

Abstract

Charles University in Prague

Pharmaceutical Faculty in Hradec Králové

Department of Pharmaceutical Botany and Ecology

Candidate: Mgr. Kateřina Podlipská

Consultant: RNDr. Jitka Vytlačilová, Ph.D.

Title of thesis:

Evaluation of drugs mixture toxicity

In this thesis were evaluated two substances, ibuprofen, from the group of non-steroidal and anti-inflammatory drugs, and ciprofloxacin, from the group of fluoroquinolone antibiotics. These substances belong to drugs with the highest worldwide consumption and are very often detected in the environment. In this thesis was monitored chronic toxicity of these drugs and their mixtures by using Multigenerational toxicity test with the protozoan *Tetrahymena thermophila*. For ciprofloxacin was detected the value of 24hEC₅₀ 0,12 mg/l (0,11 to 0,14 mg/l), for ibuprofen was 24hEC₅₀ 0,18 mg/l (0,15 to 0,22 mg/l), for the mixture of ciprofloxacin and ibuprofen (in ratio 1:1) was 24hEC₅₀ 0,08 mg/l (0,07 to 0,10 mg/l), for the mixture of ibuprofen and ciprofloxacin (in ratio 1:2) was 24hEC₅₀ 14 mg/l (0,11 to 0,18 mg/l) and for the mixture of ibuprofen and ciprofloxacin (in ratio 2:1) was 24hEC₅₀ 0,19 mg/l (0,17 to 0,22 mg/l). Synergistic or additive effect of these two drugs in the mixture was not observed.

Keywords: ecotoxicology, ciprofloxacin, chronic toxicity, ibuprofen, *Tetrahymena thermophila*.