

Aveiro district (previously studied for its mercury levels). A total of 53 women were enrolled in the study at the time of hospital admission for delivery. Smoking status was established on the basis of cotinine concentrations analyzed in maternal plasma by ELISA. Exposure to Hg was assessed by analysis of umbilical cord samples using atomic absorption after thermal decomposition (direct combustion).

Results obtained showed that there was no statistically significant association between observed DNA damage and tobacco smoke exposure or Hg levels. However, the median cotinine value was below 1 ng/mL indicating low exposure to this environmental pollutant. After data discretization, an increase in DNA damage levels was associated to cotinine increases but as the number of individuals included in each class is very low, further studies on this matter are needed.

To the public health sector, these data constitutes a significant contribution to improve knowledge on the effects of tobacco smoke exposure and to support the implementation of measures that may reduce the negative health impact of tobacco smoke, particularly during pregnancy.

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THE ASSESSMENT OF GONADOTOXIC ACTIVITY OF THIAMETHOXAM PESTICIDE IN FORM OF THREE GENERICS

Yana KOLIANCHUK, Inna RASHKIVSKA,
Laboratory of Experimental Toxicology and Mutagenesis,
L.I. Medved's Research Center of Preventive Toxicology,
Food and Chemical Safety MH, Ukraine, Kiev

The purpose of the study was to assess the influence of Thiamethoxam TG (technical grade) pesticide (insecticide-neonicotinoid) produced by three different manufactures (test substances T1, T2 and T3 each of them contains 95.5%, 95.4% and 97% of active ingredient respectively) on fertility parameters of Wistar Han male rats. The studies were performed exposing 40 Wistar Han male rats for each test substance in two different doses (low dose of 1.5 mg kg and high dose of 15 mg kg). The detection of functional state of the gonads and evaluation of the reproductive ability for males were performed in the end of exposure period. The reproductive parameters for intact females mated with exposed males were assessed on the 20th day of pregnancy. The test substances T1 and T3 in the maximum dose of 15 mg kg reveal signs of reproductive toxicity only for exposed males. The test substance T2 in the maximum dose in its turn reveal signs of reproductive toxicity for exposed males and intact females. Based on the results we can conclude that obtained effects are dose-dependent and no effect levels are the same for all test substances (1.5 mg kg). The observed additional embryotoxic effect at the maximum dose for the test substance T2 presumably is the result of the origin of the test substance.

GENOTOXICITY TESTING OF GENERIC PESTICIDES GLYPHOSATE IN FLUCTUATION AMES ASSAY

Volodymyr BUBALO, Tetiana USENKO,
Tetiana TKACHYK, Olena ZUBKO,
Laboratory of Experimental Toxicology and Mutagenesis,
L.I. Medved's Research Center of Preventive Toxicology,
Food and Chemical Safety MH, Kiev, Ukraine

Determination of potential genotoxic effects within generic pesticide studies is an obligatory requirement for justifying their safety usage and evaluation of potential risks. In our research center, we successfully conduct the recommended standard mutagenicity test battery in compliance with GLP, which includes gene mutation tests in bacteria *in vitro* (fluctuation Ames assay OECD 471) and gene mutation tests in mammalian cells *in vivo* and *in vitro* (micronucleus assay OECD 475, 487 and metaphase chromosomal aberration assay OECD 474). The aim

of the study was to research the potential mutagenic effects of generic pesticides glyphosate 95.2% (Gly1), glyphosate 95.6% (Gly2), glyphosate 95.0% (Gly3) in screening fluctuation Ames assay using *Salmonella typhimurium* strains TA98 and TA100 with and without metabolic activation, preincubation in the suspension was 90 min. Selection of concentrations were based on preliminary experiment in pre-screening assay which was performed before the main test. In the absence of cytotoxicity and precipitation in preliminary experiment the following concentrations (5; 1; 0.2; 0.04; 0.008; 0.0016 mg/ml) were defined. As a result: obtained experimental data of positive and negative controls were ranged with own historical control. Validated XL template was used to calculate the results. Our results showed statistically significant absence of the mutagenic effect of generic pesticides glyphosates Gly1, Gly2, Gly3 in fluctuation Ames assay.

Keywords: *fluctuation Ames assay, glyphosate, generic pesticide, genotoxicity, GLP*

ACTUALITY OF HIGH QUALITY HISTOLOGICAL MAINTENANCE IN TOXICOLOGY LABORATORIES IN GLP

Liudmila TKACHENKO,

L.I. Medved's Research Center of Toxicology, Ministry of Health, Kyiv, Ukraine

At L.I. Medved's Research Center of Preventive Toxicology, Food and Chemical Safety, Ministry of Health, Ukraine, over recent years on the base of morphological laboratory is adjusted a standard of GLP system. It has become urgent to unify experiments, to plan their clearly, proper conduct and thereby achieve the certainty of the results.

The modern morphology has a complex of techniques, allowing to decide the issues of changes that occur at the tissue level. First of all, it are histological methods, also histochemistry, histoimmunology, morphometry etc. For efficient and safe operation, the routine and histological research practice requires the use of the latest technology, required high technical equipment of laboratory with modern equipment.

In the laboratory of the Center uses the automated equipment for processing of biological tissues, whose main advantages are: high quality of processing, saving time due to one-stage operation with many preparation, storage programs of procedures in the device thereby increasing the speed and effec-

tiveness of studies, decreasing sharply the particle of defective and damaged samples, which increases the reliability of the results of microscopy.

In the laboratory implemented the system of storage samples and documentation. The special rooms are equipped for archive with limited and controlled access. Due to the integration at any time you can control and transfer the information to the laboratory information management system, and thereby ensure the total traceability and recovery of all phases of the study, which is one of the main tasks of the GLP system.

MUTAGENICITY STUDIES OF HERBICIDE NICOSULFURON IN THE MICE BONE MARROW MICRONUCLEUS ASSAY

Tetiana TKACHUK, Volodymyr BUBALO, Oleksander TKACHUK, Olena ZUBKO, Olena KOSTIK,

L.I. Medved's Research Center of Preventive Toxicology, Food and Chemical Safety, MH, Kiev, Ukraine

Our laboratory of mutagenesis is conducting research on the genotoxicity of chemicals in the battery test systems. Studies carried out in accordance with the requirements of GLP. One of the methods used by the laboratory is mammalian *in vivo* erythrocyte micronucleus test (OECD 474).

We explored 3 samples of active ingredients of herbicide nicosulfuron from different manufactures. These samples were generic and had various percentages. Mutagenicity studies examined on CD₁ healthy young adult mice, males, which weight was 18-20 g and acclimated to the laboratory conditions for at least five days.

The test substance was administered as an aqueous emulsion, once orally. Every samples studied in three doses 2500, 250, 25 mg kg⁻¹ and accompanied with positive and negative controls. The time of exposure was 24 hours.

As a result of studies of all of testing samples of nicosulfuron mutagenic effect was not found. However, in high concentrations of test chemicals, it was noted increase of frequency of micronucleus in polychromatic erythrocytes was not significant in comparison to the negative control. The relationship between the frequency of micronuclei, the percentage and impurities is not observed.