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6-Dimethylaminopurine and cyclohexamide are mutagenic and alter reproductive performance and intrauterine development *in vivo*

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ABSTRACT. The compounds 6-dimethylaminopurine (6-DMAP) and cyclohexamide (CHX) are currently used to stimulate the development

of embryos produced by nuclear transfer in the production of cloned mammals with a great deal success. This study investigated the effects of 6-DMAP and CHX *in vivo* using biological assays to evaluate reproductive performance in females, teratogenesis, and mutagenesis. The results of this study demonstrated that the activating agents of oocyte cytoplasm, 6-DMAP and CHX, altered the reproductive performance of the experimental animals, as well as increased the rate malformations. In addition to these adverse effects, the administration of these compounds in pregnant females resulted in genotoxic and mutagenic toxicity, as determined by comet and micronucleus assays carried out in peripheral blood samples, respectively. Based on these findings and that alterations in DNA are important, morpho-functional teratogenesis and diminished embryonic viability, suggesting that 6-DMAP and CHX, which are utilized during the cloning of mammals, are responsible for the fact that embryos produced by nuclear transfer show low viability after implantation *in utero* or after birth because of congenital malformations and/or alterations in their DNA.

Key words: Comet assay; Cycloheximide; Somatic cell nuclear transfer; Mutagenicity; Teratogenicity

