

PROTEOMIC CHANGES IN THE HYPOTHALAMUS OF FEMALE RATS INJECTED EXOGENOUS ANDROGEN BEFORE SEXUAL DIFFERENTIATION

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Objective: In this study, we aimed to identify protein molecules in the hypothalamus in the female rats injected exogenous androgen before sexual differentiation.

Methods: Neonatal female SD rats were randomly divided into two groups: experimental group and control female group. Four neonatal male SD rats were control male group. All animals were subjected to intraperitoneal injection of testosterone propionate as experimental group or aseptic oil as control. The rats were sacrificed 90 days after the injection and the brains were collected. 2-DE were performed in order to establish profiles of proteome from rat hypothalamus and followed by MALDI-TOF-TOF mass spectrometry was used to identify proteins differentially expressed in rat hypothalamus from experimental group as compared to normal control group.

Results: 11 differential spots were cut off from the Silver stained gel, and 9 of the spots were identified, which were Dihydropyrimidinase-like 3 (DPYSL3), heterogeneous nuclear ribonucleoprotein K(hnRNP K), Profilin2, Triosephosphate isomerase 1(Tpi 1), Carbonic anhydrase II(CA II), Annexin A3, Protein disulfide isomerase associated 3 (PDIA3), Creatine kinase-B and Secernin 1.

Conclusion: The results of the present study indicate that the development of sexual differentiation may be associated with the alteration in the expression of a large number of cytosolic proteins in the hypothalamus.