

## Recombinant Human Cystatin C (carrier-free)

<b>Catalog# / Size</b>	756208 / 500 µg 756202 / 10 µg 756204 / 25 µg 756206 / 100 µg
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	Cystatin-3, Gamma-trace, Neuroendocrine basic polypeptide, Post-gamma-globulin, gamma-CSF, post-gamma protein
<b>Description</b>	<p>Cystatin C was initially identified in human urine and was named gamma-trace. It is a type II cystatin sub-family member. The cystatin family contains three subfamilies: Type 1 cystatins, also known as stefins, which are predominantly present in the cytosol and the nuclei; Type 2 cystatins are mainly secreted proteins; Type 3 cystatins are multi-domain proteins of high molecular weight (60-120 kD) and are also known as kininogens. Cystatin C inhibits cysteine proteases from the papain family and legumain. It forms tight non-covalent associations with its target enzymes. Cystatin C antagonizes TGF-β signaling in normal and cancer cells <i>in vitro</i>. In this process, Cystatin C binds to the TGF-β type II receptor and inhibits the binding of TGF-β. Cystatin C influences the progression of diseases such as, cancer metastasis, atherosclerosis, aortic aneurisms, emphysema, and arthritis. Also, it is associated with neurodegenerative disease and cerebral angiopathy. Human Cystatin C has the tendency to dimerize in order to produce very tight two-fold symmetric dimers. This amyloidogenic property suggests a mechanism for its aggregation in the brain arteries of elderly people with amyloid angiopathy. The L68Q mutant of human Cystatin C is responsible for conformational disease, which causes massive amyloidosis, cerebral hemorrhage, and death in young adults.</p>

### Product Details

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<b>Source</b>	Human Cystatin C, amino acids (Ser27-Ala146) (Accession# P01034), was expressed in 293E cells. The carboxy terminal contains a TG-10His-GGQ-tag.
<b>Molecular Mass</b>	The 135 amino acid recombinant protein has a predicted molecular mass of approximately 15.1 kD. The DTT-reducing and non-reducing protein migrates at approximately 17 kD by SDS-PAGE. The predicted N-terminal amino acid is Ser.
<b>Purity</b>	>95%, as determined by Coomassie stained SDS-PAGE.
<b>Formulation</b>	0.22 µm filtered protein is in 20 mM HEPES, 0.1 M NaCl, and in pH 7.2.
<b>Endotoxin Level</b>	Less than 0.1 EU per µg cytokine as determined by the LAL method.
<b>Concentration</b>	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.
<b>Storage &amp; Handling</b>	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. <b>Avoid repeated freeze/thaw cycles.</b>
<b>Activity</b>	IC <sub>50</sub> < 6.0 nM, as determined by inhibiting human Papain (0.05 µg/mL) activity when 100 µM of Z-FR-AMC is used as a papain peptide substrate.
<b>Application</b>	<a href="#">Bioassay</a>
<b>Application Notes</b>	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our <a href="#">100% satisfaction guarantee</a> . If you have any concerns, contact us at <a href="mailto:tech@biolegend.com">tech@biolegend.com</a> .

## Antigen Details

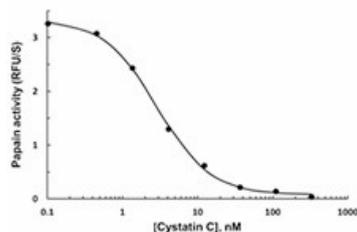
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<b>Structure</b>	Monomer.
<b>Distribution</b>	Considered ubiquitously expressed, biological fluids, dendritic cells, and macrophages.
<b>Function</b>	Inhibitor of cysteine proteases (cathepsins B, H, K, L, and S). Transcription factor IFN regulatory factor 8 (IRF-8) induces cystatin C in mouse primary dendritic cells. IL-10 inhibits IRF-8 and consequently Cystatin C.
<b>Interaction</b>	Normal and cancer cells.
<b>Ligand/Receptor</b>	Papain-like cysteine proteases, cathepsins B, H, K, L, and S, and legumain.
<b>Bioactivity</b>	Inhibits cystein proteases.
<b>Biology Area</b>	Cancer Biomarkers, Cell Biology
<b>Molecular Family</b>	Enzymes and Regulators
<b>Antigen References</b>	<ol style="list-style-type: none"><li>1. Grubb A, <i>et al.</i> 1982. <i>Proc. Nat. Acad. Sci.</i> 79:3024.</li><li>2. Janowski R, <i>et al.</i> 2001. <i>Nat. Struct. Biol.</i> 8:316.</li><li>3. Sokol JP, Schiemann WP. 2004. <i>Mol. Cancer Res.</i> 2:183.</li><li>4. Bird PI, <i>et al.</i> 2009. <i>Nat Rev Immunol.</i> 9:871.</li><li>5. Kaur G, Levy E. 2012. <i>Front Mol. Neurosci.</i> 5:79.</li><li>6. Xu Y, <i>et al.</i> 2014. <i>J Biol Chem.</i> 289:9730.</li><li>7. Xu Y, <i>et al.</i> 2015. <i>Immunol. Cell Biol.</i> 5:442-51.</li></ol>

**Gene ID** [1471](#)

## Product Data

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The activity of human Cystatin C was measured by its ability to inhibit papain activity. The papain activity was monitored by the cleavage of a fluorogenic substrate, Z-FR-AMC, with 50 ng/mL of activated papain. The recombinant human Cystatin C displays a value of  $IC_{50} < 6$  nM.

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