

# cystatin C (T12): sc-73879

## BACKGROUND

Cystatin C is a cysteine (thiol) protease inhibitor that belongs to the type II cystatin gene superfamily and is the most abundant extracellular inhibitor of cysteine proteases. Cystatin C is a constitutively secreted, amyloidogenic protein, which forms a two-fold symmetric dimer and modulates both cysteine protease activity and the expression of class II MHC molecules. Expression of cystatin C is an indicator of kidney function and glomerular filtration rate. Mutations in the cystatin C gene can lead to protein aggregates, which are implicated in hereditary amyloid angiopathy (HCAA) and cerebral hemorrhage. Although both wildtype and mutant cystatin C are capable of forming concentration dependent inactive dimers, mutant cystatin C dimerizes at lower concentrations and is more susceptible to serine proteases, which may facilitate aggregation. In neuronal cells, oxidative stress stimulates expression of cystatin C, which may positively regulate apoptosis.

## REFERENCES

- Saitoh, E., et al. 1988. Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily related to family III cystatin genes. *Biol. Chem. Hoppe-Seyler* 369: 191-197.
- Nishio, C., et al. 2000. Involvement of cystatin C in oxidative stress-induced apoptosis of cultured rat CNS neurons. *Brain Res.* 873: 252-262.
- Manoury, B., et al. 2001. Bm-CPI-2, a cystatin homolog secreted by the filarial parasite *Brugia malayi*, inhibits class II MHC-restricted antigen processing. *Curr. Biol.* 11: 447-451.
- Janowski, R., et al. 2001. Human cystatin C, an amyloidogenic protein, dimerizes through three-dimensional domain swapping. *Nat. Struct. Biol.* 8: 316-320.
- Aras, O., et al. 2001. Cystatin C is an independent predictor of fasting and post-methionine load total homocysteine concentrations among stable renal transplant recipients. *Clin. Chem.* 47: 1263-1268.
- Calero, M., et al. 2001. Distinct properties of wildtype and the amyloidogenic human cystatin C variant of hereditary cerebral hemorrhage with amyloidosis, Icelandic type. *J. Neurochem.* 77: 628-637.
- Abrahamson, M., et al. 2003. Cystatins. *Biochem. Soc. Symp.* 70: 179-199.
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## CHROMOSOMAL LOCATION

Genetic locus: CST3 (human) mapping to 20p11.21; Cst3 (mouse) mapping to 2 G3.

## SOURCE

cystatin C (T12) is a rat monoclonal antibody raised against a recombinant protein mapping within amino acids 21-140 of cystatin C of mouse origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2b</sub> in 1.0 ml PBS with < 0.1% sodium azide and protein stabilizer.

## APPLICATIONS

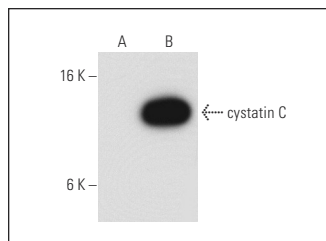
cystatin C (T12) is recommended for detection of cystatin C of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; non cross-reactive with rhCystatins A, D, S, SA or SN, rmCystatins B or EM, rhFetuin B, rmFetuin A, rhHPRG, or rhKininogen.

Suitable for use as control antibody for cystatin C siRNA (h): sc-43714, cystatin C siRNA (m): sc-61842, cystatin C shRNA Plasmid (h): sc-43714-SH, cystatin C shRNA Plasmid (m): sc-61842-SH, cystatin C shRNA (h) Lentiviral Particles: sc-43714-V and cystatin C shRNA (m) Lentiviral Particles: sc-61842-V.

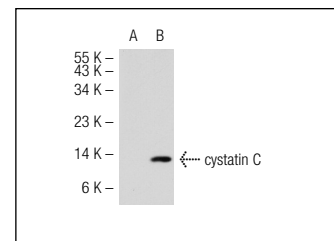
Molecular Weight of cystatin C: 13 kDa.

Positive Controls: cystatin C (m): 293T Lysate: sc-126695 or cystatin C (h): 293T Lysate: sc-111929.

## DATA



cystatin C (T12): sc-73879. Western blot analysis of cystatin C expression in non-transfected: sc-117752 (A) and human cystatin C transfected: sc-111929 (B) 293T whole cell lysates.



cystatin C (T12): sc-73879. Western blot analysis of cystatin C expression in non-transfected: sc-117752 (A) and mouse cystatin C transfected: sc-126695 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Xu, X., et al. 2013. Efficacy of ethanol extract of *Fructus lycii* and its constituents lutein/zeaxanthin in protecting retinal pigment epithelium cells against oxidative stress: *in vivo* and *in vitro* models of age-related macular degeneration. *J. Ophthalmol.* 2013: 862806.

## 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](http://www.scbt.com) for detailed protocols and support products.