

# cathepsin A (N-15): sc-26046

## 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 aspartyle 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 20q13.1. Mutations in this gene cause galactosialidosis, a lysosomal storage disorder resulting from the  $\beta$ -Gal and Neu1 deficiencies.

## REFERENCES

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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 OC2. *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: CTSA (human) mapping to 20q13.12; Ctsa (mouse) mapping to 2 H3.

## SOURCE

cathepsin A (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of cathepsin A of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26046 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

cathepsin A (N-15) is recommended for detection of precursor and 32 kDa chain of cathepsin A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

cathepsin A (N-15) is also recommended for detection of precursor and 32 kDa chain of cathepsin A in additional species, including equine and canine.

Suitable for use as control antibody for cathepsin A siRNA (h): sc-41469, cathepsin A siRNA (m): sc-41470, cathepsin A shRNA Plasmid (h): sc-41469-SH, cathepsin A shRNA Plasmid (m): sc-41470-SH, cathepsin A shRNA (h) Lentiviral Particles: sc-41469-V and cathepsin A shRNA (m) Lentiviral Particles: sc-41470-V.

Molecular Weight of cathepsin A: 55 kDa.

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

## 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) 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.

## STORAGE

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

## PROTOCOLS

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



Try **cathepsin A (4526): sc-73766**, our highly recommended monoclonal alternative to cathepsin A (N-15).