SANTA CRUZ BIOTECHNOLOGY, INC.

AREL1 siRNA (h): sc-92294

BACKGROUND

AREL1 (apoptosis resistant E3 ubiquitin protein ligase 1), also known as KIAA0317, is a 823 amino acid cytoplasmic protein that contains one filamin repeat and one HECT (E6AP-type E3 ubiquitin-protein ligase) domain. AREL1 interacts with ubiquitinated IAP (inhibitor of apoptosis protein) antagonists such as SMAC (also known as DIABLO), HtrA2, and ARTS (also known as SEPT4) in apoptosis-stimulated cells, where the IAP antagonists were released into the cytosol from the mitochondria. AREL1 accepts ubiquitin from an E2 ubiquitin-conjugating enzyme and directly transfers the ubiquitin to the IAP antagonists, marking them for degradation and as such playing a role in apoptosis regulation. Artificial depletion of these three IAP antagonists by knockdown results in inhibition of caspase-3 cleavage, XIAP degradation and the induction of apoptosis.

REFERENCES

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2. Strausberg, R.L., et al. 2002. Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences. Proc. Natl. Acad. Sci. USA 99: 16899-16903.
3. Heilig, R., et al. 2003. The DNA sequence and analysis of human chromosome 14. Nature 421: 601-607.
4. Gerhard, D.S., et al. 2004. The status, quality, and expansion of the NIH full-length cDNA project: the mammalian gene collection (MGC). Genome Res. 14: 2121-2127.
5. Rose, J.E., et al. 2010. Personalized smoking cessation: interactions between nicotine dose, dependence and quit-success genotype score. Mol. Med. 16: 247-253.
6. Taipale, M., et al. 2012. Quantitative analysis of HSP90-client interactions reveals principles of substrate recognition. Cell 150: 987-1001.
7. Kim, J.B., et al. 2013. Identification of a novel anti-apoptotic E3 ubiquitin ligase that ubiquitinates antagonists of inhibitor of apoptosis proteins SMAC, HtrA2, and ARTS. J. Biol. Chem. 288: 12014-12021.

CHROMOSOMAL LOCATION

Genetic locus: AREL1 (human) mapping to 14q24.3.

PRODUCT

AREL1 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AREL1 shRNA Plasmid (h): sc-92294-SH and AREL1 shRNA (h) Lentiviral Particles: sc-92294-V as alternate gene silencing products.

For independent verification of AREL1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-92294A, sc-92294B and sc-92294C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

AREL1 siRNA (h) is recommended for the inhibition of AREL1 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AREL1 gene expression knockdown using RT-PCR Primer: AREL1 (h)-PR: sc-92294-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.