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INFLUENCE OF INDUSTRIAL WATER POLLUTION ON MUTAGENITY OF WATER

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Today antropogenic pressure on environment in a form of chemical mutages is a serious problem. The solution of ecological problems arising from written above requires the development and exploitation of system for ecological monitoring capable of adequate assessing the genetical risk for habitans living in different regions of country with varied degree of environmental objects pollution.

The battery of tests to detect gene mutations in *Salmonella typhimurium* (Ames test), chromosomal aberrations induction on meristematic root cells of *Allium cepa* (anaphase test), dominant lethal mutations, somatic mutations and recombinations in *D. melanogaster* were used for water samples genotoxicity determination.

We've carried out investigations to reveal mutagenic activity of water polluted by different plants of Western Ukraine region: coal-mining, oil refinery, chemical, cellulose-paper, food, and sulphur-mining. Purification procedures used are shown not provide complete mutagenic effects neutralization of polluted water. The mutagenic effects vary in expression degree and mechanism of realization. Water from coal- mines induces gene mutations and inhibits cell proliferation. Wastes from chemical and oil industries leads to increasing of gene mutations as well as chromosomal aberrations, also affect cell proliferation and did not induce dominant lethal mutations. Polluted water from plants of food industry cause gene mutations and somatic recombination. Polluted water from cellulose-paper and sulphur-mining factories did not induce chromosomal aberrations and somatic recombination.

Study of mutagenic background of water from aquatoria where industrial wastes get into was the next step of research. Water samples were taken 1-15 km from factory territory. The highest genotoxic activity of water was detected in samples taken from the rivers Zakhidny Buh, Solokiya, Tismenitsya, Zubra end Dnister. Induction of gene mutations as well as chromosomal aberrations and somatic recombinations are detected. The spectrum of chromosomal aberrations gives us proof that in water samples are chemical mutagens. As we can deduce from analysis of somatic mutations and recombinations induction, several chemical compounds present in samples are potential cancerogens.