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## Molecular Characterization of *Cannabis Sativa* towards the Development of New Gastrointestinal Pharmacotherapy

Hinanit Koltai<sup>1\*</sup>, Ido Laish<sup>2,3</sup>, Moran Mazuz<sup>1</sup>, Fred Konikoff<sup>2,3</sup>, Shely Matalon<sup>2,3</sup> and Timna Naftali<sup>2,3</sup>

<sup>1</sup>Agricultural Research Organization, Volcani Center, Israel

<sup>2</sup>Department of Gastroenterology and Hepatology, Meir Medical Center, Israel

<sup>3</sup>Sackler Faculty of Medicine, Tel Aviv University, Israel

*Cannabis sativa* is widely used for medical purposes. However, despite the hundreds of compounds in this plant and their potential synergistic interactions in mixtures, to date, only aroma, popular strain name or the content of two phytocannabinoids—THC and CBD, are mostly considered for therapeutic activity. Preliminary studies and case reports indicate that cannabis may be beneficial in inflammatory bowel disease. Many experimental laboratory models indicate that cannabis may also be beneficial for the treatment of adenomatous polyps and colorectal cancer (CRC). However, new specific and effective cannabis-based drugs must be developed to achieve adequate medical standards for the use of cannabis. The quality and therapeutic activity of herbal cannabis products to pharma grade should be improved for the treatment of inflammatory bowel diseases (IBD) and their efficacy should be examined against adenomatous polyps and colorectal cancer (CRC). For that purpose we have identified cannabis extracts and fractions active against inflammation or cytotoxic for colon cells and tissue. Their comprehensive molecular profiles were determined and mixtures of compounds were tested *in vitro* and *ex vivo* for synergistic activity compared to individually isolated cannabis components. Also, the biological pathways in colon cells targeted by these new formulations were partially characterized. These studies form a base for precise formulations of active compounds towards the development of new cannabis-based gastrointestinal, pharmaceutical drugs.

### Biography:

Prof. Hinanit Koltai, PhD is a Senior Research Scientist at the Agricultural Research Organization, Volcani Center, Israel. She is the Editor of books and a member of Editorial boards in international scientific journals. She is a leading Author of more than 80 peer reviewed publications and more than 30 book chapters and invited reviews. Her lab expertise is with the biological and chemical analysis of cannabis for medical use. The research in the lab is focused on deciphering the "entourage effect" between cannabis compounds while specifying their influence at the molecular level on human cells and tissues.