

CEIPEX MENDELU 3

Položka / Field	Obsah / Content
CEIPEX Research Topic Level2	Molecular Medicine
Název výzkumné skupiny	Research group for Molecular Biology and Nanomedicine
Téma	Novel natural therapies against colorectal cancer progression associated with structural diversity of bacterial lipopolysaccharides in the intestine
Anotace k tématu	The proposed topic is aimed at understanding how structural diversity of bacterial lipopolysaccharides contributes to intestinal dysfunction and colorectal cancer progression, and at developing novel natural therapies to counteract these effects. Particular emphasis will be placed on the development of sustainable extraction methodologies to obtain bioactive compounds from Cannabis sativa seeds and inflorescences using advanced extraction technologies, and on their ability to modulate LPS-driven inflammatory and tumour-promoting processes. The topic will encompass advanced cellular, 3D, organoid, and in vivo chicken embryo chorioallantoic membrane models, combined with chemical profiling, metabolomics, molecular docking, and structural approaches. A particular focus will be placed on elucidating phytochemical-LPS interactions and identifying bioactive compounds with anti-tumour and anti-angiogenic potential.
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