Estrogen Receptor beta Antibody

Product Specific Information

PA1-310B detects estrogen receptor (ER) beta from human, mouse, and rat tissues.

PA1-310B has been successfully used in Western blot, immunohistochemistry, immunofluorescence, and immunocytochemistry procedures. By Western blot, this antibody detects an ~55 kDa protein representing ER beta from rat brain homogenate. Immunocytochemical staining of ER beta in cells overexpressing the human protein results in nuclear staining.

The PA1-310B immunogen is a synthetic peptide corresponding to residues C(467) S S T E D S K N K E S S Q N L Q S Q(485) of rat ER beta. This immunizing peptide (PEP-007) is available for use in neutralization and control experiments.

Recombinant ER beta expressed in baculovirus system (Cat. # RP-311 and RP-312) can be purchased for control experiments in Western blot and gel shift assays.

General Information

The human ER-beta is a newly discovered estrogen receptor initially cloned and characterized from testis. The size and structure of ER-beta is very similar to ER-alpha with the ligand and DNA binding domains being highly conserved, while the amino terminus which serves as their transactivation domain has diverged significantly. Similar in function to ER-alpha ER-beta binds to estrogen with a high affinity and regulates estrogen specific gene activation through direct interaction with estrogen response elements (EREs).

Form Information

Form: Liquid
Concentration: 1mg/ml
Purification: Antigen affinity chromatography
Storage Buffer: PBS with 1mg/ml BSA
Preservative: 0.05% sodium azide
Storage Conditions: -20° C, Avoid Freeze/Thaw Cycles

This product is for In Vitro experimental use only. Not for resale without express authorization.

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Immunofluorescence analysis using ER-beta polyclonal antibody (Product# PA1-310B) shows nuclear localization of ER-beta in MCF7 cells. Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature. Cells were blocked with 1% Blocker BSA (Product # 37525) for 15 minutes at room temperature. Cells were probed with a rabbit polyclonal antibody recognizing ER-beta (Product# PA1-310B), at a dilution of 1:100 for 1 hour at room temperature. Cells were washed with PBS and incubated with DyLight 488 goat-anti-rabbit IgG secondary antibody (Product # 35503) at a dilution of 1:400 for 30 minutes at room temperature. Nuclei (blue) were stained with Hoechst 33342 dye (Product # 62249). Images were taken on a Thermo Scientific ArrayScan at 20X magnification.
26 Western Blot References

<table>
<thead>
<tr>
<th>Species / Dilution</th>
<th>Summary</th>
</tr>
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<tbody>
<tr>
<td><strong>Hu / 0</strong></td>
<td>PA1-310B was used in western blot to identify and characterize a novel estrogen receptor beta cDNA isoform.</td>
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<tr>
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<td>&quot;Cloning of the novel isoform of the estrogen receptor beta cDNA (ERbeta isoform M cDNA) from the human testicular cDNA library.&quot;</td>
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<tr>
<td></td>
<td>Author(s): Shoda T, Hirata S, Kato J, Hoshi K</td>
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<td>Author(s): Kirby M, Zarsnovsky A, Belcher SM</td>
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<td></td>
<td>Author(s): Kawano N, Koji T, Hishikawa Y, Murase K, Murata I, Kohno S</td>
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Ms / 0.25 ug/ml

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"ERbeta protein expression in female cynomologus monkey and CF-1 mouse brain: Western analysis."
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PA1-310B was used in immunohistochemistry and western blot to investigate the expression of estrogen receptor alpha and beta in the central auditory pathway in prepubertal and aged mice

"Expression patterns of estrogen receptors in the central auditory system change in prepubertal and aged mice."
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Number of Citations: 1

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Number of Citations: 1

Ov / Not Cited

PA1-310B was used in western blot to determine whether ERbeta is localized to the endothelial cell plasma membrane

"ERbeta has nongenomic action in caveolae."
Author(s): Chambliss KL, Yuhanna IS, Anderson RG, Mendelsohn ME, Shaul PW
Number of Citations: 31

Po / 1:500

PA1-310B was used in immunohistochemistry, western blot, and western blot to investigate the expression of estrogen receptor alpha and beta in porcine skeletal muscles

"Evidence for estrogen receptor alpha and beta expression in skeletal muscle of pigs."
Author(s): Kalbe C, Mau M, Wollenhaupt K, Rehfeldt C
Number of Citations: 1

Po / 1:500

PA1-310B was used in western blot to investigate the effect of isoflavones genistin and daidzein on skeletal muscle cell differentiation and protein metabolism

"Dose-dependent effects of genistin and daidzein on protein metabolism in porcine myotube cultures."
Author(s): Rehfeldt C, Kalbe C, Nümbrecht G, Mau M
Number of Citations: 1

Rt / Not Cited

PA1-310B was used in western blot to investigate the effect of osteoblast differentiation on androgen and estrogen receptor-alpha and -beta expression

"Osteoblast differentiation influences androgen and estrogen receptor-alpha and -beta expression."
Author(s): Wiren KM, Chapman Evans A, Zhang XW
Number of Citations: 6

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PA1-310B was used in immunohistochemistry and western blot to study the expression of ERbeta in rat septal or basilar artery lysates, ovarian or uterine homogenate

"Epitope-dependent localization of estrogen receptor-alpha, but not -beta, in en face arterial endothelium."  
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Number of Citations: 1  

PA1-310B was used in immunocytochemistry and western blot to investigate the protective effect of 17beta-estradiol on oligodendrocytes

"17beta-estradiol protects oligodendrocytes from cytotoxicity induced cell death."  
Author(s): Takao T, Flint N, Lee L, Ying X, Merrill J, Chandross KJ  
Number of Citations: 1  

PA1-310B was used in western blot and western blot to investigate the level and regulation of estrogen receptor expression in a primitive neuroectodermal tumor cell line

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Author(s): Kirby M, Zsarnovszky A, Belcher SM  
Number of Citations: 1  

PA1-310B was used in western blot to investigate the suppression of uterine estrogen receptor alpha caused by constant or pulsed estrogen replacement.

"Brain infusion of lipopolysaccharide increases uterine growth as a function of estrogen replacement regimen: suppression of uterine estrogen receptor-alpha by constant, but not pulsed, estrogen replacement."  
Number of Citations: 1  

PA1-310B was used in immunocytochemistry and western blot to investigate the effect of estrogen on cellular distribution of estrogen receptors alpha and beta

"Estrogen induces rapid translocation of estrogen receptor beta, but not estrogen receptor alpha, to the neuronal plasma membrane."  
Author(s): Sheldahl LC, Shapiro RA, Bryant DN, Koemer IP, Dorsa DM  
Number of Citations: 17  

PA1-310B was used in immunohistochemistry and western blot to investigate the influence of status epilepticus on strogen receptor alpha and beta expression in astrocytes of hippocampus

"Expression of estrogen receptor alpha and beta in reactive astrocytes at the male rat hippocampus after status epilepticus."  
Author(s): Sakuma S, Tokuhara D, Hattori H, Matsuoka O, Yamano T  
Number of Citations: 1  

PA1-310B was used in western blot to study the effect of long-term ovarian hormone deprivation on neuronal response to oestradiol administration

"The ability of oestradiol administration to regulate protein levels of oestrogen receptor alpha in the hippocampus and prefrontal cortex of middle-aged rats is altered following long-term ovarian hormone deprivation."  
Author(s): Bohacek J, Daniel JM  
Number of Citations: 1  

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PA1-310B was used in western blot to investigate the effect of dietary fat on estrogen receptor expression

"Altered estrogen receptor expression in skeletal muscle and adipose tissue of female rats fed a high-fat diet."
Author(s): Gorres BK, Bomhoff GL, Gupte AA, Geiger PC
Number of Citations: 1

PA1-310B was used in western blot to investigate the effect of estrogen receptor stimulation on glucose transport in skeletal muscles

J Physiol. 2011 Apr 15;589(Pt 8):2041-54.
"In vivo stimulation of oestrogen receptor ? increases insulin-stimulated skeletal muscle glucose uptake."
Author(s): Gorres BK, Bomhoff GL, Morris JK, Geiger PC
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PA1-310B was used in western blot to investigate the effect of estrogen receptors on mitochondrial function in neurons

"Selective oestrogen receptor modulators differentially potentiate brain mitochondrial function."
Author(s): Irwin RW, Yao J, To J, Hamilton RT, Cadenas E, Brinton RD
Number of Citations: 1

Species / Dilution Summary

Hu / 0 PA1-310B was used in immunocytochemistry and western blot to investigate the distribution of estrogen receptor alpha and beta in human lens epithelial cells
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Number of Citations: 1  

Ms / Not Cited PA1-310B was used in immunocytochemistry to study the role of the ERbeta during the ovulation
"Generation and reproductive phenotypes of mice lacking estrogen receptor beta."  
Number of Citations: 122  

Ms / 1:250 PA1-310B was used in immunocytochemistry to study the expression of estrogen receptor beta in locus coeruleus-derivedcentral-adrenergic-tyrosine-hydroxylase-expressing cells
"Expression of functional estrogen receptor beta in locus coeruleus-derived Cath.a cells."  
Author(s): Rincavage HL, McDonnell DP, Kuhn CM  
Number of Citations: 1  

Ms / Not Cited PA1-310B was used in immunocytochemistry to investigate whether E2 is able to modify the response of GnRH-producing GT1-7 cells to norepinephrine (NE) stimulation
"Estrogen inhibition of norepinephrine responsiveness is initiated at the plasma membrane of GnRH-producing GT1-7 cells."  
Author(s): Morales A, Gonzalez M, Marin R, Diaz M, Alonso R  
Number of Citations: 1  
PA1-310B was used in immunocytochemistry, immunohistochemistry, and western blot to evaluate the specificity of estrogen receptor beta antibodies in transgenic mice.

"Multiple ERBeta antisera label in ERbeta knockout and null mouse tissues."
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PA1-310B was used in immunocytochemistry to investigate the expression and subcellular localization of estrogen receptor beta in the rat hippocampus.

"Non-nuclear estrogen receptor beta and alpha in the hippocampus of male and female rats."
Author(s): Kalita K, Szymczak S, Kaczmarek L
Number of Citations: 1

PA1-310B was used in immunocytochemistry to investigate the effect of E2 on the renovascularature in renal injury.

Kidney Int. 2006 Nov;70(10):1759-68.
"Estradiol increases proteinuria and angiotensin II type 1 receptor in kidneys of rats receiving L-NAME and angiotensin II."
Author(s): Oestreicher EM, Guo C, Seely EW, Kikuchi T, Martinez-Vasquez D, Jonasson L, Yao T, Burr D, Mayoral S, Roubanshiusik W, Ricchiuti V, Adler GK
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PA1-310b was used in immunohistochemistry to study the role of estrogen receptor signaling in medulloblastoma development and migration.

"Blockade of estrogen receptor signaling inhibits growth and migration of medulloblastoma."
Author(s): Belcher SM, Ma X, Le HH
Number of Citations: 1

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PA1-310B was used in immunohistochemistry to study the effect of early exposure to the endocrine disruptor methoxychlor on epigenetic integrity in adult ovarian genes.


"Fetal and neonatal exposure to the endocrine disruptor methoxychlor causes epigenetic alterations in adult ovarian genes."

Author(s): Zama AM, Uzumcu M

Number of Citations: 1


PA1-310B was used in immunohistochemistry to investigate the role of prolactin in the prostate hyperplasia.


"Prostate hyperplasia in a transgenic mouse with prostate-specific expression of prolactin."

Author(s): Kindblom J, Dillner K, Sahlin L, Robertson F, Ormandy C, Törnell J, Wennbo H

Number of Citations: 3


PA1-310B was used in immunohistochemistry and western blot to investigate the distribution of estrogen receptor alpha- and beta in mouse intestine and the effect of estrogen


"Identification and localization of estrogen receptor alpha- and beta-positive cells in adult male and female mouse intestine at various estrogen levels."

Author(s): Kawano N, Koji T, Hishikawa Y, Murase K, Murata I, Kohno S

Number of Citations: 1


PA1-310B was used in immunohistochemistry and western blot to study the expression of estrogen receptor isoforms and androgen receptors in different cells and species


"Localization of estrogen and androgen receptors in male reproductive tissues of mice and rats."

Author(s): N/A

Number of Citations: 1


PA1-310B was used in immunohistochemistry to demonstrate the mechanisms of heat-induced antigen retrieval


Author(s): Yamashita S, Okada Y

Number of Citations: 1


PA1-310B was used in immunohistochemistry to investigate the application of heat-induced antigen retrieval to aldehyde-fixed fresh frozen sections


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PA1-310B was used in immunohistochemistry to investigate the role of estrogen receptor beta during the inhibition of Apc-dependent colon tumorigenesis.

Cancer Res. 2007 Mar 1;67(5):2366-72.

"Estrogen receptors alpha and beta are inhibitory modifiers of Apc-dependent tumorigenesis in the proximal colon of Min/+ mice."

Author(s): Cho NL, Javid SH, Carothers AM, Redston M, Bertagnolli MM

Number of Citations: 1


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"Expression patterns of estrogen receptors in the central auditory system change in prepubertal and aged mice."

Author(s): Charitidi K, Frisina RD, Vasilyeva ON, Zhu X, Canlon B
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"Oestrogen receptor beta-immunoreactive neurones in the ovine hypothalamus: distribution and colocalisation with gonadotropin-releasing hormone."

Author(s): Skinner DC, Dufourny L
Number of Citations: 1

PA1-310B was used in immunohistochemistry, western blot, and western blot to investigate the expression of estrogen receptor alpha and beta in porcine skeletal muscles

"Localization of estrogen receptor beta-immunoreactivity in astrocytes of the adult rat brain."

Author(s): Azcoitia I, Sierra A, Garcia-Segura LM
Number of Citations: 20

PA1-310B was used in immunohistochemistry to determine the estrogen receptor beta protein expression in the rat cerebellum

"Expression of estrogen receptor-beta protein and mRNA in the cerebellum of the rat."

Author(s): Price RH Jr, Handa RJ
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PA1-310B was used in immunohistochemistry and western blot to study the expression of ERbeta in rat septal or basilar artery lysates, ovarian or uterine homogenate

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Author(s): Dan P, Cheung JC, Scriven DR, Moore ED
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PA1-310B was used in immunohistochemistry to investigate the effect of sex hormones receptors on bone development in neonatal mice

"Sex hormones receptors play a crucial role in the control of femoral and mandibular growth in newborn mice."

Author(s): Márquez Hernández RA, Ohtani J, Fujita T, Sunagawa H, Kawata T, Kaku M, Motokawa M, Tanne K
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Author(s): Dan P, Cheung JC, Scriven DR, Moore ED
Number of Citations: 1
PA1-310B was used in immunohistochemistry to investigate the effect of SERM treatment on the rat uterus.

"Effects of SERM (selective estrogen receptor modulator) treatment on growth and proliferation in the rat uterus."

Author(s): Stygar D, Muravitskaya N, Erikkson B, Erikkson H, Sahlin L


PA1-310B was used in immunohistochemistry to study the effect of estrogen and antiestrogens on the expression of estrogen receptor alpha and beta in the hearing organs.

"Effect of estrogen and antiestrogens on the estrogen receptor content in the cochlea of ovariectomized rats."

Author(s): Stenberg AE, Simonoska R, Stygar D, Sahlin L, Hultcrantz M

Number of Citations: 2

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Author(s): N/A

Number of Citations: 1

PA1-310B was used in immunohistochemistry to study the possible correlation between the immunohistochemical expression of ER isoforms in the gonadotrope in ovariectomized rats treated with oestradiol benzoate (EB), TX or raloxifene (RX) and LH secret.

"Gonadotrope oestrogen receptor-alpha and -beta and progesterone receptor immunoreactivity after ovarectomy and exposure to oestradiol benzoate, tamoxifen or raloxifene in the rat: correlation with LH secretion."

Author(s): Sánchez-Criado JE, de Las Mulas JM, Bellido C, Aguilar R, Garrido-Gracia JC

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Author(s): Sakuma S, Tokuhara D, Hattori H, Matsuoka O, Yamano T

Number of Citations: 1

PA1-310B was used in immunohistochemistry to demonstrate the effect of methoxychlor on reproductive development like folliculogenesis.

"Developmental methoxychlor exposure affects multiple reproductive parameters and ovarian folliculogenesis and gene expression in adult rats."

Author(s): Armenti AE, Zama AM, Passantino L, Uzumcu M

Number of Citations: 1

PA1-310B was used in immunohistochemistry to investigate the role of aromatized estrogen in baculum development.

"Distribution of aromatase and sex steroid receptors in the baculum during the rat life cycle: effects of estrogen during the early development of the baculum."

Author(s): Yonezawa T, Higashi M, Yoshioka K, Mutoh K

Number of Citations: 1

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PA1-310B was used in immunohistochemistry to investigate the expression of cyclin D1/cdk4 and estrogen receptors in rat gastric carcinogenesis

Author(s): Motohashi M, Wakui S, Muto T, Suzuki Y, Shirai M, Takahashi H, Hano H
Number of Citations: 0

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“Distribution and localization patterns of estrogen receptor-beta and insulin-like growth factor-1 receptors in neurons and glial cells of the female rat substantia nigra: localization of ERbeta and IGF-1R in substantia nigra.”
Author(s): Quesada A, Romeo HE, Micevych P
Number of Citations: 1