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Product datasheet for TR502040

Six4 Mouse shRNA Plasmid (Locus ID 20474)

Product data:

Product Type:	shRNA Plasmids
Product Name:	Six4 Mouse shRNA Plasmid (Locus ID 20474)
Locus ID:	20474
Synonyms:	AI047561; AREC3; TrexBF
Vector:	pRS (TR20003)
E. coli Selection:	Ampicillin
Mammalian Cell Selection:	Puromycin
Format:	Retroviral plasmids
Components:	Six4 - Mouse, 4 unique 29mer shRNA constructs in retroviral untagged vector(Gene ID = 20474). 5µg purified plasmid DNA per construct 29-mer scrambled shRNA cassette in pRS Vector, TR30012, included for free.
RefSeq:	NM_011382, NM_011382.1, NM_011382.2, BC137931, BC137934, NM_001362272
UniProt ID:	Q61321

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Summary:

Transcriptional regulator which can act as both a transcriptional repressor and activator by binding a DNA sequence on these target genes and is involved in processes like cell differentiation, cell migration and cell survival. Transactivates gene expression by binding a 5'-[CAT]A[CT][CT][CTG]GA[GAT]-3' motif present in the Trex site and from a 5'-TCA[AG][AG]TTNC-3' motif present in the MEF3 site of the muscle-specific genes enhancer (PubMed:14966291). Acts cooperatively with EYA proteins to transactivate their target genes through interaction and nuclear translocation of EYA protein (PubMed:10490620). Acts synergistically with SIX1 to regulate target genes involved in formation of various organs, including muscle, kidney, gonad, ganglia, olfactory epithelium and cranial skeleton. Plays a role in several important steps of muscle development. Controls the genesis of hypaxial myogenic progenitors in the dermomyotome by transactivating PAX3 and the delamination and migration of the hypaxial precursors from the ventral lip to the limb buds through the transactivation of PAX3, MET and LBX1 (PubMed:15788460). Controls myoblast determination by transactivating MYF5, MYOD1 and MYF6 (PubMed:15788460, PubMed:17592144). Controls somitic differentiation in myocyte through MYOG transactivation (PubMed:15788460). Plays a role in synaptogenesis and sarcomere organization by participating in myofiber specialization during embryogenesis by activating fast muscle program in the primary myotome resulting in an up-regulation of fast muscle genes, including ATP2A1, MYL1 and TNNT3 (PubMed:19962975, PubMed:21884692). Simultaneously, is also able to activate inhibitors of slow muscle genes, such as SOX6, HRASLS, and HDAC4, thereby restricting the activation of the slow muscle genes (PubMed:21884692). During muscle regeneration, negatively regulates differentiation of muscle satellite cells through down-regulation of MYOG expression (PubMed:20696153). During kidney development regulates the early stages of metanephros development and ureteric bud formation through regulation of GDNF, SALL1, PAX8 and PAX2 expression (PubMed:17300925). Plays a role in gonad development by regulating both testis determination and size determination. In gonadal sex determination, transactivates ZFPM2 by binding a MEF3 consensus sequence, resulting in SRY up-regulation. In gonadal size determination, transactivates NR5A1 by binding a MEF3 consensus sequence resulting in gonadal precursor cell formation regulation (PubMed:23987514). During olfactory development mediates the specification and patterning of olfactory placode through fibroblast growth factor and BMP4 signaling pathways and also regulates epithelial cell proliferation during placode formation (PubMed:19027001). Promotes survival of sensory neurons during early trigeminal gangliogenesis (PubMed:16938278). In the developing dorsal root ganglia, up-regulates SLC12A2 transcription (PubMed:15955062). Regulates early thymus/parathyroid organogenesis through regulation of GCM2 and FOXN1 expression (PubMed:16530750). Forms gustatory papillae during development of the tongue (PubMed:21978088). Also plays a role during embryonic cranial skeleton morphogenesis (PubMed:20515681).[UniProtKB/Swiss-Prot Function]

shRNA Design:

These shRNA constructs were designed against multiple splice variants at this gene locus. To be certain that your variant of interest is targeted, please contact techsupport@origene.com. If you need a special design or shRNA sequence, please utilize our custom shRNA service.

Performance Guaranteed:

OriGene guarantees that the sequences in the shRNA expression cassettes are verified to correspond to the target gene with 100% identity. One of the four constructs at minimum are guaranteed to produce 70% or more gene expression knock-down provided a minimum transfection efficiency of 80% is achieved. Western Blot data is recommended over qPCR to evaluate the silencing effect of the shRNA constructs 72 hrs post transfection. To properly assess knockdown, the gene expression level from the included scramble control vector must be used in comparison with the target-specific shRNA transfected samples.

For non-conforming shRNA, requests for replacement product must be made within ninety (90) days from the date of delivery of the shRNA kit. To arrange for a free replacement with newly designed constructs, please contact Technical Services at techsupport@origene.com. Please provide your data indicating the transfection efficiency and measurement of gene expression knockdown compared to the scrambled shRNA control (Western Blot data preferred).