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Lactobacillus: New endeavors for the obesity management

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Obesity is regarded as epidemic of 21st century. Pancreatic lipase (PL) hydrolyses triglycerides to glycerol and fatty acids. Therefore, PL inhibition is a potential therapeutic agent to combat obesity. In this quest, numerous extracts from plants, fruits, fungi, algae and bacteria have been screened for their potential inhibition of PL activity and have been found greater than anticipated reductions in related risk factors than would be expected to be produced by its effects on body weight alone. In light of the above facts, the present work has been designed to isolate and screen probiotic lactobacilli species for pancreatic lipase inhibition. Isolation was carried out followed by DNA extraction and confirmation of lactobacilli through genus specific PCR. Preliminary identification was done for non-lipase producers, selected non-lipase producers were subjected to the pancreatic lipase inhibitory activity. Out of which 10 cultures were showing pancreatic lipase inhibitory activity and were selected, among them 5 cultures were showing good probiotic attributes *in vitro* (acid tolerance, bile tolerance, cell auto-aggregation ability, cell surface hydrophobicity, bile salt hydrolase (BSH) activity, antimicrobial activity, antibiotic susceptibility,) followed by antioxidative potential (ABTS, DPPH and FRAP) for both the activities and were confirmed by species specific PCR. Sequencing was also done for these samples. Optimization of pancreatic lipase inhibitory activity was also done. Therefore, it is suggested that pancreatic lipase inhibitory probiotics can be used as the new players, although more interventions need to be done *in vitro* and *in vivo* for clinical use.

Biography

Manpreet Kaur has completed her BSc in Food Science and Microbiology from Kanya Maha Vidyalya (Guru Nanak Dev University) and Master's degree in Microbiology from Lovely Professional University. Presently she is pursuing PhD in Dairy Microbiology at National Dairy Research Institute, India on obesity management through digestive enzyme inhibiting probiotic *Lactobacilli* spp., for which she has participated in many conferences. She is also the recipient of Rajiv Gandhi National Fellowship from Government of India and also qualified ICAR-NET (National Eligibility Test).

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