Anti-Estrogen Receptor alpha Antibody [PD00-04] HA721140

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	IHC-P, IF-Tissue
Molecular Wt:	Predicted band size: 66 kDa
Clone number:	PD00-04

Description: Estrogen receptor (ER) belongs to the steroid receptor superfamily of nuclear receptors. It is a protein with 553 amino acids. ER mediates regulatory functions of female sex steroids, mainly 17 (E2), on growth, differentiation and function in several target tissues, including female and male reproductive tract, mammary gland, and skeletal and cardiovascular systems. In normal and malignant human breast tissue ER is expressed in stromal cells in addition to epithelia. Only limited data are available on the role of ER in normal and neoplastic tissues. ER is mainly expressed in tumours of female sex steroid hormone responsive tissues such as the mammary gland, endometrium, and ovary. ER protein is expressed in 60-70% of female breast cancers (ER+/PR- 19-22%; ER+/PR+ 49-53%). Other tumours expressing ER are meningiomas, salivary gland tumours, some neuroendocrine tumours, and some colorectal and hepatocellular carcinomas. Uterine cervix and tonsil can be recommended as positive tissue controls for ER. In uterine cervix, virtually all squamous and columnar epithelial cells must show a moderate to strong and distinct nuclear staining reaction. Lymphocytes and endothelial cells must be negative. Tonsil is especially found recommendable as a tool to monitor the level of analytical sensitivity for the demonstration of ER. Dispersed follicular dendritic cells in germinal centers and squamous epithelial cells must show an at least weak but distinct nuclear staining reaction. In addition, tonsil can be used as negative tissue control, as B-cells in mantle zones and within germinal centers must be negative. To validate the specificity of the IHC protocol further, an ER negative breast carcinoma must be included as primary negative tissue control, in which only remnants of normal epithelial and stromal cells should be ER positive, serving as internal positive tissue control. Positive staining reaction of the stromal cells in breast tissue indicates that the IHC protocol provides a high analytical sensitivity for ER, whereas the analytical sensitivity cannot reliably be evaluated in normal epithelial cells in breast as they typically express moderate to high levels of ER.

Immunogen: Synthetic peptide within Human Estrogen Receptor alpha aa 300-595 / 595.

Positive control: Human breast tissue, human cervix tissue, human breast carcinoma tissue, human endometrium tissue.

Subcellular location: Cell membrane, Nucleus, Cytoplasm.

Database links: SwissProt: P03372 Human

Recommended Dilutions:

IHC-P	1:1,000-1:5,000
IF-Tissue	1:500

Storage Buffer: PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

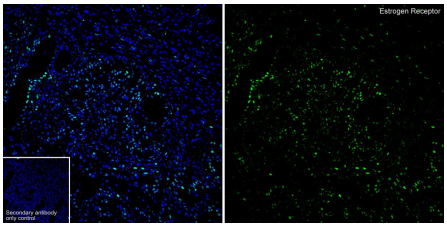

Fig1: Application: IF-Tissue

Species: Human

Site: endometrium

Sample: Paraffin-embedded section

Antibody concentration: 1/500

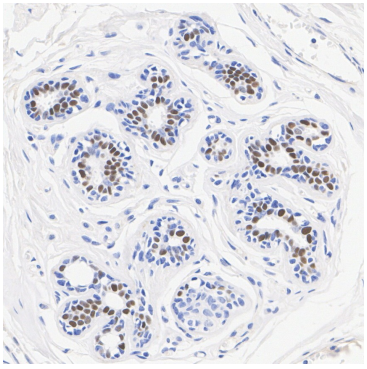

Fig2: Immunohistochemical analysis of paraffin-embedded human breast tissue with Rabbit anti-Estrogen Receptor alpha antibody (HA721140) at 1/5,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721140) at 1/5,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

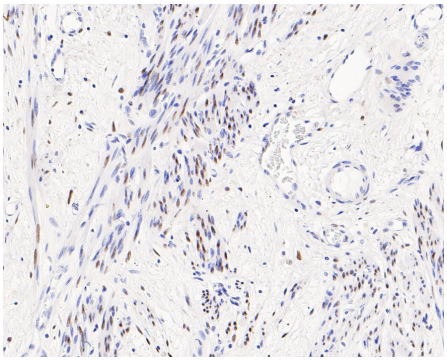

Fig3: Immunohistochemical analysis of paraffin-embedded human cervix tissue with Rabbit anti-Estrogen Receptor alpha antibody (HA721140) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721140) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

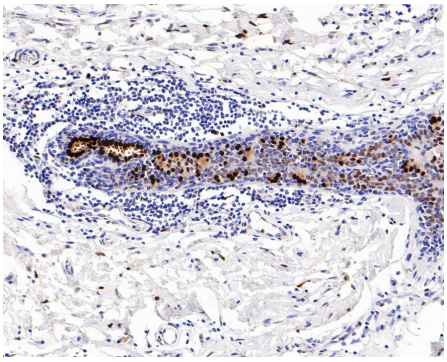

Fig4: Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue with Rabbit anti-Estrogen Receptor alpha antibody (HA721140) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721140) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

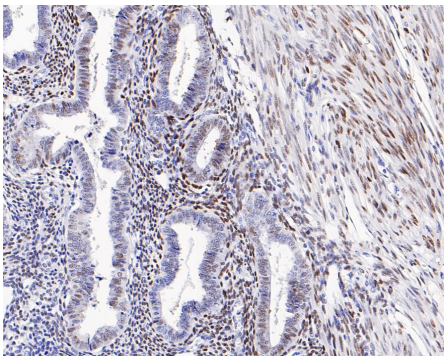

Fig5: Immunohistochemical analysis of paraffin-embedded human endometrium tissue with Rabbit anti-Estrogen Receptor alpha antibody (HA721140) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721140) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

Background References

1. Brett JO. et. al. ESR1 mutation as an emerging clinical biomarker in metastatic hormone receptor-positive breast cancer. Breast Cancer Res. 2021 Aug
2. Turner NC. et. al. ESR1 Mutations and Overall Survival on Fulvestrant versus Exemestane in Advanced Hormone Receptor-Positive Breast Cancer: A Combined Analysis of the Phase III SoFEA and EFECT Trials. Clin Cancer Res. 2020 Oct