

عنوان مقاله:

Effects of Visible Light on the Development of Mouse ۲-Cell Embryos

محل انتشار:

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تعداد صفحات اصل مقاله: 7

نویسندگان:

S.N Nematollahi Mahani - Assistant Professor of Anatomy, Afzalipour School of Medicine, and Kerman Neuroscience Research Center, Kerman  
University of Medical Sciences and Health Services, Kerman, Iran

H. Pahang - M.Sc Student of Anatomy, Afzalipour School of Medicine, Kerman University of Medical Sciences and Health Services, Kerman, Iran

M.A Kiani - Laboratory Staff, Infertility Center, Afzalipour Hospital, Kerman, Iran

S.A.M Nematollahi Mahani - Laboratory Staff, Infertility Center, Afzalipour Hospital, Kerman, Iran

خلاصه مقاله:

**Introduction:** Mammalian embryos as well as oocytes are prone to various doses of visible light during manipulations in laboratory. The present study was designed to investigate the effects of visible light on the development of mouse ۲-cell embryos. **Method:** Non-pregnant female NMRI mice were super-ovulated with i.p. injection of ۷.۵ iu PMSG followed ۴۸ hours later with ۱۰ iu hCG. Forty eight hours after mating, the uterine tubes were removed and ۲-cell embryos were transferred into HTF medium by flushing method. Morphologically normal embryos were collected and exposed to ۱۶۰۰ Lux light for ۳۰ minutes. Every ۱۰ minutes a number of embryos were allocated into either HTF or MEM- $\alpha$  medium. Treated embryos as well as controls were incubated at ۳۷°C with ۵% CO<sub>2</sub> in air. Developmental stage of embryos was recorded every ۲۴ hours for ۵ days. Experiments were replicated ۸ times and data were analyzed with  $\chi^2$  test. **Results:** In the treatment group, the development of embryos that underwent ۳۰ min. exposure to visible light was significantly lower (۲۷% and ۲۱% in HTF and MEM- $\alpha$  media respectively) compared with control group (۴۹% and ۵۲% in HTF and MEM- $\alpha$  media respectively). Development of embryos that underwent ۱۰ and ۲۰ min exposure to visible light was lower than controls but the difference was not statistically significant. Percentage of development in HTF and MEM- $\alpha$  was nearly identical. **Conclusion:** It can be concluded that mouse ۲-cell embryos are not able to withstand the deleterious effects of visible light when the time of exposure exceeds ۲۰ min. However, lower doses of visible light may be tolerated particularly when simple media such as HTF are used.

کلمات کلیدی:

Visible light, ۲-cell embryos, Development, Mouse

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