AHR siRNA – Aryl Hydrocarbon Receptor (Human)

PRODUCT OVERVIEW

Product Name	AHR, siRNA
Full Product Name	AHR siRNA (Human)
Product Gene Name	AHR sirna
Product Synonym Names	BHLHE76; Aryl hydrocarbon receptor; Ah receptor; AhR; Class E basic helix-loop-helix protein 76; bHLHe76
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	AHR siRNA (Human) is a target-specific 19-23 nt siRNA oligo duplexes designed to knock down gene expression.
Preparation and Storage	Shipped at 4 degree C. Store at -20 degree C for one year.
Molecular Weight	96,147 Da
OMIM	600253
3D Structure	ModBase 3D Structure for P35869
Negative Control	siRNA Negative Control (Catalog# MBS8241404) is a non-targeting 21 nt siRNA recommended as a negative control for experiments using targeted siRNA transfection.
Quality Control	Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.
Directions for Use	We recommends transfection with 100 nM siRNA 48 to 72 hours prior to cell lysis. Before resuspending, briefly centrifuge the tube to ensure the lyophilized siRNA is at the bottom of the tube. Resuspend the siRNA oligos to an appropriate concentration with DEPC water. For each vial, suitable for 250 transfections in 24 well plate (20 pmol for each well).
Components	We offer pre-designed sets of 3 different target-specific siRNA oligo duplexes of human AHR gene. Each vial contains 5 nmol of lyophilized siRNA. The duplexes can be transfected individually or pooled together to achieve knockdown of the target gene, which is most commonly assessed by qPCR or western blot. Our siRNA oligos are also chemically modified (2'-OMe) at no extra charge for increased stability and enhanced knockdown in vitro and in vivo.
Applications Tested/Suitable for AHR sirna	RNA Interference (RNAi)
Related Product Information for AHR sirna	MBS8204599 is an siRNA targeting AHR. Also known as AHR siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit AHR expression using RNA interference
Other Notes	Small volumes of AHR sirna vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for AHR. It may not necessarily be applicable to this product.

NCBI GI #	4502003
NCBI GeneID	196
NCBI Accession #	NP_001612.1
UniProt Primary Accession #	P35869
UniProt Secondary Accession #	Q13728; Q13803; Q13804; A4D130
UniProt Related Accession #	P35869
GenBank Nucleotide #	NM_001621.4
NCBI Official Full Name	aryl hydrocarbon receptor
NCBI Official Synonym Full Names	aryl hydrocarbon receptor
NCBI Official Symbol	AHR
NCBI Official Synonym Symbols	bHLHe76
UniProt Protein Name	Aryl hydrocarbon receptor
UniProt Synonym Protein Names	Class E basic helix-loop-helix protein 76; bHLHe76
Protein Family	Aldehyde reductase
UniProt Gene Name	AHR
UniProt Synonym Gene Names	BHLHE76; Ah receptor; AhR; bHLHe76
UniProt Entry Name	AHR_HUMAN
NCBI Protein Information	aryl hydrocarbon receptor
NCBI Summary for AHR	This gene encodes a ligand-activated transcription factor involved in the regulation of biological responses to planar aromatic hydrocarbons. This receptor has been shown to regulate xenobiotic-metabolizing enzymes such as cytochrome P450. Its ligands included a variety of aromatic hydrocarbons. [provided by RefSeq, Jul 2008]

UniProt Comments for AHR	AHR: a nuclear receptor for aryl hydrocarbons involved in xenobiotic metabolism, cell cycle regulation, and development in response to both endogenous and environmental signals. AhR was initially identified as a receptor for dioxins, which are environmental pollutants generated by waste incineration and other industrial processes . AhR ligands include polycyclic aromatic hydrocarbons, including the carcinogen benzo(a)pyrene and other components of cigarette smoke. Naturally occurring AhR ligands include flavonoids, which are aromatic plant secondary compounds commonly found in vegetables and fruits. Cytoplasmic aryl hydrocarbon receptors are found in protein complexes with heat shock proteins. Upon ligand binding, AhR dissociates from heat shock proteins and translocate to the nucleus where it dimerizes with AhR nuclear translocator (ARNT, HIF-1b). The AhR/ARNT heterodimer binds to nuclear xenobiotic response elements to control the expression of genes associated with xenobiotic metabolism, including several cytochrome P450 genes. AhR is ubiquitously expressed and is thought to play a role in regulation of cell proliferation and differentiation, cytokine expression, and xenobiotic metabolism. Research studies link AhR activity with the control of regulatory T-cell and T-helper 17 cell differentiation, regulation of the inflammatory response, and the onset of lung cancer. Protein type: DNA-binding; Nuclear receptor; Transcription factor Chromosomal Location of Human Ortholog: 7p15 Cellular Component: nucleoplasm; transcription factor complex; cytoplasm; nucleus Molecular Function: RNA polymerase II transcription factor activity, enhancer binding; protein dimerization activity; signal transducer activity; ligand-dependent nuclear receptor activity; protein binding; DNA binding; protein heterodimerization activity; sequence-specific DNA binding; Hsp90 protein binding; transcription factor activity; transcription factor binding Biological Process: prostate gland development; transcription from RNA polymerase II promoter; blood vessel development; intracellular receptor-mediated signaling pathway; apoptosis; response to toxin; positive regulation of transcription, DNA-dependent; negative regulation of transcription from RNA polymerase II promoter; cell cycle; regulation of transcription from RNA polymerase II promoter; response to xenobiotic stimulus; regulation of transcription, DNA-dependent; regulation of gene expression; xenobiotic metabolic process; regulation of B cell proliferation; positive regulation of transcription from RNA polymerase II promoter; circadian regulation of gene expression; negative regulation of transcription, DNA-dependent; positive regulation of transcriptional preinitiation complex assembly
Research Articles on AHR	**1.** The AHR-FGF21 endocrine signaling pathway establishes AHR as a pivotal environmental modifier that integrates signals from chemical exposure in the regulation of lipid and energy metabolism.
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