cathepsin 6 (J14h): sc-80514



The Power to Question

BACKGROUND

The cathepsin family of proteolytic enzymes contains several diverse classes of proteases. Cathepsin 6 is a member of the C1A papain family. It is a cysteine peptidase exclusively expressed in labyrinthine trophoblastic cells of the murine placenta where it colocalizes with its closest relative, Cathepsin J/P. Cathepsin 6 may be involved in mediating the gas and nutrient exchange between maternal and fetal blood. In addition, it may play a role in immunological modulation or processing of secretory protein factors. Cathepsin 6 expression is regulated during mouse embryonic development. The mouse, placentally expressed cathepsin genes, Cathepsin M, J/P, Q, R, 1, 2, 3 and 6, are located in a tight cluster on chromosome 13. They are found in mice and rats, but homologs of these genes are not found in humans.

REFERENCES

- Nakajima, A., Kataoka, K., Takata, Y. and Huh, N.H. 2001. Cathepsin-6, a novel cysteine proteinase showing homology with and co-localized expression with cathepsin J/P in the labyrinthine layer of mouse placenta. Biochem. J. 349: 689-692.
- Deussing, J., Kouadio, M., Rehman, S., Werber, I., Schwinde, A. and Peters, C. 2002. Identification and characterization of a dense cluster of placenta-specific cysteine peptidase genes and related genes on mouse chromosome 13. Genomics 79: 225-240.
- Puente, X.S., Sánchez, L.M., Overall, C.M. and López-Otín, C. 2003. Human and mouse proteases: a comparative genomic approach. Nat. Rev. Genet. 4: 544-558.
- Uinuk-Ool, T.S., Takezaki, N., Kuroda, N., Figueroa, F., Sato, A., Samonte, I.E., Mayer, W.E. and Klein, J. 2003. Phylogeny of antigen-processing enzymes: cathepsins of a cephalochordate, an agnathan and a bony fish. Scand. J. Immunol. 58: 436-448.
- Ishida, M., Ono, K., Taguchi, S., Ohashi, S., Naito, J., Horiguchi, K. and Harigaya, T. 2004. Cathepsin gene expression in mouse placenta during the latter half of pregnancy. J. Reprod. Dev. 50: 515-523.
- 6. Juriloff, D.M., Harris, M.J. and Dewell, S.L. 2004. A digenic cause of cleft lip in A-strain mice and definition of candidate genes for the two loci. Birth Defects Res. Part A Clin. Mol. Teratol. 70: 509-518.
- 7. Bode, S., Peters, C. and Deussing, J.M. 2005. Placental cathepsin M is alternatively spliced and exclusively expressed in the spongiotrophoblast layer. Biochim. Biophys. Acta 1731: 160-167.
- 8. Varanou, A., Withington, S.L., Lakasing, L., Williamson, C., Burton, G.J. and Hemberger, M. 2006. The importance of cysteine cathepsin proteases for placental development. J. Mol. Med. 84: 305-317.

CHROMOSOMAL LOCATION

Genetic locus: Cts6 (mouse) mapping to 13 B2.

SOURCE

cathepsin 6 (J14h) is a rat monoclonal antibody raised against full-length recombinant cathepsin 6 of mouse origin.

PRODUCT

Each vial contains 100 $\mu g \; lg G_{2a}$ in 1.0 ml PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

cathepsin 6 (J14h) is recommended for detection of cathepsin 6 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for cathepsin 6 siRNA (m): sc-77419, cathepsin 6 shRNA Plasmid (m): sc-77419-SH and cathepsin 6 shRNA (m) Lentiviral Particles: sc-77419-V.

Molecular Weight of cathepsin 6: 41 kDa.

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.

PROTOCOLS

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

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