

Improvement of Hyperglycemia and Sexual Dysfunction in Diabetic Female Rats by an Artificial Endocrine Pancreas Developed from Mouse β Cells

Haruo HASHIMOTO 1) 2), Naoki MORITANI 2), Misao TERADA 2) 3), Pudcharaporn KROMKHUN 2), Wirasak FUNGFUAUG 2), Tomoaki NAKADA 2), Makoto YOKOSUKA 2) and Toru R. SAITO 2)

1) Central Institute for Experimental Animals, 2) Nippon Veterinary and Life Science University, 3) Nippon Medical School

Abstract :

We investigated the effects of a bioartificial endocrine pancreas (Bio-AEP) produced by mouse β cells on sexual dysfunction of streptozotocin (STZ)-induced diabetic female rats. Female rats were administered STZ (60 mg/kg BW, i.v.) at the age of 10 weeks and transplanted with a Bio-AEP including mouse β cells at the age of 14 weeks (STZ+Bio-AEP group). Lordosis and proceptive sexual behavior of female rats were observed. The results showed that after the Bio-AEP transplant blood glucose recovered from 380–450 mg/dl induced by streptozotocin to 140–230 mg/dl and suppressed lordosis and proceptive behavior also recovered. These results suggest that it is possible to reverse sexual dysfunction by continuous administration of mouse insulin.

Key Word :

bioartificial endocrine pancreas, diabetic rats, streptozotocin

Volume 59, Number 4, - 2010, ISSN 1881-7122 (online), ISSN 1341-1357 (print)