International Conference on Environmental Mutagens (8th ICEM)/ Shizuoka, Japan, October 21–26, 2001.– Mutation Research. – Vol. 483, (Suppl.1) – 2001, Post. 7–15. – P. 108.

SOME 1,4-DIHYDROPYRIDINE DERIVATIVES AGAINST ENVIRONMENTAL MUTAGENIC FACTORS

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Effective antimutagens (AMs) have been found among 1,4-dihydropyridine (1,4-DHP) derivatives. Some of them reduced spontaneous mutation rates by 50 – 85% in *Drosophila*; the AM efficiency depended on the compound chemical structure and reactivity closely correlating with their electron-donating capacity. Effects of AMs on chemical muta- and clastogenesis were studied in *Drosophila* and *mouse* assays; a direct-acting mutagen ethyl methanesulfonate (EMS) was used as a model mutagen. They prevented EMS muta- and clastogenicity in *Drosophila* germ cells and mouse bone marrow; 1,4-DHP derivatives displayed higher inhibitory effects as compared with other antioxidants tested. It was interesting that chemical mutagenesis in *Drosophila* was modified by AMs depending on treatment procedures. Their protective potential was revealed when treating

larvae. In this case, 1,4-DHP derivatives decreased mutation rates depending on their concentrations (10–250 mM), and their efficiency reached 50%. In mouse bone marrow, they reduced the level of both EMS-induced chromosome aberrations (metaphase analysis) and micronucleated cells. One of these compounds was successfully used for prevention of deleterious consequences of Chernobyl radionuclide contamination for *Cyprinus carpio L.* All reproductive indices were improved and the amount of abnormal larvae as well as the aberrant cell frequencies in embryos and two-day larvae was reduced if carps received AM. AM important ability to decrease radionuclide concentration in germ products of stripped fishes was shown. Taking into account both their nontoxicity and biological activity spectrum, AMs of this series are promising drugs for inhibition of environmental mutagenesis and carcinogenesis.