ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

Estrogen Receptor β1/β2 (ERβ1/2) Antibodies

Cat. ERb14-S	Rabbit Anti-Human ER Beta Antiserum # 4	**SIZE**: 100 ul
Cat. ERb14-A	Rabbit Anti- Human ER Beta IgG # 4 (aff pure)	**SIZE**: 100 ug
Cat. ERb14-P	Human ER beta Control peptide # 4	**SIZE**: 100 ug

Estrogens, produced by ovaries and testis, affect growth and differentiation of many target tissues. These include the male and female reproductive tissues (mammary gland, uterus, ovary, and prostate). Estrogens have also been implicated in the physiology of the bone, cardiovascular tissues, and the brain. Estrogens bind to the intracellular proteins known as estrogen receptors (ER). Estrogen receptor is a member of the super family of nuclear receptor that show a similar structure and mode of action. Once bound by their ligand, ER undergoes a conformational change to a form that can specifically binds to its target genes and later their transcription.

Rat/mouse **ERβ1** gene encodes a protein of 485 aa with a calculated size of approx. 54 kDa. **ERβ1** is 477 aa in human. As compared to **ERα**, **ERβ1** is highly conserved in the DNA-binding domain (>90% homology) and the C-terminal ligand binding domain (55% homology). The A/B domain, the hinge region and the F-domain are not conserved. Rat ERβ1 is primarily expressed in prostate, ovary, lung, bladder, brain, uterus, and testis. ligand binding experiments with the recombinant ERβ1 revealed a single binding component for 17β-E2 with Kd=0.6 nM. Both ERα and ERβ1 bins to common agonists and antagonists with more or less overlapping specificity. Most recently functional variants of ERβ1, termed ERβ2, have been cloned. ERβ2 has an additional 18 aa as a results of in-frame mutation within the ligand-binding domain. ERβ2 is expressed in ovary, prostate, pituitary, brain, and muscle. Variants of both ERβ1 and ERβ2 (ERβ1δ3, ERβ2δ3) were detected that show deletion of 39 aa in the DNA-binding domain. Both ERβ1 and ERβ2 specifically bind to ER response element. ERα, β1 and ERβ2 have been found to heterodimerize with each other.

Source of Antigen and Antibodies

Antigen	20-aa peptide of **Human** ERβ; **Designated (ERB14-P or control peptide**) conjugated to KLH; epitope location ~ N-terminus
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#ERB14-S) and IgG, purified over antigen-agarose (Cat # ERB14-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied 0.05% azide, **Reconstitute** powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..
Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique). The predicted size of the ERβ receptor is approx. 54-kDa (1).

ELISA (1:100K; using 50-100 ng control peptide/well).

Histochemistry & Immunofluorescence: we recommend the use of affinity purified antibody at 2-20 ug/ml in formaldehyde fixed tissue. (see published refs using this antibody in 2).

Specificity & Cross-reactivity

The 20-aa human ERb14-P immunogenic peptide shows 84% homology with the rat ERβ1 (1-3).. The sequence is also conserved in rat ERβ2 and the variants of ERβ1/β2 (ERβ1δ3 & ERβ2δ3). It is not clear, at present, if all of these ERβ isoforms can be seen and distinguished by this antibody because of very small size differences in various ERβ isoforms. Actual crossreactivity of antibodies in all species is not established. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at the web site).

General References: Kuiper GG et al (1996) Proc Natl Acad Sci 93, 5925-5930; Tremblay, GB et al (1997) Mol. Endocrinol. 11, 353-365; Mosselman S et al (1996) FEBS Lett. 392, 49-53; Peterson DN et al (198) Endocrinology 139, 1082;

(2) Citations of ADI's Antibodies (see web site for updated list)

K et al, 2001 Mol. Hum. Reprod. 2001 7: 137-145.
Javeshghani D 2003 Hypertension, Jul 2003 in press WB

*This product is for in vitro research use only.

ERB14-S-A-P 71217A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, S an Antonio, T X 7 8 24 4 , U S A;

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400 Fax: +91-11-42208444 Email: customerservice@lifetechindia.com Website: www.lifetechindia.com