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

Anti-AHR Picoband Antibody

Catalog # ABO12109

Product Information

Application	WB
Primary Accession	P30561
Host	Rabbit
Reactivity	Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Aryl hydrocarbon receptor(AHR) detection. Tested with WB in Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	11622
Other Names	Aryl hydrocarbon receptor, Ah receptor, AhR, Ahr
Calculated MW	95017
Application Details	Western blot, 0.1-0.5 □g/ml, Mouse, Rat
Subcellular Localization	Cytoplasm. Nucleus. Initially cytoplasmic; upon binding with ligand and interaction with a HSP90, it translocates to the nucleus.
Tissue Specificity	Expressed in all tissues tested including brain, heart, kidney, liver, lung, muscle, ovary, skin, spleen and thymus. .
Source	Eukaryota
Protein Name	Aryl hydrocarbon receptor
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of mouse AHR (525-552aa DNKNNDLYNIMRNLGIDFEDIRSMQNEE), different from the related human sequence by five amino acids, and from the related rat sequence by one amino acid.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also

	be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Contains 1 bHLH (basic helix-loop-helix) domain.

Protein Information

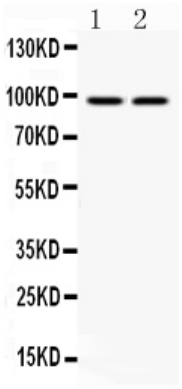
Name	Ahr
Function	Ligand-activated transcription factor that enables cells to adapt to changing conditions by sensing compounds from the environment, diet, microbiome and cellular metabolism, and which plays important roles in development, immunity and cancer (PubMed:10639156, PubMed:10973493, PubMed:1314586, PubMed:33436590, PubMed:7961644, PubMed:7969080, PubMed:8806883, PubMed:9427285). Upon ligand binding, translocates into the nucleus, where it heterodimerizes with ARNT and induces transcription by binding to xenobiotic response elements (XRE) (By similarity). Regulates a variety of biological processes, including angiogenesis, hematopoiesis, drug and lipid metabolism, cell motility and immune modulation (PubMed:20106950, PubMed:28396409). Xenobiotics can act as ligands: upon xenobiotic-binding, activates the expression of multiple phase I and II xenobiotic chemical metabolizing enzyme genes (such as the CYP1A1 gene) (PubMed:10639156, PubMed:10973493, PubMed:1314586, PubMed:7961644, PubMed:7969080, PubMed:8806883, PubMed:9427285). Mediates biochemical and toxic effects of halogenated aromatic hydrocarbons (By similarity). Next to xenobiotics, natural ligands derived from plants, microbiota, and endogenous metabolism are potent AHR agonists (By similarity). Tryptophan (Trp) derivatives constitute an important class of endogenous AHR ligands (By similarity). Acts as a negative regulator of anti-tumor immunity: indoles and kynurenic acid generated by Trp catabolism act as ligand and activate AHR, thereby promoting AHR-driven cancer cell motility and suppressing adaptive immunity (By similarity). Regulates the circadian clock by inhibiting the basal and circadian expression of the core circadian component PER1 (By similarity). Inhibits PER1 by repressing the CLOCK-BMAL1 heterodimer mediated transcriptional activation of PER1 (PubMed:20106950).The heterodimer ARNT:AHR binds to the dioxin response element (DRE) of target gene promoters and activates their transcription (PubMed:28396409).
Cellular Location	Cytoplasm. Nucleus Note=Initially cytoplasmic; upon binding with ligand and interaction with a HSP90, it translocates to the nucleus
Tissue Location	Expressed in all tissues tested including brain, heart, kidney, liver, lung, muscle, ovary, skin, spleen and thymus

Background

AHR (aryl hydrocarbon receptor), also called bHLHe76, is a member of the family of basic helix-loop-helix transcription factors. AhR is a cytosolic transcription factor that is normally inactive, bound to several co-chaperones. The AHR gene is mapped on 7p21.1. Estrogenic actions of AHR agonists were detected in wildtype ovariectomized mouse uteri, but were absent in Ahr -/- or Er-alpha -/- ovariectomized mice. Complex assembly and ubiquitin ligase activity of CUL4B (AHR) in vitro and in vivo are dependent on the AHR ligand. In the CUL4B (AHR) complex, ligand-activated AHR acts as a substrate-specific adaptor component that targets sex steroid receptors for degradation. Cd4-positive cells from mice lacking Ahr developed Th17 responses but failed to produce Il22 and did not show enhanced Th17 development. Activation of Ahr during induction of EAE accelerated disease onset and increased pathology in wildtype mice, but not in Ahr -/- mice. The TDO-AHR pathway is active in human brain tumors and is associated with malignant progression and poor survival. Ahr activity within ROR-gamma-t-positive ILC could be induced by dietary

ligands such as those contained in vegetables of the family Brassicaceae.

Images



Anti- AHR Picoband antibody, ABO12109, Western blottingAll lanes: Anti AHR (ABO12109) at 0.5ug/mlLane 1: Rat Brain Tissue Lysate at 50ugLane 2: Mouse Liver Tissue Lysate at 50ugPredicted bind size: 96KDObserved bind size: 96KD