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Acta Medica Iranica

2009;47(4) : 21-27



LEUKEMIA INHIBITORY FACTOR IN FERTILE AND INFERTILE HUMAN REPRODUCTIVE TRACT IN VIVO

M. Ghaffari, S.A. Sarani, MA. Warren, I.D. Cooke

Abstract:

Maternal leukemia inhibitory factor (LIF) is required for successful implantation in mice, but little is known about its role and expression in human reproduction. Here we report on the pattern of LIF mRNA expression in 30 samples of previously fertile and 11 infertile human endometrium, 10 samples of previously fertile post-menopausal endometrium and 10 uterine (Fallopian) tubes from previously fertile women using the reverse transcriptase-polymerase chain reaction (RT-PCR). All samples were removed with informed patient consent and Ethical Sheffield university Committee approval. Pieces of each sample were processed for electron microscopy to confirm tissue normality and stage of cycle. LIF mRNA was expressed throughout most of the secretory phase (from about day 18 of the cycle) and menstruation phase (days 1-4 of cycles) in fertile women. However it was not expressed during the proliferative phase. In addition LIF mRNA was absent from the uterine tube at all stages of the cycle and from the postmenopausal and infertile tissue. These results suggest that LIF is expressed in a menstrual cycle-dependent manner in fertile human endometrium and its expression is likely to be under hormonal control and is not dependent on pregnancy. In addition, our results showed lack of LIF production in infertile women, which may suggest a role for LIF in fertility.

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