

论著

pCXN2_mIZUMO对小鼠C57BL/6生育能力的影响

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摘要 背景与目的: 精卵融合是发生在受精过程中的重要生物学事件, Izumo是位于顶体内膜上的 I 型免疫球蛋白, 是一种具有精子特异性的膜蛋白, 在精卵融合中起关键作用。我们研究pCXN2_mIZUMO在小鼠C57BL/6肌肉中的表达及对其生育能力的影响, 为进一步研究免疫避孕手段提供实验依据。材料与方法: 用重组质粒pCXN2_mIZUMO分别免疫雌和雄性C57BL/6小鼠。ELISA测定小鼠体内的抗Izumo抗体水平, 检测小鼠抗血清在体外受精中对受精率的影响, 被免疫的雌性、雄鼠分别与正常的雄、雌鼠交配, 雌雄合笼比例为2:1, 分娩完成后统计其产仔数。结果: pCXN2_mIZUMO可以在小鼠体内诱发抗Izumo特异性免疫应答。被pCXN2_mIZUMO免疫后的小鼠抗血清在体外能够降低其受精率; 各组产仔数分别为: 实验雌鼠组 2.9±0.66; 对照雌鼠组5.4±0.82; 实验雄鼠组5.1±0.99; 对照雄鼠组6.0±1.34。实验雌鼠组的生育能力比对照雌鼠组明显降低(P<0.05)。结论: 重组质粒pCXN2_mIZUMO免疫雌性小鼠具有降低生育能力的作用。

关键词 [Izumo基因](#); [免疫避孕](#); [基因免疫](#)

Effect of pCXN2_mIZUMO on the Fertility of C57BL/6 Mice

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Abstract BACKGROUND & AIM: Sperm_egg fusion is a vital step in the process of fertilization .Izumo protein, only found on the inner acrosomal membrane, is a testis (sperm) _specific protein and belongs to the immunoglobulin superfamily. It is the key molecule which impacts on the sperm_egg fusion in the process of fertilization. In this study, we investigated the expression of pCXN2_mIZUMO in the muscle and its effect on the fertility of C57BL/6 mouse by means of gene immunization. The results could provide useful experimental data for the immunocontraceptive research. **MATERIALS AND METHODS:** Female and male C57BL/6 mice were inoculated with pCXN2_mIZUMO respectively. Sera titers of antibodies against Izumo were measured using ELISA assay and fertilization in vitro test was exerted to confirm the effect of antiserum. All the animals were introduced to mate with normal mice at a female/male ratio of 2:1. The litter size were analyzed after delivery. **RESULTS:** The immune system was induced specific response to Izumo antigen. The rate of the fertilization in vitro was decreased in the presence of antiserum values. The numbers of newborns were as follows: experiment female 2.9±0.66; control female 5.4±0.82; experiment male 5.1±0.99; control male 6.0±1.34. The fertility of female mice inoculated with pCXN2_mIZUMO plasmid was impaired. **CONCLUSION:** compared with the control female groups, low fertility was induced after vaccination with the recombinant plasmid of pCXN2_mIZUMO.

Keywords [Izumo](#); [immunocontraception](#); [gene immunization](#)

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