

## MEETING ABSTRACTS

# EFFECT OF IBUPROFEN AND DICLOFENAC ON SELECTED INDICES IN COMMON CARP (*CYPRINUS CARPIO*)

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A significant global problem of contamination of the aquatic ecosystem is the abundance of pharmaceuticals entering the aquatic environment as a result of their widespread use. An important group of drugs commonly detected in surface waters are non-steroidal anti-inflammatory drugs (e.g. ibuprofen and diclofenac). The aim of the present study was to evaluate the potentially negative effects of diclofenac and ibuprofen administered in feed on selected biochemical and haematological parameters of common carp (*Cyprinus carpio*). The test organisms were exposed to various concentrations of these non-steroidal anti-inflammatory drugs at concentrations of 20 and 2000 µg/kg for six weeks. The test substances were administered in the feed at a dose of 3 % of body weight. After the end of the exposure, blood was drawn with a sterile syringe from the tail vein into Eppendorf tube containing sodium heparin. One part of heparinized blood was used for analysis of selected haematological indices (red blood count, white blood count, haematocrit, haemoglobin). The second part of the heparinized blood was centrifuged (4 °C, 10 min, 3,000 rpm) and the separated plasma was used for analysis of basic biochemical indices (glucose, albumin, total protein, cholesterol, LDH, ALT, AST, ALP, calcium, phosphorus, ammonium) using biochemical analyser Konelab 20i. Our results confirm that the substances tested pose a risk to aquatic organisms.

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*Keywords: nonsteroidal anti-inflammatory drugs; toxicity; fish; oral exposure; blood*

## References

1. Parolini M. Toxicity of the non-steroidal anti-Inflammatory drugs (NSAIDs) acetylsalicylic acid, paracetamol, diclofenac, ibuprofen and naproxen towards freshwater invertebrates: A review. *Science of the Total Environment*. 2020;740:140043.
2. Svobodová Z, Pravda D, Modrá H. Methods of haematological examination in fish (in Czech). University of South Bohemia in České Budějovice, Vodňany. 2012, 38 p.