10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

ESRRB Antibody

Catalog # ASC11474

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	O95718
Other Accession	NP_004443, 238550159
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	48054
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ESRRB antibody can be used for detection of ESRRB by Western blot at 1 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 5 g/mL.

Additional Information

Gene ID	2103
Other Names	Steroid hormone receptor ERR2, ERR beta-2, Estrogen receptor-like 2, Estrogen-related receptor beta, ERR-beta, Nuclear receptor subfamily 3 group B member 2, ESRRB, ERRB2, ESRL2, NR3B2
Target/Specificity	ESRRB;
Reconstitution & Storage	ESRRB antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	ESRRB Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ESRRB (HGNC:3473)
Synonyms	ERRB2, ESRL2, NR3B2
Function	[Isoform 3]: Transcription factor that binds a canonical ESRRB recognition (ERRE) sequence 5'TCAAGGTCA-3' localized on promoter and enhancer of targets genes regulating their expression or their transcription activity (PubMed:17920186, PubMed:19755138). Plays a role, in a LIF-independent manner, in maintainance of self-renewal and pluripotency of embryonic and trophoblast stem cells through different signaling pathways including FGF

	signaling pathway and Wnt signaling pathways. Involved in morula development (2-16 cells embryos) by acting as a regulator at the 8-cell stage (By similarity). Upon FGF signaling pathway activation, interacts with KDM1A by directly binding to enhancer site of ELF5 and EOMES and activating their transcription leading to self-renewal of trophoblast stem cells. Also regulates expression of multiple rod-specific genes and is required for survival of this cell type (By similarity). Plays a role as transcription factor activator of GATA6, NR0B1, POU5F1 and PERM1 (PubMed:23836911). Plays a role as transcription factor repressor of NFE2L2 transcriptional activity and ESR1 transcriptional activity (PubMed:17920186, PubMed:19755138). During mitosis remains bound to a subset of interphase target genes, including pluripotency regulators, through the canonical ESRRB recognition (ERRE) sequence, leading to their transcriptional activation in early G1 phase. Can coassemble on structured DNA elements with other transcription factors like SOX2, POU5F1, KDM1A and NCOA3 to trigger ESRRB-dependent gene activation. This mechanism, in the case of SOX2 corecruitment prevents the embryonic stem cells (ESCs) to epiblast stem cells (EpiSC) transition through positive regulation of NR0B1 that inhibits the EpiSC transcriptional program. Also plays a role inner ear development by controlling expression of ion channels and transporters and in early placentation (By similarity).
Cellular Location	Nucleus. Cytoplasm {ECO:0000250|UniProtKB:Q61539}. Chromosome {ECO:0000250|UniProtKB:Q61539}

Background

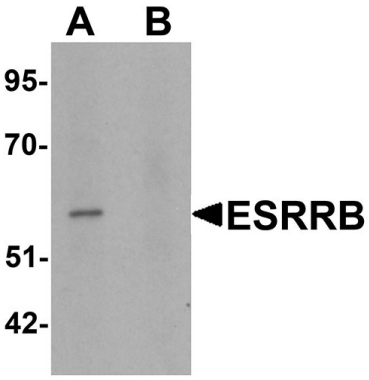
ESRRB Antibody: The estrogen-related receptor beta (ESRRB) was initially identified in mouse embryonic carcinoma stem cells and was found to be expressed exclusively in trophoblast progenitor cells between days 6.5 and 7.5 post coitum. Recent studies have shown that ESRRB is part of an POU5F1/Oct4-centered protein interaction network in embryonic stem (ES) cells. It is thought to interact with other ES transcription factors such as NANOG within this network, activating POU5F1 transcription and thereby sustaining self-renewal and pluripotency in ES cells.

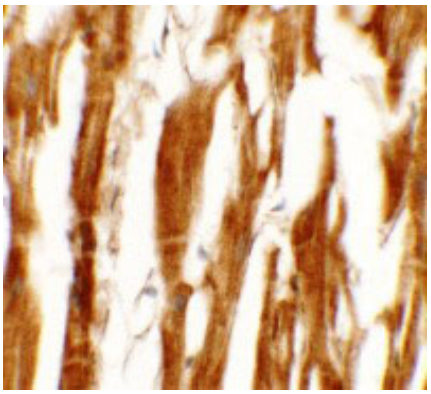
References

Pettersson K, Svensson K, Mattsson R, et al. Expression of a novel member of estrogen response element-binding nuclear receptors is restricted to the early stages of chorion formation during mouse embryogenesis. Mech. Dev. 1996; 54:211-23.
van den Berg DL, Snoek T, Mullin NP, et al. An Oct4-centered protein interaction network in embryonic stem cells. Cell Stem Cell 2010; 6:369-81.
Zhang X, Zhang J, Wang T, et al. Esrrb activates Oct4 transcription and sustains self-renewal and pluripotency in embryonic stem cells. J. Biol. Chem. 2008; 283:35825-33.

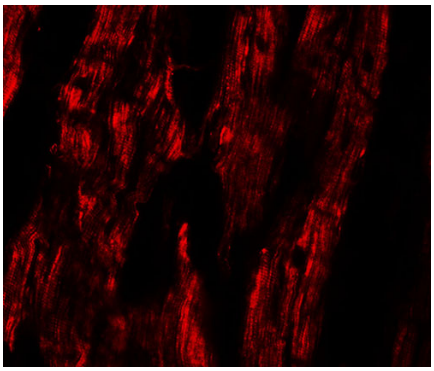
Images

Western blot analysis of ESRRB in human heart tissue lysate with ESRRB antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.





Immunohistochemistry of ESRR8 in human heart tissue with ESRR8 antibody at 5 µg/mL.



Immunofluorescence of ESRRB in human heart tissue with ESRRB antibody at 20 µg/mL.