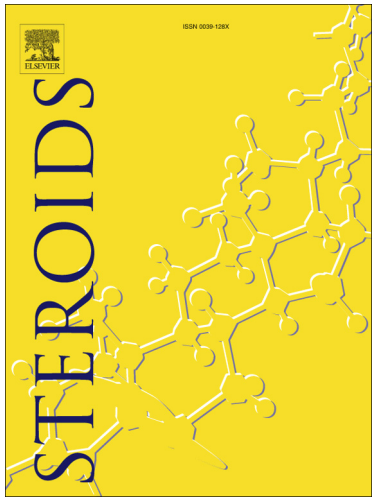

Estrogen-Regulated Transcription: Mammary Gland and Uterus

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Estrogen-Regulated Transcription: Mammary Gland and Uterus

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Abstract

Estrogen (E2) plays a central role in the developmental, metabolic and reproductive functions of both males and females. E2 acts via the estrogen receptor alpha (ERα) to regulate transcription of genes involved in numerous cellular functions. The E2-dependent engagement of ERα across the genome, collectively called the ERα 'cistrome', exhibits a high degree of complexity and plasticity. The ERα cistrome is defined by pioneer factors, transcription co-factors, posttranslational modifications of ERα, the chromatin environment, and cross talk with other signaling pathways. These inputs collectively define the E2 response that provides a selective growth advantage in pathological conditions, including breast and uterine cancers. The plasticity of the ERα cistrome during transcription continues to be of great interest in the field of cancer. The goal of the field is to decipher the molecular mechanisms underlying the selective advantage of ERα transcription to design effective therapeutic strategies for the improvement of clinical care.