

## ABSTRACT

Pharmaceuticals are micropollutants, that enter the environment mainly through Wastewater Treatment Plants (WWTPs). In this work microbial community has been studied in sediments of a stream, which is located near a WWTP. This sediment is contaminated with pharmaceuticals. The subject of this thesis was to determine the presence of pharmaceuticals and microbial community in this study site and to point out possible relationships between these factors. Twelve pharmaceuticals were identified at concentrations reaching levels of ng/g. The concentrations of the compounds form a gradient that decreases with the distance from WWTP. Microbial biomass was estimated using the analysis of phospholipid fatty acids and microbial community was described using next-generation DNA sequencing. The analysis of phospholipid fatty acids pointed out, that with the increasing distance from WWTP the amount of microbial biomass decreases. DNA sequencing revealed large microbial diversity in the studied sediment. For evaluation of the relationship between the microbial community and pharmaceuticals in the stream sediment, Principal Component Analysis (PCA) was used. The result of PCA showed, that in the stream sediment (depth 10-30 cm), *Betaproteobacteria* negatively correlated with triclosan and *Clostridia* negatively correlated with tramadol.

*Keywords: microbial community, pharmaceuticals, micropollutants, biodegradation*