SANTA CRUZ BIOTECHNOLOGY, INC.

# cystatin C (P-14): sc-16989

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## 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 (HCCAA) and cerebral hemorrhage. Although both wild-type 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


1. 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.
2. Nishio, C., et al. 2000. Involvement of cystatin C in oxidative stress-induced apoptosis of cultured rat CNS neurons. Brain Res. 873: 252-262.
3. Janowski, R., et al. 2001. Human cystatin C, an amyloidogenic protein, dimerizes through three-dimensional domain swapping. Nat. Struct. Biol. 8: 316-320.
4. 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.


## CHROMOSOMAL LOCATION

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

## SOURCE

cystatin C (P-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of cystatin C of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16989 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

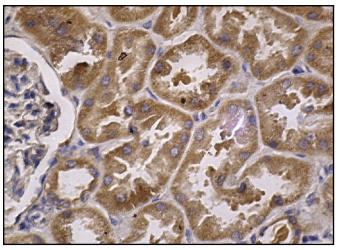
## APPLICATIONS

cystatin C (P-14) 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), 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).

Suitable for use as control antibody for cystatin C siRNA (h): sc-43714, cystatin C siRNA (m): sc-61842, cystatin C siRNA (r): sc-156084, cystatin C shRNA Plasmid (h): sc-43714-SH, cystatin C shRNA Plasmid (m): sc-61842-SH, cystatin C shRNA Plasmid (r): sc-156084-SH, cystatin C shRNA (h) Lentiviral Particles: sc-43714-V, cystatin C shRNA (m) Lentiviral Particles: sc-61842-V and cystatin C shRNA (r) Lentiviral Particles: sc-156084-V.

Molecular Weight of cystatin C: 13 kDa.

## DATA



cystatin C (P-14): sc-16989. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

## SELECT PRODUCT CITATIONS


1. Gressner A.M, et al. 2006. Variable expression of cystatin C in cultured *trans*-differentiating rat hepatic stellate cells. World J. Gastroenterol. 12: 731-738.
2. Alizadeh, P., et al. 2006. Regulation of cysteine cathepsin expression by oxidative stress in the retinal pigment epithelium/choroid of the mouse. Exp. Eye Res. 83: 679-687.
3. Klose, A., et al. 2006. Contact of high-invasive, but not low-invasive, melanoma cells to native collagen I induces the release of mature cathepsin B. Int. J. Cancer 118: 2735-2743.
4. Abdul-Hussien, H., et al. 2007. Collagen degradation in the abdominal aneurysm: a conspiracy of matrix metalloproteinase and cysteine collagenases. Am. J. Pathol. 170: 809-817.
5. Abdul-Hussien, H., et al. 2009. Doxycycline therapy for abdominal aneurysm: Improved proteolytic balance through reduced neutrophil content. J. Vasc. Surg. 49: 741-749.