Enigma (L-14): sc-70059

SANTA CRUZ® BIOTECHNOLOGY

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

1. Wu, R.Y. and Gill, G.N. 1994. LIM domain recognition of a tyrosine-containing tight turn. J. Biol. Chem. 269: 25085-25090.

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.

CHROMOSOMAL LOCATION

Genetic locus: PDLIM7 (human) mapping to 5q35.3; Pdlim7 (mouse) mapping to 13 B1.

SOURCE

Enigma (L-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Enigma of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-70059 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Enigma (L-14) is recommended for detection of Enigma of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Enigma (L-14) is also recommended for detection of Enigma in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Enigma siRNA (h): sc-77273, Enigma siRNA (m): sc-77274, Enigma shRNA Plasmid (h): sc-77273-SH, Enigma shRNA Plasmid (m): sc-77274-SH, Enigma shRNA (h) Lentiviral Particles: sc-77273-V and Enigma shRNA (m) Lentiviral Particles: sc-77274-V.
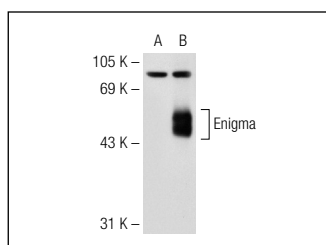
Molecular Weight of Enigma: 55 kDa.

Positive Controls: Enigma (h): 293T Lysate: sc-170164, HeLa nuclear extract: sc-2120 or WI 38 whole cell lysate: sc-364260.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA

Enigma (L-14): sc-70059. Western blot analysis of Enigma expression in non-transfected: sc-117752 (**A**) and human Enigma transfected: sc-170164 (**B**) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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