AVPR2 siRNA – Vasopressin V2 Receptor Isoform 1 (Human)

PRODUCT OVERVIEW

Product Name	AVPR2, siRNA
Full Product Name	AVPR2 siRNA (Human)
Product Gene Name	AVPR2 sirna
Product Synonym Names	ADHR; DIR; DIR3; V2R; Vasopressin V2 receptor; V2R; AVPR V2; Antidiuretic hormone receptor; Renal-type arginine vasopressin receptor
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	AVPR2 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	33,743 Da
OMIM	300538
3D Structure	ModBase 3D Structure for P30518
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 AVPR2 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 AVPR2 sirna	RNA Interference (RNAi)
Related Product Information for AVPR2 sirna	MBS8212997 is an siRNA targeting AVPR2. Also known as AVPR2 siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit AVPR2 expression using RNA interference
Other Notes	Small volumes of AVPR2 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 AVPR2. It may not necessarily be applicable to this product.

NCBI GI #	4557345
NCBI GeneID	554
NCBI Accession #	NP_000045.1
UniProt Primary Accession #	P30518
UniProt Secondary Accession #	O43192; Q3MJD3; Q9UCV9; C5HF20
UniProt Related Accession #	P30518
GenBank Nucleotide #	NM_000054.4
NCBI Official Full Name	vasopressin V2 receptor isoform 1
NCBI Official Synonym Full Names	arginine vasopressin receptor 2
NCBI Official Symbol	AVPR2
NCBI Official Synonym Symbols	DI1; DIR; NDI; V2R; ADHR; DIR3
UniProt Protein Name	Vasopressin V2 receptor
UniProt Synonym Protein Names	AVPR V2; Antidiuretic hormone receptor; Renal-type arginine vasopressin receptor
Protein Family	Vasopressin V2 receptor
UniProt Gene Name	AVPR2
UniProt Synonym Gene Names	ADHR; DIR; DIR3; V2R; V2R
UniProt Entry Name	V2R_HUMAN
NCBI Protein Information	vasopressin V2 receptor
NCBI Summary for AVPR2	This gene encodes the vasopressin receptor, type 2, also known as the V2 receptor, which belongs to the seven-transmembrane-domain G protein-coupled receptor (GPCR) superfamily, and couples to Gs thus stimulating adenylate cyclase. The subfamily that includes the V2 receptor, the V1a and V1b vasopressin receptors, the oxytocin receptor, and isotocin and mesotocin receptors in non-mammals, is well conserved, though several members signal via other G proteins. All bind similar cyclic nonapeptide hormones. The V2 receptor is expressed in the kidney tubule, predominantly in the distal convoluted tubule and collecting ducts, where its primary property is to respond to the pituitary hormone arginine vasopressin (AVP) by stimulating mechanisms that concentrate the urine and maintain water homeostasis in the organism. When the function of this gene is lost, the disease Nephrogenic Diabetes Insipidus (NDI) results. The V2 receptor is also expressed outside the kidney although its tissue localization is uncertain. When these 'extrarenal receptors' are stimulated by infusion of a V2 selective agonist (dDAVP), a variety of clotting factors are released into the bloodstream. The physiologic importance of this property is not known - its absence does not appear to be detrimental in NDI patients. The gene expression has also been described in fetal lung tissue and lung cancer associated with alternative splicing. [provided by RefSeq, Jul 2008]

UniProt Comments for AVPR2	AVPR2: Receptor for arginine vasopressin. The activity of this receptor is mediated by G proteins which activate adenylate cyclase. Involved in renal water reabsorption. Defects in AVPR2 are the cause of nephrogenic syndrome of inappropriate antidiuresis (NSIAD). This disorder is characterized by an inability to excrete a free water load, with inappropriately concentrated urine and resultant hyponatremia, hypoosmolarity, and natriuresis. Defects in AVPR2 are the cause of diabetes insipidus nephrogenic X-linked (XNDI); also known as diabetes insipidus nephrogenic type 1. XNDI is caused by the inability of the renal collecting ducts to absorb water in response to arginine vasopressin. It is characterized by excessive water drinking (polydypsia), excessive urine excretion (polyuria), persistent hypotonic urine, and hypokalemia. Belongs to the G-protein coupled receptor 1 family. Vasopressin/oxytocin receptor subfamily. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Receptor, GPCR; Transporter; GPCR, family 1; Transporter, aquaporin family; Membrane protein, multi-pass; Membrane protein, integral Chromosomal Location of Human Ortholog: Xq28 Cellular Component: Golgi apparatus; integral to plasma membrane; endoplasmic reticulum; plasma membrane; integral to membrane; endosome Molecular Function: protein binding; peptide binding; vasopressin receptor activity Biological Process: I-kappaB kinase/NF-kappaB cascade; water transport; adenylate cyclase activation; positive regulation of systemic arterial blood pressure; excretion; cellular response to hormone stimulus; G-protein signaling, coupled to cAMP nucleotide second messenger; telencephalon development; regulation of systemic arterial blood pressure by vasopressin; hemostasis; positive regulation of protein ubiquitination; response to cytokine stimulus; positive regulation of cell proliferation; interferon-gamma production; positive regulation of vasoconstriction; renal water homeostasis; transmembrane transport Disease: Nephrogenic Syndrome Of Inappropriate Antidiuresis; Diabetes Insipidus, Nephrogenic, X-linked
Research Articles on AVPR2	**1.** Rescue of the N321K-V2R function by Val(4)-desmopressin action in nephrogenic diabetes insipidus.
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