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Antibodies to Estrogen Receptor beta isoform 1 (Estrb-1)

Estrogen receptor beta isoform 1 antibodies. Catalog # Estrb-101AP, FITC-Estrb1, P-Estrb1 and PC-Estrb1.
Accession # NP_997590 and Alternate Nomenclature: Estrogen receptor 2 (beta); ER(b); Estrb; ERbeta; Esr2

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 α (ER α) due to cloning of an additional estrogen receptor from rat prostate. This novel receptor was designated estrogen receptor β (ER β) (3). ER β is located on mouse chromosome 12 D1-D3. Recent reports have shown that ER β 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 β signaling has been shown to cause negative effects on ovulation and fertility (4). ER β deficiency in mice was found to be associated with increase in small intestine tumorigenesis. ER β deficiency also leads to increase epithelial proliferation, decreased apoptosis, and accumulation of incompletely differentiated cells in mouse ventral prostates (5). In male mice, ER β deletion affected the structure of their arteries. ER β is expressed in kidney, spleen, testis and skeletal muscles. It is approximately a 72kDa protein (567 amino acids).

The Estrb1-selective antibodies were generated against purified Estrogen receptor beta isoform 1 protein. Estrb-antibodies are affinity purified over immobilized antigen based chromatography, and the purified immunoglobulins are stabilized in antibody stabilization buffer. FabGennix Int. Inc., will also provide limited quantities of antigenic blocking protein for Estrb-101AP antibody. Antibodies to Estrb-1 (Estrb1-101AP) will label ~72kDa protein in Western blot positive control samples for Estrb-1 and several other tissues. FabGennix Inc. will also conjugate antibodies with secondary enzymes (alk-Pase or HRP) or fluorescent probes upon request at nominal cost.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	Volume
Estrb-101 AP	Rabbit	Affinity purified Estrb-1 antibodies	M, R, others n.d	100 ug	200ul
FITC- Estrb1	Rabbit	FITC-conjugated Estrb-1 antibody	M, R, others n.d	100ug	200ul
P- Estrb1	n/a	Antigenic blocking peptide for Estrb-101AP	n/a	250 ug	100ul
PC- Estrb1	n/a	Western blotting positive control for Estrb-1	n/a	For 5 appl	Inquire

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

Immunogen: Synthetic peptides corresponding to unique epitope on Estrb-1. The Estrb-1 peptide was covalently modified post-synthetically covalently modified to achieve desired antigenicity.

Concentration: Estrb-101AP: IgG concentration 0.64-0.72 mg/ml in antibody stabilization buffer.

Applications: Antibody Estrb-101AP is ideal for WB and ELISA applications, other applications have not been tested. The species cross reactivity for these antibodies have not been examined fully. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay. WB: > 1:500; IMM & i.p pull-down assays: n.d; IHC n.d. ELISA <1:10,000. Application of this antibody in protocols not listed here does not necessarily exclude its use in such procedures.

Reactivity: This antibody detects a single band of approximately 72kDa in PC- Estrb1 samples.

Protocols: Standard protocol for various applications (WB; IMM and IHC) of this antibody is provided with the product specification sheet, however, FabGennix Inc., strongly recommends investigators to optimize conditions for use of this antibody in their laboratories.

Form/Storage: The antiserum is supplied in antibody stabilization buffer. The affinity-purified antibodies are isolated on immobilized antigen-affinity column and supplied as stabilized product. Store at -20°C for long-term storage. FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45um filter after every use for long-term storage.



Western Blot of Estrb-1. Estrb-1 antibody (cat # Estrb-101AP) at 1:500 dilution was probed with PC-Estrb1 sample. MW of Estrb-1 is approximately 72kDa.

Notes: Briefly centrifuge to collect liquid, heat or boil PC-Estrb1 tube for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher MW immunoreactive bands.

New Reagents: Now you can recycle your western blots (nitrocellulose, supported membranes and PVDF membranes) by using our StripOBuffer (Cat FGI-1989). Each stripping is guaranteed to give better signal (up to 8 stripping). No strong pungent smell of reducing agents or heating required. Block in 5X diluOBuffer and you are ready for blotting with a new antibody

References:

- Pettersson K, Gustafsson JA. Role of estrogen receptor β in estrogen action. *Annu Rev Physiol*. 2001; 63:165-192.
- Beato M. Gene regulation by steroid hormones. *Cell*. 1989; 56:335-344.
- Kuiper GG, et al. Cloning of a novel receptor expressed in rat prostate and ovary. *Proc Natl Acad Sci USA*. 1996; 93:5925-5930.
- Pendergast JS, Tuеста LM, Bethea JR. Oestrogen receptor beta continues to the transient sex difference in tyrosine hydroxylase expression in the mouse locus coeruleus. *J Neuroendocrinol*. October 2008; 20(10):1155-1164.
- Deroo BJ, et al. Estrogen receptor beta is required for optimal cAMP production in mouse granulosa cells. *Mol Endocrinol*. July 2009; 23(7):955-965.
- Imamov O, et al. Estrogen receptor beta regulates epithelial cellular differentiation in the mouse ventral prostate. *Proc Natl Acad Sci USA*. 22 June 2004; 101(25):9375-9380.

* For users who may require large amounts of Estrb-101AP, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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