

Abstract

The presence of bacteria in the human body is a crucial factor for immune system development and its appropriate functioning. This bachelor thesis focuses on the beneficial effects of *Bacteroides fragilis* and explores the possibility of altering its abundance in the colon by dietary intervention. Both Czech and foreign literature was reviewed and the practical part was carried out using a questionnaire survey.

The research indicates that it is possible to affect the proportional representation of *Bacteroides fragilis* in the colon with specific nutrients and dietary habits. Additionally, the theoretical part describes the benefits of this bacterial species on the human immune system. *Bacteroides fragilis* produces short-chain fatty acids, antimicrobial substances and polysaccharide A, which are the principal components that influence the host.

The practical part builds upon the findings of the theoretical part. It investigates the knowledge of a random sample of Czech citizens about the effect of diet on microbiota composition. It also explores people's view on probiotics and their acquaintance with food composition. The conclusion of the thesis is a correlation between the theoretical and practical part.

The intestinal microbiota is a relatively compact unit with complex interactions. Diet can not alter solely one bacterial species. We have to think of the microbiota as a community where individual members are dependent on each other and overall human health. Further research could lead to the introduction of administration of suitable *Bacteroides fragilis* strains as probiotic bacteria.

Keywords

Bacteroides fragilis, immune system, immunomodulation, diet, microbiome, probiotics