

기 세포(미국 국립보건원에 등록된 MB03세포)는 냉동 보관된 배아로 제작하였으며, 신경세포로 분화를 유도하기 위하여 retinoic acid를 이용한 4/4+ 방법을 사용하였다. 전뇌 허혈을 유도한 후 2주 째에 3×10^4 개와 1×10^5 개의 세포를 각각 중풍 동물모델의 내측중격 위치에 이식하였다. 인간배아줄기 세포의 신경세포 보호효과를 규명하기 위하여 면역조직화학 염색법을 이용하여 해마내의 세포사멸을 측정하였으며, 인지 및 기억증진의 작용을 규명하기 위하여 수중미로 학습 및 아세틸콜린성 신경세포의 활성도를 측정하였다.

Results: 수중미로 학습의 획득시행에서 4일째에 3×10^4 개군 (22.96초)과 1×10^5 개군 (16.42초)군이 control군 (47.54초)에 비하여 현저한 학습능력의 증진효과를 보였다. 또한 파지시행에서 1×10^5 개군이 기억력증진 효과를 보였다. 면역조직화학 염색법을 이용한 조직검사결과 기억을 담당하는 신경세포의 생성이 증가되었다.

Conclusions: 본 연구결과는 인간배아줄기 세포가 기억력과 관련된 아세틸콜린성 세포로 분화됨을 증명하며, 인간배아줄기 세포가 중풍에 의한 뇌 손상을 회복시키는 치료에 이용될 수 있음을 의미한다.

P-13 Preventive Effect of Korean Red Ginseng Total Saponin on Rat Infertility Induced by Polycystic Ovaries

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Background & Objectives: Polycystic ovary syndrome (PCOS) is the most common endocrine and metabolic disorder in women of reproductive age. There is some evidence that nerve growth factor (NGF) is involved in the pathogenesis of PCOS. The activation of NGF may be a factor involved in enhancing norepinephrine outflow to the gland in the EV-induced polycystic ovary. In this study, we investigated the effect of Korean red ginseng total saponin (GTS) on the ovarian morphology and NGF expressions in the ovaries, adrenal glands, pituitary and hippocampus.

Method: PCO was induced by a single injection of EV (4 mg i.m.). During the experimental period of 60 days, GTS-treated group was administered with GTS every other day, and this group was compared with a vehicle treated control group and an estradiol-injected group not subjected to GTS. At day 60, the expressions of NGF in the ovaries, adrenal glands, pituitary and hippocampus were examined by immunohistochemistry.

Results: The main findings of the present study were (1) PCO were fully developed in rats with a single i.m. injection of EV, (2) PCO showed the increased expression of NGF in the ovaries, adrenal glands, pituitary and hippocampus, and (3) GTS administration decreased NGF expressions in the ovaries and adrenal glands without affecting pituitary and hippocampus significantly.

Conclusions: Our data show that GTS improves the NGF involvement of ovarian dysfunction in PCO model.

P-14 Identification of the Differentially Expressed Genes in Endometrium between Recurrent Aborters and Normal Contrls During Implantation Window Period

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Background & Objectives: The molecular events of embryonic attachment to the endometrial epithelium and subsequent invasion into the stroma are not fully understood yet. Under the influence of ovarian steroids, the uterine endometrium undergoes profound modifications in cellular differentiation and becomes 'receptive' and enables the blastocyst to attach. A recent study has shown that the frequency of normal embryonic karyotypes significantly increases with the number of previous pregnancy loss, suggesting that as the number of pregnancy loss increases, maternal factors in endometrium involved in embryo/endometrial dialogue may become increasingly responsible for defective implantation. Main purpose of this investigation is to elucidate possible causes for reproductive failure by comparing the differentially expressed genes in endometrium between RSA and normal fertile control.

Method: Endometrial tissues was obtained from regularly menstruating and fertile women and women suffering with RSA at the implantation window period during the mid-luteal phase. None of these women were received any hormone. Tissues were obtained by curetting the endometrium, snap-frozen and stored at 70°C. After RNA extraction, cDNA was constructed. cDNAs of endometrium from women with RSA and normal fertile control were compared using GeneFishing[®] Technology. The differentially expressed gene fragments were inserted into cloning vector and sequenced. Messenger RNA level was determined with semi-quantitative reverse transcription polymerase chain reaction.

Results: mRNA of mammaglobin, mammary-specific member of uteroglobin family, was expressed in normal endometrium during implantation window period. However, the mRNA expression of mammaglobin was significantly increased in endometrium of women suffering with RSA compared to normal control.

Conclusions: Although the biological function of mammaglobin in RSA is unknown yet, the differentially expressed mammaglobin in RSA may provide the approach to resolve the molecular pathways required for successful implantation.