
- WT
- Rag/−

**Weeks:**
1 2 3 4 5 6 7 8 9 10
Colitis-associated tumour development depends on microbiota.

Oral supplementation with butyrate-producing bacteria reduces tumour load in the colitis-associated cancer model.

Butyrate producing bacteria promotes an increased anti-tumor immune response.

Manipulation of the intestinal microbiota might be a promising novel therapy in the treatment of colitis-associated cancer.
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