

# cathepsin A (4526): sc-73766

## BACKGROUND

The cathepsin family of proteolytic enzymes include several diverse classes of proteases. Cathepsins B, L, H, K, S and O comprise the cysteine protease class. Cathepsins D and E comprise the aspartate protease class. The serine protease class includes cathepsin G. Cathepsins function in cellular metabolism and participate in peptide biosynthesis and protein degradation. Cathepsin A, a serine carboxypeptidase, exists in a high molecular weight lysosomal complex with  $\beta$ -galactosidase ( $\beta$ -Gal) and  $\alpha$ -neuraminidase (Neu1). Cathepsin A functions to protect  $\beta$ -Gal and Neu1 from intralysosomal proteolysis. Deficiencies in cathepsin A lead to deficiencies in  $\beta$ -Gal and Neu1. The gene encoding human cathepsin A maps to chromosome 20q13.12. Mutations in this gene cause galactosialidosis, a lysosomal storage disorder resulting from the  $\beta$ -Gal and Neu1 deficiencies.

## REFERENCES

1. Wiegant, J., Galjart, N.J., Raap, A.K. and d'Azzo, A. 1991. The gene encoding human protective protein (PPGB) is on chromosome 20. *Genomics* 10: 345-349.
2. Heusel, J.W., Scarpati, E.M., Jenkins, N.A., Gilbert, D.J., Copeland, N.G., Shapiro, S.D. and Ley, T.J. 1993. Molecular cloning, chromosomal location, and tissue-specific expression of the murine cathepsin G gene. *Blood* 81: 1614-1623.
3. Shi, G.P., Chapman, H.A., Bhairi, S.M., DeLeeuw, C., Reddy, V.Y. and Weiss, S.J. 1995. Molecular cloning of human cathepsin O, a novel endoproteinase and homologue of rabbit OC-2. *FEBS Lett.* 357: 129-134.
4. Tsukuba, T., Okamoto, K., Yasuda, Y., Morikawa, W., Nakanishi, H. and Yamamoto, K. 2000. New functional aspects of cathepsin D and cathepsin E. *Mol. Cell* 10: 601-611.
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## CHROMOSOMAL LOCATION

Genetic locus: PPGB (human) mapping to 20q13.12.

## SOURCE

cathepsin A (4526) is a mouse monoclonal antibody raised against cathepsin A corresponding to amino acids 29-480 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

## 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.

## APPLICATIONS

cathepsin A (4526) is recommended for detection of cathepsin A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for cathepsin A siRNA (h): sc-41469, cathepsin A shRNA Plasmid (h): sc-41469-SH and cathepsin A shRNA (h) Lentiviral Particles: sc-41469-V.

Molecular Weight of cathepsin A: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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).

## SELECT PRODUCT CITATIONS

1. Li, X., Dai, J., Tang, Y., Li, L. and Jin, G. 2017. Quantitative proteomic profiling of tachyplesin I targets in U251 gliomaspheres. *Mar. Drugs*. E-published.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.