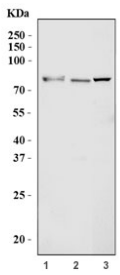
AHRR Antibody / Aryl Hydrocarbon Receptor Repressor (RQ6598)

Catalog No.	Formulation	Size
RQ6598	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	A9YTQ3
Applications	Western Blot : 1-2ug/ml Direct ELISA : 0.1-0.5ug/ml
Limitations	This AHRR antibody is available for research use only.



Western blot testing of 1) human HeLa, 2) ThP-1 and 3) mouse lung tissue lysate with AHRR antibody. Predicted molecular weight: 76-78 kDa.

Description

AHRR antibody targets Aryl hydrocarbon receptor repressor, encoded by the AHRR gene. Aryl hydrocarbon receptor repressor is a transcriptional regulatory protein that localizes primarily to the nucleus, with additional cytoplasmic distribution depending on cellular state. It is a member of the basic helix-loop-helix PAS family and functions as an inducible suppressor of aryl hydrocarbon receptor mediated gene expression.

Aryl hydrocarbon receptor repressor is best known for its role in negative feedback control of AHR signaling. Following

activation of the aryl hydrocarbon receptor by endogenous ligands or environmental compounds, AHRR expression is transcriptionally upregulated. The resulting protein then competes with AHR for binding to shared cofactors and regulatory elements, effectively dampening continued pathway activation. An AHRR antibody supports research focused on transcriptional feedback loops and environmentally responsive signaling systems.

AHRR expression is observed in a variety of tissues, including immune cell populations and epithelial compartments, where AHR signaling plays important regulatory roles. Rather than acting as a constitutive transcription factor, Aryl hydrocarbon receptor repressor functions as a context dependent modulator whose expression reflects prior pathway stimulation. Its inducible nature distinguishes it from core transcription machinery and underscores its role in fine tuning cellular responses.

In disease related studies, altered regulation of Aryl hydrocarbon receptor repressor has been linked to cancer biology, immune imbalance, and exposure related pathologies. Reduced AHRR expression or epigenetic repression can weaken feedback inhibition, allowing prolonged AHR driven transcription that may influence proliferation, differentiation, and inflammatory signaling. These observations position AHRR as an important checkpoint in transcriptional programs responsive to environmental and metabolic cues.

Structurally, Aryl hydrocarbon receptor repressor contains conserved PAS domains that facilitate protein-protein interactions required for transcriptional repression. Its regulatory activity can be influenced by cellular context and post-translational mechanisms that affect functional behavior in experimental systems without altering the underlying amino acid sequence. AHRR antibody reagents enable investigation of transcriptional repression and AHR pathway regulation, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the AHRR antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids L108-D180) was used as the immunogen for the AHRR antibody.

Storage

After reconstitution, the AHRR antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.