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Estradiol downregulates NF-κb translocation by Ikbkg transcriptional repression in dendritic cells.

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Source

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Abstract

To reconcile immunity and reproduction, females must allow spermatozoa to survive and control the presence of commensal microbiota and sexually transmitted pathogens during ovulation. Female steroid sex hormones exert a powerful effect on the immune system, as do the hormonal changes associated with the ovarian cycle. Dendritic cells (DCs) are immunological sentinels that link innate immunity to adaptive immunity. Upon exposure to microbial invaders in tissue, they undergo a maturational process that culminates in the lymph nodes and activates T-cell-specific immune responses. Estradiol, which is highly expressed during ovulation, has an effect on the maturation of DCs, although the molecular mechanism remains elusive. We detected that estradiol regulates expression of Ikbkg in DCs and modulates nuclear factor-κb translocation to the nucleus, thus explaining the reduced DC function observed during ovulation. This change may be an adaptive mechanism to reconcile control of infection and reproductive functions.