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Letter to the editor

THE MICE AS IDEAL BIOMODEL IN THE GENOTOXICITY ASSAYS, FINLAY INSTITUTE, CUBA

At the present time they have been described a wide range of *in vivo* and *in vitro* assays to detect the genotoxic damage at the different expression levels, all with a high sensibility and specificity.

In this sense the regulatory agencies in turn have elaborated strict protocols for the realization of the same ones and they suggest which or which of them to use in each moment, bequeathing a preponderant weight to the *in vivo* assays. These assays besides being expensive have as main disadvantage the nonexistence of a consent for the exclusive use of a determined animal species that reproduces the physiologic processes faithfully to likeness with the humans. By way of general rule the group of more used mammals has been the rodents and inside this the mice.

The main problem in this respect it resides in that the researchers use the different existent genetic lines of the biomodel in a risky way or for convenience, but in the generality of the cases this decision is far from a theoretical-practical basement that justifies the selection, conditioned fundamentally by the lack of studies in this respect. This drives to that in many occasions the results obtained by different research groups that similar products work or of the same group in different moments cannot be comparable, because it is to known that the genetic differences among the lines of the biomodel present differences in the expression from the damages to level of the genome.

With the result that in not few opportunities are necessary to repeat a study because the negative controls present levels of damages similar to the positive controls; although the worst in the consequences is really the to mask of the true genotoxics potentialities of the evaluated product. This happens because the biomodel has a very low rate of expression of the genotoxic damage and for it a bigger margin when emitting an approach of sure product what leads to accept a sure compound when it is not really it or on the contrary, when the biomodel has a discharge rate of expression of the genotoxic damage and consequently a smaller margin to emit a product approach for sure then it would drive to discard a sure product to conceive as genotoxic.

Reason why the aim of this letter to the editor was to offer the final results of this study, when we evaluating and to compare the spontaneous and induced indexes in mice of both sexes of the Balb/c, NMRI, OF-1 and C57/BL6/cenp lines in search of the ideal biomodel, by means of the comet assay, micronucleis assay and chromosomal aberration assay in bone marrow cells and the head sperm morphology assay, to determine the most efficient line, on the base of the significant appearance of lower spontaneous indexes and high induced indexes to the cyclophosphamide administration.

We obtained as a result that the Balb/c line in both sexes differs significant with the other lines where they were the lower spontaneous indexes and highest induced indexes to the mutagen action, keeping in mind the epididymi spermatic concentration, spontaneous frequency of anomalous heads of sperms, erythrocytes number in bone marrow with micronucleis, citotoxicity index (relationship among old erythrocytes/young erythrocytes), total cells with structural aberrations in the chromosomes, mitotic index (number of cells in metaphase) and the leukocytes percent in peripheral blood that they experience damage in the DNA according to 1, 2, 3, 4 level of smaller to more damage. Also the C57/BL6/cenp line was the less efficient and less sensitive to the mutagen, being obtained the higher spontaneous results and the lowest induced results.

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