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Molecular Pathways of Estrogen Receptor Action

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Estrogen receptors (ERs) are typical members of the superfamily of nuclear receptors that mainly function as ligand-inducible transcription factors that bind chromatin, as homodimers, at specific response elements. A tight reciprocal coupling between rapid 'non-genomic' and 'genomic' ER actions may also occur in many physiological processes. ERs have long been evaluated for their roles in controlling the expression of genes involved in vital cellular processes such as proliferation, apoptosis, and differentiation. Therefore, given the various and pleiotropic functions of ERs, the dysregulation of their pathways contributes to several diseases such as the hormone-dependent breast; endometrial and ovarian cancers; and neurodegenerative diseases, cardiovascular diseases, and osteoporosis. In this printed edition of the Special Issue, "Molecular Pathways of Estrogen Receptor Action", promising results on understanding the mechanisms underlying ER-mediated effects in various pathophysiological processes are represented, covering different roles of ER pathways in the tumorigenesis, the resistance to endocrine therapy, the dynamics of 3D genome organization, and cross-talk with other signaling pathways. This Special Issue also provides insight into the emerging roles of estrogen-signaling pathways in lung cancer, the tumor microenvironment, and the immune system.]

