

论著

检测着床前胚胎非整倍性诱变的小鼠动物模型

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摘要 目的:建立检测化学物对着床前胚胎是否具有非整倍诱变性的动物模型,探讨非整倍性诱变剂秋水仙素(colchicine, COL)对着床前胚胎细胞的影响。方法:以昆明种小鼠作受试动物,分为空白对照、溶剂对照和秋水仙素(0.25 mg/kg、0.5 mg/kg、0.75 mg/kg)处理组共5个组,观察小鼠着床前胚胎丝裂指数和微核率的变化。结果:①0.75 mg/kg组的丝裂指数比空白对照显著增高($P < 0.01$);②微核率随秋水仙素剂量增加而升高,呈明显的剂量依赖关系,与空白对照组比较,差异有统计学显著性($P < 0.05$, $P < 0.01$)。结论:①通过一系列预备试验,建立了一种有效地检测化学物非整倍诱变性的动物模型;②秋水仙素只有在其剂量达到一定的阈值时才能中止着床前胚胎细胞分裂;秋水仙素可诱导着床前胚胎细胞出现非整倍性,并呈剂量依赖关系。

关键词 [非整倍性](#) [着床前胚胎](#) [秋水仙素](#)

THE ANIMAL MODEL FOR INSPECTION OF ANEUPLOIDY IN PREIMPLANTATION EMBRYOS OF MICE

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Abstract Purpose : To establish a new modal system to evaluate the genetic toxicity of aneugens and to investigate the effects of colchicine (COL) on preimplantation embryo cells. **Methods :** Kunming mice were divided into 5 groups including solvent control , and COL-treatments (0.00 mg/ kg , 0.25 mg/ kg , 0.50 mg/ kg and 0.75 mg/ kg) . The mitotic index (MI) and micronucleus frequency(MNF) of cells from preimplantation embryos of mice were observed. **Results :**①The MI of the 0.75 mg/ kg group was highly significant as compared to that of the control ($P < 0.01$) . ②MNF of 0.25 mg/ kg , 0.50 mg/ kg and 0.75 mg/ kg groups were 2.99 % , 7.35 % , 10.13 % respectively and presented a dose responsive relationship with CC of MNF of COL treated groups were highly significant as compared to that of control ($P < 0.01$) . **Conclusion :** ①A new reliable animal model for evaluating the genetic toxicity of aneuploidogen was established by a series of pretest procedures. ②COL could arrest nuclear division of preimplantation embryo cells only when the dose reaches a certain level . COL may induce the aneuploidy of preimplantation embryos with dose response.

Keywords [aneuploidy](#) [preimplantation embryo](#) [colchicine](#).

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