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SANTA CRUZ BIOTECHNOLOGY, INC.

ZAP siRNA (m): sc-155429

BACKGROUND

ZAP (zinc-finger antiviral protein), also known as ZC3HAV1 (zinc-finger CCCH-type, antiviral 1), ZC3H2 (zinc-finger CCCH domain-containing protein 2) or PARP13, is a 902 amino acid protein that prevents retroviral infection by inducing innate immunity and inhibiting viral gene expression. Highly expressed in liver and kidney and existing as five alternatively spliced isoforms, ZAP shuttles between both cytoplasm and nucleus in a CRM1-dependent manner. ZAP contains one WWE domain, a single single PARP catalytic domain and four C3H1-type zinc fingers, two of which are used for binding specific viral RNAs. The gene encoding ZAP maps to human chromosome 7, which comprises nearly 5% of the human genome is linked to Osteogenesis imperfecta, Pendred syndrome, Lissencephaly, Citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

1. Tsipouras, P., et al. 1983. Restriction fragment length polymorphism associated with the pro alpha2(I) gene of human type I procollagen. Application to a family with an autosomal dominant form of osteogenesis imperfecta. J. Clin. Invest. 72: 1262-1267.
2. Iwasaki, S., et al. 2001. Long-term audiological feature in Pendred syndrome caused by PDS mutation. Arch. Otolaryngol. Head Neck Surg. 127: 705-708.
3. Gao, G., et al. 2002. Inhibition of retroviral RNA production by ZAP, a CCCH-type zinc finger protein. Science 297: 1703-1706.
4. Bick, M.J., et al. 2003. Expression of the zinc-finger antiviral protein inhibits αvirus replication. J. Virol. 77: 11555-11562.
5. MacDonald, M.R., et al. 2007. The zinc-finger antiviral protein acts synergistically with an interferon-induced factor for maximal activity against αviruses. J. Virol. 81: 13509-13518.
6. Kerns, J.A., et al. 2008. Positive selection and increased antiviral activity associated with the PARP-containing isoform of human zinc-finger antiviral protein. PLoS Genet. 4: e21.

CHROMOSOMAL LOCATION

Genetic locus: Zc3hav1 (mouse) mapping to 6 B1.

PRODUCT

ZAP siRNA (m) 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 ZAP shRNA Plasmid (m): sc-155429-SH and ZAP shRNA (m) Lentiviral Particles: sc-155429-V as alternate gene silencing products.

For independent verification of ZAP (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-155429A, sc-155429B and sc-155429C.

PROTOCOLS

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

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

ZAP siRNA (m) is recommended for the inhibition of ZAP expression in mouse 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 ZAP gene expression knockdown using RT-PCR Primer: ZAP (m)-PR: sc-155429-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.