

# Abstract

**Presentation title:** An *in-vivo* study to identify the hepatoprotective properties of butyrate on hepatocellular cancer rodent models



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**Presentation type:** Oral presentation

**Abstract (250-300 words):**

Gut microbiota generates many short-chain fatty acids (SCFAs), such as acetate, propionate, and butyrate, from non-digestible and fermented carbohydrates, including dietary fibers. SCFAs can be essential in the interaction between host and gut microbiota. Butyrate shows affinity towards the transmembrane protein, G-protein coupled receptors, which are expressed on various tissues. Butyrate shows anti-inflammatory properties by expressing various cytokines and inflammatory enzymes. Butyrate has anti-inflammatory effects via downregulating proinflammatory cytokines like TNF- $\alpha$ , IL-1 $\beta$ , and IL-6. The SCFA receptor will mediate the activation of monocyte and neutrophil mediated inflammation, also induces regulatory T cells proliferation and enhance gut integrity with IL-21 secretion, and protection against diabetes. Hepatocellular carcinoma (HCC)

results from many genetic alterations in many pathways like hepatocyte growth factor/c-MET, PI3K/ PTEN/Akt/mammalian target of rapamycin (mTOR) and Wnt/ $\beta$ -Catenin pathway where no single pathway is dominant. Knowing the severity of HCC there are number of strategies, and selecting butyrate as a therapeutic agent can act as an anti-inflammatory agent by regulating the HDAC inhibition mechanism. Butyrate is also a known secondary metabolite produced by the gut microflora; will help in restoring the dysbiosis state of the gut and may be a potentially working on the Gut-Liver axis, thereby allowing them to restore the HCC condition. Methodology includes the induction of liver cancer in rodent model by chemical inducers, then reversing it by butyrate. Various biochemical analysis is performed, along with gene expression studies for the validation of the model.

**Biography (150-200 words):**

I, Aneri Joshi, is currently pursuing Doctoral degree from Nirma University, India. I am well acquainted with the field of Cancer biology and is currently working on the Evaluation and characterization of butyrate nano formulation for its hepatoprotective and immunomodulatory effect on Liver cancer models. I am passionate towards research as to find a therapeutic way to improve the health and well-being of the liver cancer patients. I am a member of the ASCO community and have been a part of Indian cancer congress. I have won the meritious award for the best poster presentation in 3<sup>rd</sup> ICC conference.