

CONTENT

CHAPTER 1

7

General introduction

CHAPTER 2

27

Combined incubation of cadmium, docosahexaenoic and eicosapentaenoic acid results in increased uptake of cadmium and elevated docosapentaenoic acid content in Hepatocytes *in vitro*

CHAPTER 3

41

Combined incubation of cadmium, docosahexaenoic and eicosapentaenoic acid affecting the oxidative stress and antioxidant response in human hepatocytes *in vitro*

CHAPTER 4

55

The *in vitro* effect of duroquinone on functional competence, genomic integrity, and oxidative stress indices of sterlet (*Acipenser ruthenus*) spermatozoa

CHAPTER 5

65

Effects of tetrabromobisphenol A on DNA integrity, oxidative stress, and sterlet (*Acipenser ruthenus*) spermatozoa quality variables

CHAPTER 6

79

In vitro effects of bisphenol A on the quality parameters, oxidative stress, DNA integrity and adenosine triphosphate content in sterlet (*Acipenser ruthenus*) spermatozoa

CHAPTER 7

89

General discussion

91

English summary

101

Czech summary

103

Acknowledgements

105

List of publications

106

Training and supervision plan during study

108

Curriculum vitae

110