SANTA CRUZ BIOTECHNOLOGY, INC.

Enigma siRNA (h): sc-77273

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The Power to Question

BACKGROUND

Enigma, also known as PDLIM7 (PDZ and LIM domain 7) or LMP1 (LIM mineralization protein), is a 457 amino acid protein that localizes to both the cytoplasm and the cytoskeleton. Expressed ubiquitously with highest expression in skeletal muscle, spleen, lung and fetal liver, Enigma is thought to function as a scaffold on which protein assembly can occur. Enigma contains three LIM zinc-binding domains and one PDZ domain through which it may also act as an adaptor, linking various proteins to Actin filaments found in skeletal muscle and non-muscle tissues. Additionally, Enigma is directly involved in the two mechanisms of bone formation, namely direct bone formation (embryonic flat bones mandible and cranium) and endochondral bone formation (embryonic long bone development), and may play a role in bone fracture repair. Six isoforms of Enigma exist due to alternative splicing events.

REFERENCES

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2. Durick, K., et al. 1998. Shc and Enigma are both required for mitogenic signaling by Ret/ptc2. Mol. Cell. Biol. 18: 2298-2308.
3. Guy, P.M., et al. 1999. The PDZ domain of the LIM protein Enigma binds to β-Tropomyosin. Mol. Biol. Cell 10: 1973-1984.
4. Bach, I. 2000. The LIM domain: regulation by association. Mech. Dev. 91: 5-17.
5. Borrello, M.G., et al. 2002. Differential interaction of Enigma protein with the two Ret isoforms. Biochem. Biophys. Res. Commun. 296: 515-522.
6. Liu, Y., et al. 2002. Overexpressed LIM mineralization proteins do not require LIM domains to induce bone. J. Bone Miner. Res. 17: 406-414.
7. Barrès, R., et al. 2006. Enigma interacts with adaptor protein with PH and SH2 domains to control Insulin-induced Actin cytoskeleton remodeling and glucose transporter 4 translocation. Mol. Endocrinol. 20: 2864-2875.
8. Fei, Q., et al. 2007. Truncated human LMP-1 triggers differentiation of C2C12 cells to an osteoblastic phenotype *in vitro*. Acta Biochim. Biophys. Sin. 39: 693-700.

CHROMOSOMAL LOCATION

Genetic locus: PDLIM7 (human) mapping to 5q35.3.

PRODUCT

Enigma siRNA (h) is a target-specific 19-25 nt siRNA 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 Enigma shRNA Plasmid (h): sc-77273-SH and Enigma shRNA (h) Lentiviral Particles: sc-77273-V as alternate gene silencing products.

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

Enigma siRNA (h) is recommended for the inhibition of Enigma 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.

GENE EXPRESSION MONITORING

Enigma (H-12): sc-398100 is recommended as a control antibody for monitoring of Enigma gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Enigma gene expression knockdown using RT-PCR Primer: Enigma (h)-PR: sc-77273-PR (20 µl, 479 bp). 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.