

P7. CYTOTOXIC EFFECTS OF CADMIUM CHLORIDE IN THE ZEBRAFISH BRAIN

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Cadmium is indicated as a possible etiological factor in neurodegenerative diseases. In this study we have analysed the effects of 1mg/L cadmium chloride (CdCl₂), a concentration found in industrial polluted water, on brain of adult zebrafish exposed to metal for 16 days. The brains were analysed at 2, 7 and 16 days from treatment. We evaluated the neurodegeneration by the Fluoro-Jade B stain and the myelin integrity by methasol fast blue staining. The expression of glial fibrillary acidic protein (GFAP), astroglial marker, and the accumulation levels of beta-Amyloid1-42 peptide were tested by ABC technique and western blotting. Collected data showed neurodegenerative effects time-dependent and a sensible reduction of affinity to the dye in neurons axons after 7 and 16 days of exposure respect the control. Moreover, a decrease in the levels of GFAP was observed after 2 days in the order of 40% compared with the control. This decrease arrived to 50% after 16 days. In particular, a reduction of GFAP positive fibers was revealed in midbrain and in cerebellum, in medulla oblongata and after 16 days in telencephalon. Instead the levels of increased as time passed, in telencephalon, cerebellum and medulla oblongata. These data confirm the toxicity of cadmium on neuroglia cells and represent a point for discovering possible correlations between cadmium and neurological disorders as Alzheimer's disease for the data on beta- Amyloid1-42 peptide.

