

## Product Information

### ESTROGEN RECEPTOR- $\alpha$

Human, Recombinant  
Expressed in insect cells

Product Number **E 1528**  
Storage Temperature  $-70^{\circ}\text{C}$

#### Product Description

Recombinant Human Estrogen Receptor- $\alpha$  is produced as an active, soluble 66.4 kDa protein by a baculovirus expression system. It possesses post-translational modifications similar to those found in mammalian cells.

Estrogen receptor- $\alpha$  is a hormone-inducible transcription factor that can act positively or negatively in regulating genes involved in tissue growth and differentiation. In response to ligand binding, estrogen receptor is activated by conformational changes and the dissociation of various proteins including hsp90 and hsp70, resulting in a ligand-occupied estrogen receptor dimer.<sup>1,2</sup>

Two mechanisms may mediate the stimulation of target gene expression by ligand-bound receptor. The first is 'direct binding' whereby the ligand-bound receptor binds directly to a specific DNA sequence, the estrogen response element (ERE) and directly enhances transcription by interacting with coactivator proteins and components of the RNA polymerase II transcription complex.<sup>3,4</sup> The ERE has the sequence: 5'-GGTCAnnnTGACC-3', where n is any nucleotide.<sup>5</sup> In the second mechanism, termed 'tethering', estrogen receptor does not bind DNA directly, but rather interacts with another DNA-bound transcription factor in such a way as to stabilize its DNA binding and/or recruit coactivators to the complex.<sup>6</sup>

Estrogen receptor- $\alpha$  has been shown to induce the Erg-1 promoter via the SREs in cardiomyocytes.<sup>7</sup> The 17- $\beta$ -estradiol/estrogen receptor- $\alpha$  signaling system is also necessary for maintenance of normal postnatal function of the thymus in male and female mice.<sup>8</sup> Estrogen receptor- $\alpha$  is also associated with the expression of c-erbB-4 in estrogen signal transduction in breast carcinomas<sup>9</sup> and it couples to  $G\alpha$ , after eNOS stimulation by 17- $\beta$ -estradiol to initiate signal transduction at the cell surface in COS-7 transfected cells.<sup>10</sup>

#### Reagent

Recombinant Human Estrogen Receptor- $\alpha$  is supplied as 750 pmoles purified protein in 50 mM Tris-HCl pH 8.0, 500 mM KCl, 2 mM DTT, 1 mM EDTA, 1 mM sodium orthovanadate and 10% glycerol.

#### Precautions

Do not vortex.

#### Storage/Stability

Avoid multiple freeze/thaw cycles. Thaw in room temperature water bath and keep on ice during use. Aliquots may be stored at  $-70^{\circ}\text{C}$  without additional storage buffer.

#### Product Profile

Purity: Minimum 80% by SDS-PAGE, visualized by Coomassie Blue.

#### References

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5. Klein-Hitpass, L., et al., *Cell*, **46**, 1053-1061 (1986).
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