

Publication

Accumulation and effects of the UV-filter octocrylene in adult and embryonic zebrafish (*Danio rerio*)

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Wide application of the UV-filter octocrylene (OC) in cosmetics leads to contamination of the aquatic environment, but effects of OC remain unclear. Here we determine bioaccumulation and molecular effects of OC. Adult male zebrafish were exposed to 22, 209 and 383 $\mu\text{g/L}$ and embryos to 69, 293 and 925 $\mu\text{g/L}$ OC. OC accumulated in fish up to 17 $\mu\text{g/g}$. Calculated BCF varied between 41 and 136. Microarray analysis in brain and liver following exposure to 383 $\mu\text{g/L}$ OC revealed alteration of 628 and 136 transcripts, respectively. Most prominent GO processes included developmental processes, organ development, hematopoiesis, formation of blood vessels, blood circulation, fat cell differentiation and metabolism. Validation by RT-qPCR in brain and liver of adult fish and embryos included a series of genes. Blood levels of 11-ketotestosterone were not altered. The transcriptomics data suggest that OC mainly affects transcription of genes related to developmental processes in the brain and liver as well as metabolic processes in the liver.

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