MS Validated Antibodies

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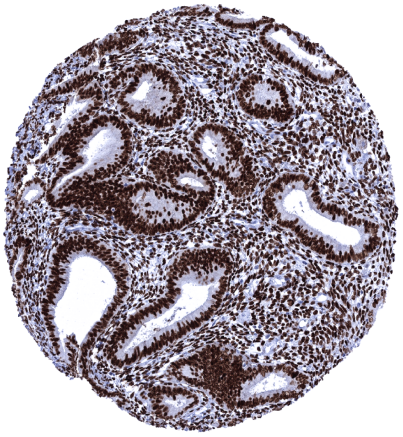
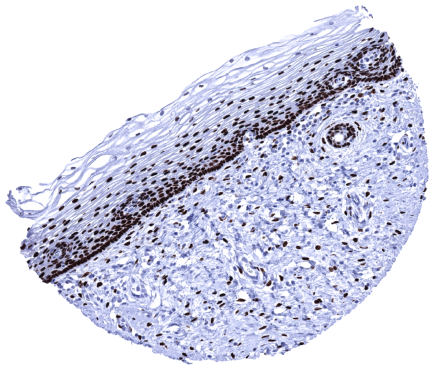
Anti-Estrogen Receptor alpha Antibody
MSVA-564R / Recombinant Rabbit Monoclonal

Human SwissProt	P03372
Human Gene Symbol	ESR1
Synonyms	Estrogen Receptor alpha delta 4*5,6,7*/654 isoform;Estrogen Receptor alpha delta 4 +49 isoform; Nuclear receptor subfamily 3 group A member 1
Specificity	Estrogen Receptor
Immunogen	Recombinant fragment of human ESR1 protein
Isotype	Rabbit / IgG
Species Reactivity	Human
Localization	Nucleus

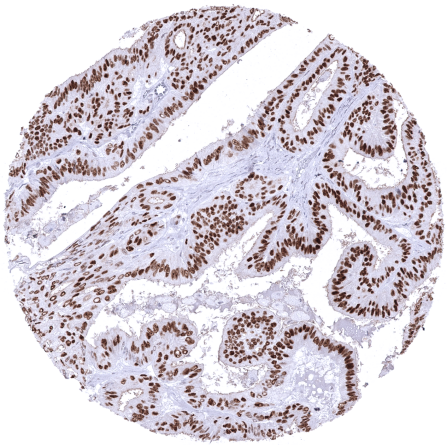
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. A ntibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide.
Positive Control	Uterine cervix: virtually all squamous and endocervical cells must show a moderate to strong nuclear staining. Tonsil: Scattered follicular dendritic cells in germinal centers and some squamous epithelial cells in tonsil crypts must show an at least weak nuclear ER immunostaining.
Negative Control	Tonsil: B-cells in mantle zones and within germinal centers must be negative.



Uterus, endometrium (proliferation) - Among normal tissues, highest levels of ER immunostaining occur in epithelial and stromal cells of the endometrium.



Uterus, cervix - An intense ER staining is seen in stromal cells and in the majority of squamous epithelial cells uf the uterine ectocervix.



Endometroid carcinoma of the ovary with strong ER immunostaining of all tumor cells.

Biology

Estrogen receptor alpha (ERα) is a nuclear, ligand-activated transcription factor. The classical model of ERα function is that its activation is triggered by estrogen binding to the ERα in the cytoplasm. ERα then dimerizes, translocate to the nucleus, binds to DNA and recruits the necessary transcriptional coregulators that are needed to regulate the transcription of target genes. ERα plays a pivotal role in the development and function of multiple organ systems, including the reproductive (female and male), central nervous, skeletal, and cardiovascular systems. Erα is well-established target for various small molecules that are applied for treating breast cancer patients. In normal tissues, the strongest ERα expression is found in the female genital tract including decidual, epithelial and stromal cells of the endometrium and the endocervix, stromal cells and squamous epithelial cells of the ectocervix, myometrium, epithelial and stromal cells of the fallopian tube, ovary, and a fraction of breast epithelial cells. A moderate to strong staining also occurs in stromal cells of the prostate and the seminal vesicles, epithelial cells of the cauda epididymis, stroma cells of urinary bladder mucosa, and in a fraction of epithelial cells in the adenohypophysis. In lymphatic tissues, dispersed follicular dendritic cells in germinal centers show a weak to moderate staining. The TCGA database on RNA expression in cancer has described highest levels of ER expression in breast and endometrium cancer followed by ovarian, cervical, and thyroid cancer. Most other important tumor entities are described to be usually “ER negative”.

Potential Research Applications

-ERα is an important drug target in breast cancer. Various new inhibitory molecules are still under development.
-Because of partly controversial data, the diagnostic utility of ER IHC should be investigated in a large cohort of tumors from different entities.
-the functional effects of plasma membrane ERα and its role in nonnuclear signaling needs to be further investigated.
-the molecular basis for tissue-type specific roles of ERα and of tissue-type specific effects of ERα inhibitors is still not fully understood.

Protocol Suggestions

Dilution: 1:150. pH 7,8 is optimal. Freshly cut sections should be used (less than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

Limitations

This antibody is available for **research use only** and is not approved for use in diagnostics. Not for resale without express authorization.

Warranty

There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.

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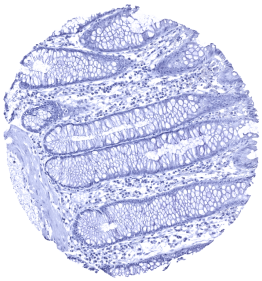
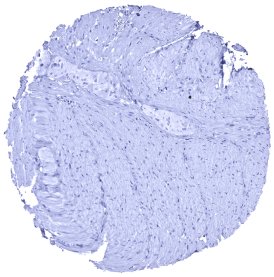
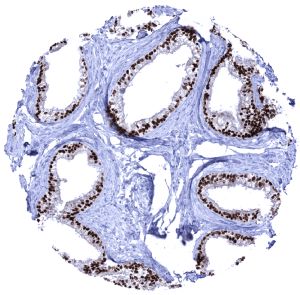


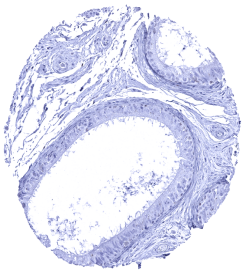
Colon descendens, mucosa



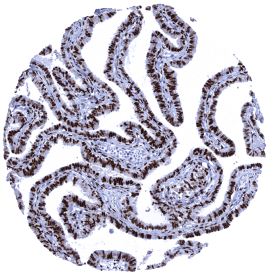
Colon descendens, muscular wall



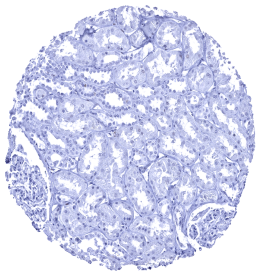
Epididymis, cauda - A moderate to strong ER immunostaining can be seen in epithelial cells of the cauda epididymis



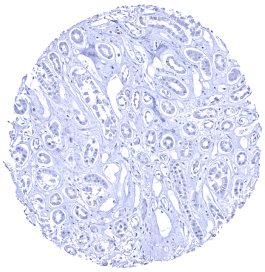
Epididymis, corpus - ER immunostaining is absent epithelial cells of the corpus epididymis



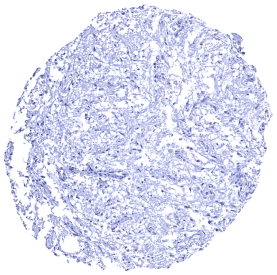
Fallopian tube, mucosa - A strong epithelial and stromal ER positivity is seen in the fallopian tube



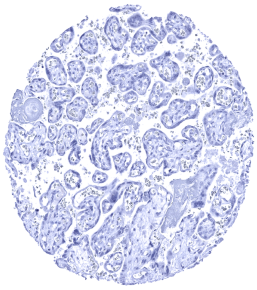
Kidney, cortex



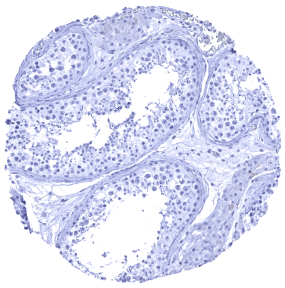
Kidney, medulla



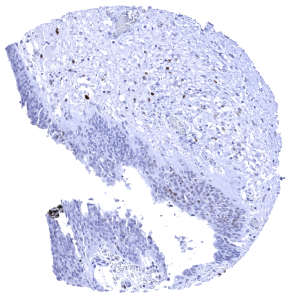
Pituitary gland, posterior lobe



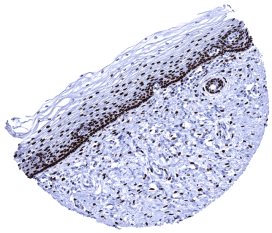
Placenta, mature



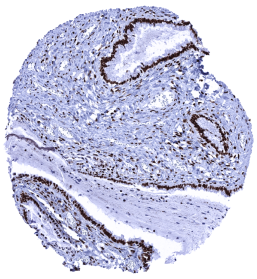
Testis



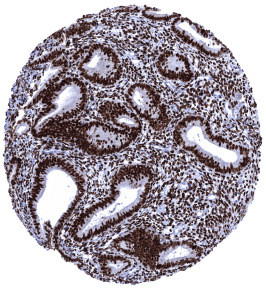
Urinary bladder, urothelium - Weak ER staining in a fraction of urothelial cells, moderate ER staining of some stromal cells



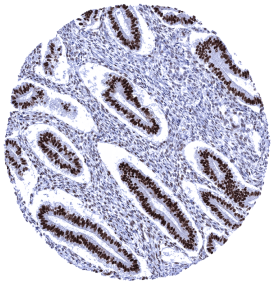
Uterus, cervix - An intense ER staining occurs in stromal cells and in the majority of squamous epithelial cells with a slight decrease of the intensity from the



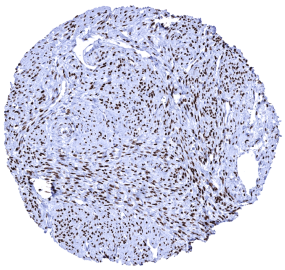
Uterus, endocervix - ER staining is intense in epithelial and stromal cells of the endocervix



Uterus, endometrium (proliferation) - ER immunostaining is at its highest level in epithelial and stromal cells of the endometrium



Uterus, endometrium (secretion) - ER immunostaining is stronger in epithelial than in stromal cells of this sample of this endometrium in secretion phase



Uterus, myometrium - Strong ER staining of the myometrium muscle cells