SANTA CRUZ BIOTECHNOLOGY, INC.

Enigma (D-10): sc-376359

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., et al. 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 (D-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 13-47 near the N-terminus of Enigma of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376359 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Enigma (D-10) is recommended for detection of Enigma of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

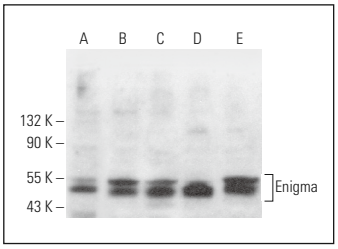
Molecular Weight of Enigma: 55 kDa.

Positive Controls: A-10 cell lysate: sc-3806, HeLa nuclear extract: sc-2120 or Sol8 cell lysate: sc-2249.

RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Enigma (D-10): sc-376359. Western blot analysis of Enigma expression in HeLa nuclear extract (**A**) and U-251-MG (**B**), C2C12 (**C**), Sol8 (**D**) and A-10 (**E**) whole cell lysates.

Enigma (D-10): sc-376359. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic and membrane staining of myocytes.

STORAGE

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

RESEARCH USE

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