

Polyclonal Antibody to Estrogen receptor beta (Isoform 1) - Aff - Purified

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| Alternate names: | ER-beta, ESR2, ESTRB, NR3A2, Nuclear receptor subfamily 3 group A member 2 |
| Catalog No.: | AP09861PU-N |
| Quantity: | 0.1 mg |
| Concentration: | 0.64-0.72 mg/ml (lot specific) |
| Background: | <p>Estrogen, a steroid hormone, is a key regulator of growth and differentiation in a broad range of target tissues and, it is also implicated in breast and endometrial cancer and osteoporosis (1). Like all steroid hormones, estrogen readily diffuses across cell membrane and binds to and activates estrogen receptors (α and β) which then up-regulate the expression of many genes. These receptors belong to the superfamily of nuclear receptors, more specifically to the family of steroid receptors that act as ligand-regulated transcription factors (2). Estrogen binding receptor protein was first discovered in the early sixties, followed by cloning of this receptor in the mid-eighties. In 1996, this receptor was renamed estrogen receptor alpha (ER-alpha) due to cloning of an additional estrogen receptor from rat prostate. This novel receptor was designated estrogen receptor beta (ER-beta) (3). ER-beta is located on mouse chromosome 12 D1-D3. Recent reports have shown that ER-beta is important for the prevention of age-related hearing loss, proper cAMP signaling pathway, polyovular follicles in mouse ovaries and also important in regulating tyrosine hydroxylase expression in the mouse locus coeruleus (4). Any disruption in estrogen receptor beta signaling has been shown to cause negative effects on ovulation and fertility (4). ER-beta deficiency in mice was found to be associated with increase in small intestine tumorigenesis. ER-beta deficiency also leads to increase epithelial proliferation, decreased apoptosis, and accumulation of incompletely differentiated cells in mouse ventral prostates (5). In male mice, ER-beta deletion affected the structure of their arteries. ER-beta is expressed in kidney, spleen, testis and skeletal muscles. It is approximately a 72kDa protein (567 amino acids).</p> |
| Uniprot ID: | O08537 |
| NCBI: | NP_997590 |
| Host: | Rabbit |
| Immunogen: | Synthetic peptide corresponding to unique epitope on Estrb-1. Remarks: The Estrb-1 peptide was post-synthetically covalently modified to achieve desired antigenicity. |
| Format: | State: Liquid purified Ig fraction Purification: Affinity Chromatography on immobilized antigen Buffer System: Stabilization buffer |
| Applications: | Suitable for use in ELISA (\leq 1/10,000) and Western Blot (\geq 1/500). |

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: This antibody detects a single band of approximately 72kDa in Western blot positive control samples for Estrb-1 and several other tissues.

Species: Mouse and Rat.
Other species not tested.

Add. Information: Antigenic blocking peptide (AP09861CP-N) for Estrb-1 is also available separately.

Storage: Store the antibody undiluted (in aliquots) at -20°C.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Petterson K, Gustafsson JA. Role of estrogen receptor beta in estrogen action. *Annu Rev Physiol.* 2001; 63:165-192.
2. Beato M. Gene regulation by steroid hormones. *Cell.* 1989; 56:335-344.
3. Kuiper GG, et al. Cloning of a novel receptor expressed in rat prostate and ovary. *Proc Natl Acad Sci USA.* 1996; 93:5925-5930.
4. Pendergast JS, Tuesta LM, Bethea JR. Oestrogen receptor beta contributes to the transient sex difference in tyrosine hydroxylase expression in the mouse locus coeruleus. *J Neuroendocrinol.* 2008 Oct;20(10):1155-64. doi: 10.1111/j.1365-2826.2008.01776.x. Epub 2008 Jul 31. PubMed PMID: 18680559.
5. Deroo BJ, Rodriguez KF, Couse JF, Hamilton KJ, Collins JB, Grissom SF, et al. Estrogen receptor beta is required for optimal cAMP production in mouse granulosa cells. *Mol Endocrinol.* 2009 Jul;23(7):955-65. doi: 10.1210/me.2008-0213. Epub 2009 Mar 26. PubMed PMID: 19324971.
6. Imamov O, Morani A, Shim GJ, Omoto Y, Thulin-Andersson C, Warner M, et al. Estrogen receptor beta regulates epithelial cellular differentiation in the mouse ventral prostate. *Proc Natl Acad Sci U S A.* 2004 Jun 22;101(25):9375-80. Epub 2004 Jun 8. PubMed PMID: 15187231.

Pictures: Western Blot of Estrb-1. Estrb-1 antibody (Cat#AP09861PU-N) at 1/500 dilution.

