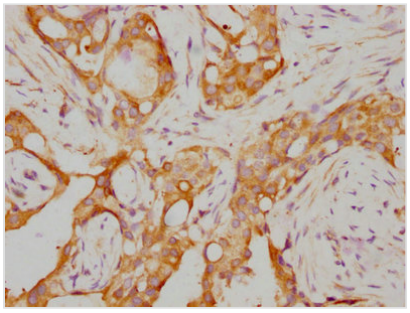
RARA Recombinant Monoclonal Antibody

Product Code	CSB-RA019338A0HU
Abbreviation	Retinoic acid receptor alpha
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P10276
Immunogen	A synthesized peptide derived from human RARA
Species Reactivity	Human
Tested Applications	ELISA, IHC; Recommended dilution: IHC:1:50-1:200
Relevance	Receptor for retinoic acid. Retinoic acid receptors bind as heterodimers to their target response elements in response to their ligands, all-trans or 9-cis retinoic acid, and regulate gene expression in various biological processes. The RXR/RAR heterodimers bind to the retinoic acid response elements (RARE) composed of tandem 5'-AGGTCA-3' sites known as DR1-DR5. In the absence of ligand, the RXR-RAR heterodimers associate with a multiprotein complex containing transcription corepressors that induce histone acetylation, chromatin condensation and transcriptional suppression. On ligand binding, the corepressors dissociate from the receptors and associate with the coactivators leading to transcriptional activation. RARA plays an essential role in the regulation of retinoic acid-induced germ cell development during spermatogenesis. Has a role in the survival of early spermatocytes at the beginning prophase of meiosis. In Sertoli cells, may promote the survival and development of early meiotic prophase spermatocytes. In concert with RARG, required for skeletal growth, matrix homeostasis and growth plate function (By similarity).
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Alias	Retinoic acid receptor alpha, RAR-alpha, Nuclear receptor subfamily 1 group B member 1, RARA, NR1B1
Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling
Gene Names	RARA
Clone No.	4A10
Image	



IHC image of CSB-RA019338A0HU diluted at 1:155 and staining in paraffin-embedded human breast cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.

Description

The production of the RARA recombinant monoclonal antibody involves the utilization of DNA recombinant technology and in vitro genetic manipulation. Initially, an animal is immunized with a synthesized peptide derived from human RARA, enabling the isolation of B cells. The subsequent step involves screening and selecting positive B cells, followed by the identification of a single clone. PCR amplification of the light and heavy chains of the RARA antibody is carried out, and the resulting genes are inserted into a plasmid vector. This recombinant vector is then introduced into a host cell line to facilitate the expression of the antibody. The RARA recombinant monoclonal antibody is purified from the cell culture supernatant using affinity chromatography. This antibody exhibits a specific binding affinity for human RARA protein and can be effectively employed in ELISA and IHC applications.

The RARA protein binds to RA, which causes a conformational change of RARA, causing the dissociation of the corepressor complex and the recruitment of a coactivator complex, leading to the activation of transcription of target genes. RARA is involved in various biological processes, including embryonic development, differentiation, and homeostasis in adult tissues. It plays a critical role in the development of several tissues, including the central nervous system, the heart, and the hematopoietic system. RARA also participates in the pathogenesis of certain cancers, including acute promyelocytic leukemia (APL), where it is fused to a partner protein resulting in aberrant activation of its transcriptional activity.