

GENETIC TOXICOLOGY

Mammalian Erythrocyte Micronucleus Test

The standard test battery for genotoxicity includes a bacterial gene mutation assay, a cytogenetic test for chromosomal damage and an *in vivo* test for chromosome damage using rodents, in this case, the *in vivo* micronucleus test. The test is used for the detection of damage induced by the test substance to the chromosomes or the mitotic apparatus of erythroblasts and evaluates micronucleus formation in erythrocytes sampled either in the bone marrow or peripheral blood cells¹. CIEnP offers the Mammalian Erythrocyte Micronucleus Test according to OECD 474, in GLP or non-GLP conditions.

Species: *Mus musculus* (Swiss)

Number of animals/group: 10-12 animals

Route of administration: upon request, according to OECD 474 guidance

Treatment mode: upon request, according to OECD 474 guidance

Main read-outs: animal condition, mainly signs of toxicity (prior to and throughout the test period), proportion of immature erythrocytes among total erythrocytes, number of immature erythrocytes with micronucleus (for each animal and per group).

Validation Data

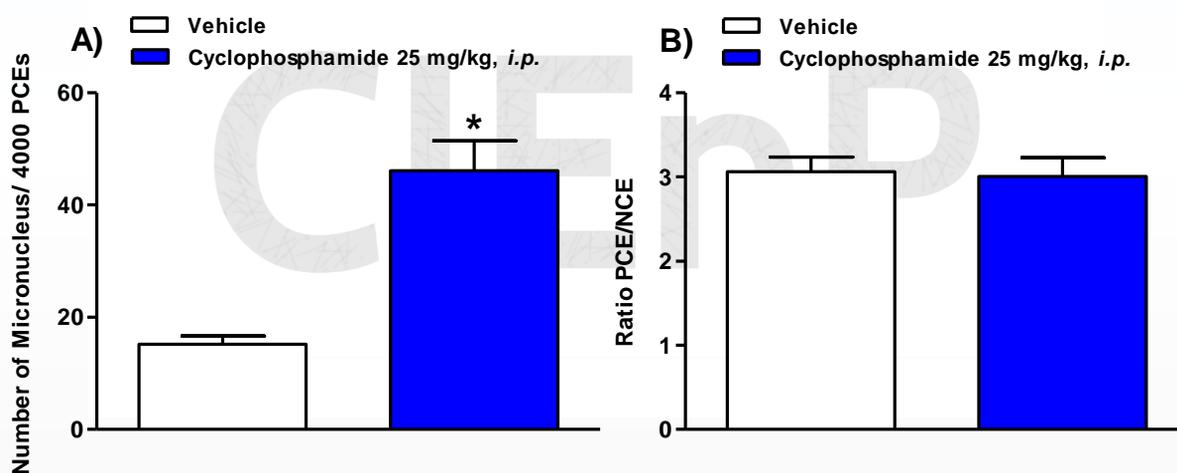


Figure: Number of micronucleated immature erythrocytes (A) and proportion of immature erythrocytes among total erythrocytes (B). Cyclophosphamide (25 mg/kg, i.p.) was used as reference item (positive control group). Each column represents the mean \pm SEM of 12 mice per group. For statistical analyses was used *t* test, **P* < 0.05 versus vehicle group. (PCEs: Polychromatic Erythrocytes, immature; NCEs: Normochromatic Erythrocytes, mature)

To avoid bias and to allow reproducibility and reliability all *in vitro* experiments were conducted in accordance to the 474 OECD guidance¹. Mice colony from Charles River Laboratories is breed and maintained in SPF conditions. The project includes study plan and final report. Raw data are inspected by quality assurance unity. The experimental procedures was previously approved by the CIEnP Committee on the Ethical Use of Animals.

References:

¹ OECD Guideline for Testing of Chemicals: Mammalian erythrocyte micronucleus test. TG 474. Adopted September 2014.

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