

15<sup>th</sup> International Conference on

# CLINICAL GASTROENTEROLOGY AND HEPATOLOGY

May 04-05, 2023 | Zurich, Switzerland

Received date: 10.03.2023 | Accepted date: 15.03.2023 | Published date: 08.05.2023

## Butyrate paradox

**Alina Makarova**

Research Institute of Health Organization and Medical Management, Russia

Butyrate reduces colorectal cancer development risk, being transported into epithelial cells of the colon via monocarboxylate transporter 1 (MCT1) and sodium-coupled monocarboxylate transporter 1 (SMCT1). Experimentally, tumor cells of the colon epithelium show a decrease in butyrate adsorption, probably due to MCT1 and SMCT1 proteins expression decrease.

To study butyrate level in copro filtrate samples of patients with colorectal cancer.

**Materials and methods:** 21 patients with newly diagnosed colorectal cancer were examined: 10 males with a median age of 71 (61-73) years old and 11 females with a median age of 64 (63-74) years old. The concentration of short-chain fatty acids (SCFA, C2-C6) in copro filtrate samples of all patients was studied using gas-liquid chromatography.

**Results:** Patients showed the SCFA total level decrease – 5.2 (4.2-6.8) mg/g, suggesting the metabolic activity decrease in the colon microflora, but also butyrate concentration variability, with median value of 0.953 (0.518-4.275) mg/g and its share of 18 (13-22)%. The studied group showed 47.6% of decrease cases in butyrate level, 23.8% had an increase, 28.6% showed normal values.

**Conclusions:** Studies have shown that butyrate has tumor suppression properties, which is probably due to its effect as a histone deacetylase inhibitor. It also promotes carcinogenesis in various models of colorectal cancer. This discrepancy in the effect of butyrate on the neoplastic process is called the “Butyrate paradox” (PedroGonçalves et al, 2016) and is possibly related to the concentration of butyrate.

A deeper understanding of microbial metabolites’ action may open up new possibilities for non-invasive biomarkers search.

### Recent publications

1. Makarova A.A., Diukova G.M., Ruchkina I.N., Romashkina N.V., Indeykina L.K., Degterev D.A., Dbar S.R., Parfenov A.I. Visceral sensitivity in diagnostics and treatment of severe irritated bowel syndrome // *Terapevticheskii arkhiv.* - 2022. - Vol. 94. - N. 2S. - P. 356-361. doi: 10.26442/00403660.2022.02.201394
2. L.Kh. Indeykina, E.A. Sabelnikova, G.G. Varvanina, S.U. Silvestrova1, A.V. Smirnova, L.M. Krums1, A.A. Viaznikova (A.A. Makarova), A.I. Parfenov. The role of fibroblast growth factor 19 in pathogenesis of hologenic diarrhea of the patients who underwent cholecystectomy. *Terapevticheskii Arkhiv (Ter. Arkh.).* 2021; 93 (2): 174–178. DOI: 10.26442/00403660.2021.02.200621
3. Indeykina Lilia, Sabelnikova Elena, Varvanina Galina, Silvestrova Svetlana, Smirnova Anna, Krums Larisa, Viaznikova Alina (Makarova Alina), Dbar Saria, Parfenov Asvold The impact of regulatory molecules of hepato-biliary synthesis of bile acids on developing diarrhoea after cholecystectomy. *Latvijas Universitātes 79. starptautiskā zinātniskā konference “Starpdisciplinārie pētījumi medicīnas koledžās”.* Tēžu krājums. Rīga: Latvijas Universitāte, 2021. 55 lpp. ISBN 978-9934-18-668-4 (PDF) <https://doi.org/10.22364/luszk.79.spmk.tk>

15<sup>th</sup> International Conference on

# CLINICAL GASTROENTEROLOGY AND HEPATOLOGY

May 04-05, 2023 | Zurich, Switzerland

## Biography

Alina Makarova is a Gastroenterologist, Junior Researcher at the Laboratory of Functional Diagnostics of Intestinal Diseases at the Loginov Moscow Clinical Scientific Center. She was trained in the specialty of medical care in the State Medical Institution &quot; North Ossetian State Medical Academy& quot; of the Ministry of Health of the Russian Federation. Vladikavkaz, Res. North Ossetia Alania. She Passed the primary accreditation in the specialty of medical care on 12.07.2017 on the basis of the State Medical Institution &quot; North Ossetian State Medical Academy & quot; of the Ministry of Health of the Russian Federation. Vladikavkaz, Res. North Ossetia Alania. She completed a clinical residency in the specialty &quot; gastroenterology & quot; on the basis of the State Medical Institution of the Moscow State Medical Center named after A. S. Loginov DZM.

e: 207lec@mail.ru