

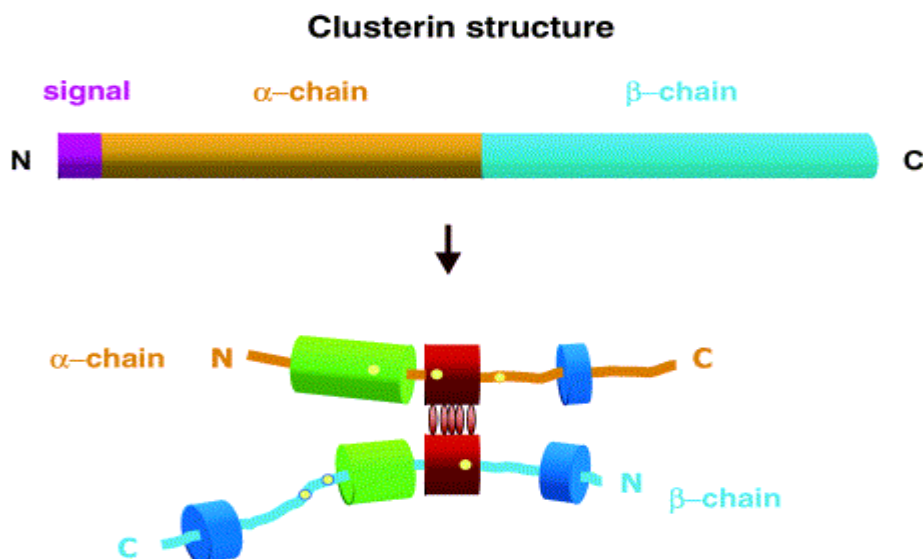
Human Clusterin (Apo-J, Complement cytolysis inhibitor, TRPM-2, Complement-associated protein SP-40,40) His -Tagged Recombinant Protein

Product Data Sheet

Cat. No.: RD172034100

Introduction:

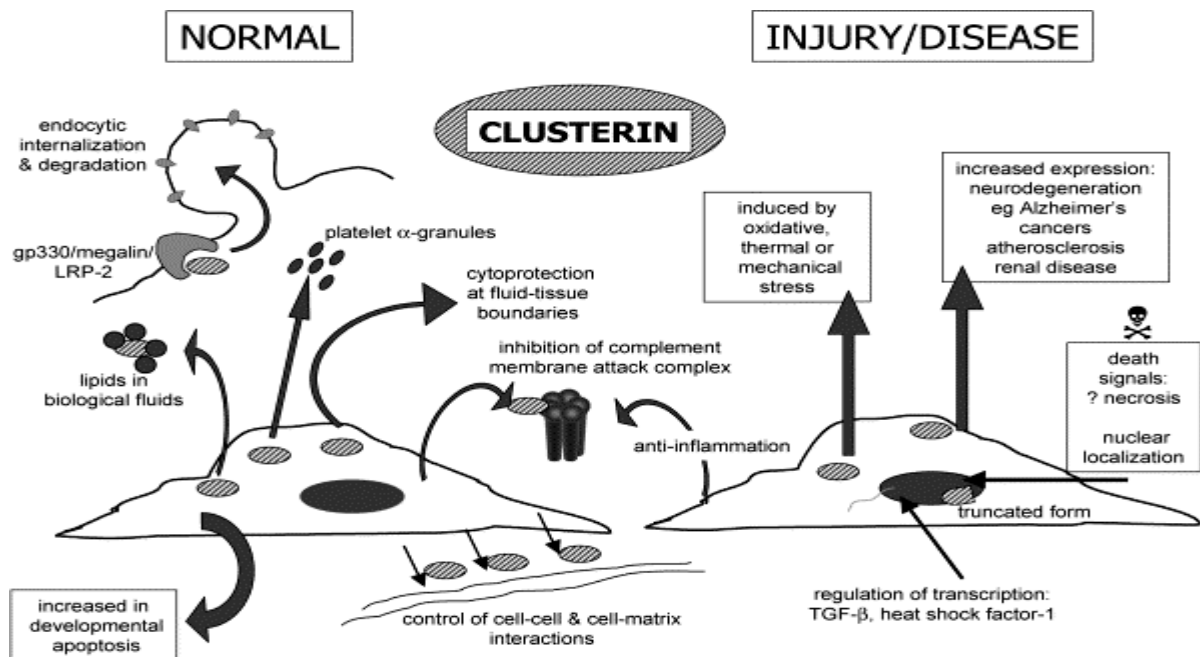
Clusterin is a 75-80 kD disulfide-linked heterodimeric protein containing about 30% of N-linked carbohydrate rich in sialic acid but truncated forms targeted to the nucleus have also been identified.



The precursor polypeptide chain (top) is cleaved proteolytically to remove the 22-mer secretory signal peptide (magenta) and subsequently between residues 227/228 to generate the α(orange)- and β(light blue)-chains. These are assembled in anti-parallel to give a heterodimeric molecule (bottom) in which the cysteine-rich centers (red) are linked by five disulfide bridges (red ellipses) and are flanked by two predicted coiled-coil α-helices (green) and three predicted amphipathic α-helices (dark blue). The six sites of N-linked glycosylation are indicated as yellow spots.

Across a broad range of species clusterin shows a high degree of sequence homology ranging from 70% to 80%. It is nearly ubiquitously expressed in most mammalian tissues and can be found in plasma, milk, urine, cerebrospinal fluid and semen.

It is able to bind and form complexes with numerous partners such as immunoglobulins, lipids, heparin, bacteria, complement components, paraoxonase, beta amyloid, leptin and others. Clusterin has been ascribed a plethora of functions such as phagocyte recruitment, aggregation induction, complement attack prevention, apoptosis inhibition, membrane remodelling, lipid transport, hormone transport and/or scavenging, matrix metalloproteinase inhibition.



A genuine function of clusterin has not been defined. One tempting hypothesis says that clusterin is an extracellular chaperone protecting cells from stress induced insults caused by degraded and misfolded protein precipitates.

Clusterin is up- or downregulated on the mRNA or protein level in many pathological and clinically relevant situations including cancer, organ regeneration, infection, Alzheimer disease, retinitis pigmentosa, myocardial infarction, renal tubular damage, autoimmunity and others.

Description:

Total 454 AA, M.w. 53.1kDa (calculated). The AA sequence (AA 1-427) is identical to Swiss-Prot-P10909 (AA 23-449, secreted Human Clusterin). C-terminal His tag 27AA (underlined).

```
DQTVSDNELQ EMSNQGSKYV NKEIQNAVNG VKQIKTLIEK TNEERKTLIS NLEEAKKKKE
DALNETRESE TKLKELPGVC NETMMALWEE CKPCLKQTCM KFYARVCRSG SGLVGRQLEE
FLNQSSPFYF WMNGDRIDSL LENDRQQTHM LDVMQDHF SR ASSIIDELFQ DRFFTREPQD
TYHYLPFSLP HRRPHFFFPK SRIVRSLMPF SPYEPLNFHA MFQPFLEMIH EAQQAMD IHF
HSPAFQHPPT EFIREGDDDR TVCREIRHNS TGCLR MKDQC DKCREILSVD CSTNNPSQAK
LRRELDLQ VAERLTRKYN ELLKSYQWKM LNTSSLLEQL NEQFNWVSRL ANLTQGEDQY
YLRVTTVASH TSDSDVPSGV TEVVVKLFDS DPITVTVPVE VSRKNPKFME TVA EKALQEY
RKKHREEGSL GSGWHPQFE KTGH HHHHHH HGGQ
```

Purification Method: Ni-NTA chromatography.

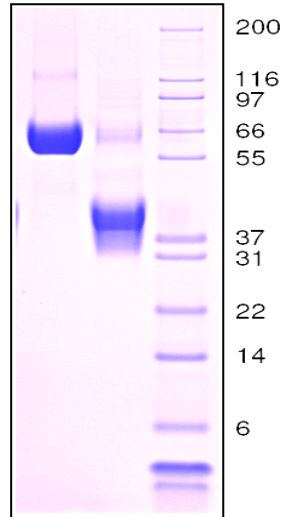
Source: 293 cell line (Human embryonic kidney)

Protein Content: 0.1 mg (determined by BCA)

Formulation: Filtered (0.4 micron) and lyophilized PBS, pH 7.5

Reconstitution: Add 0.2 ml of deionized H₂O and let the lyophilized pellet dissolve completely.

Purity: Purity of the recombinant Human Clusterin .



SDS-PAGE separation of His-tagged rHuClusterin (HEK), 10µg / lane
(1.nonreduced sample, 2.reduced sample, 3.M.W. std)

Storage: Store lyophilized protein at -20°C. Aliquot the product after reconstitution to avoid repeated freezing/thawing cycles. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after two weeks at 4°C.

Stability/Shelf Life: The lyophilized protein remains stable until the expiry date when stored at -20°C.

Quality Control Test: BCA - to determine content of the protein
SDS PAGE - to determine purity of the protein

Applications: ELISA, Western blotting

References:

- Trougakos IP, Gonos ES. Functional analysis of clusterin/apolipoprotein J in cellular death induced by severe genotoxic stress. *Ann N Y Acad Sci.* 2004 Jun;1019:206-10.
- Carver JA, Rekas A, Thorn DC, Wilson MR. Small heat-shock proteins and clusterin: intra- and extracellular molecular chaperones with a common mechanism of action and function? *IUBMB Life.* 2003 Dec; 55(12): 661-8. Review.
- Min BH, Kim BM, Lee SH, Kang SW, Bendayan M, Park IS. Clusterin expression in the early process of pancreas regeneration in the pancreatectomized rat. *J Histochem Cytochem.* 2003 Oct; 51(10): 1355-65.
- Park JH, Park JS, Ju SK, Lee KB, Park YK, Kang MH, Na SY, You KH. Clusterin mRNA expression in apoptotic and activated rat thymocytes. *Cell Res.* 2003 Feb; 13(1): 49-58.
- Jones SE, Jomary C. Clusterin. *Int J Biochem Cell Biol.* 2002 May; 34(5): 427-31. Review.

Note: This product is for research use only.
MSDS: This product does not contain irritating, toxic or infectious substances.

Manufacturer:

BioVendor Laboratory Medicine, Inc., CTPark Modrice, Evropska 873, 664 42 Modrice, Czech Republic
Phone: +420-549 124 185, Fax: +420-549 211 460, e-mail: info@biovendor.com, <http://www.biovendor.com>

BioVendor GmbH, Im Neuenheimer Feld 583, D-69120 Heidelberg, Germany
Phone.: +49-6221 433 9100, Fax: +49 6221 433 9111, e-mail: roth@biovendor.com

BioVendor, LLC, 1463 Sand Hill Road, Suite 227, Candler, NC 28715, USA
Phone: +1-828 670 7807, +1-800 404 7807, Fax: +1-828 670 7809, e-mail: slee@biovendor.com

BioVendor Laboratories Ltd, Room 4008, Hong Kong Plaza, No. 188, Connaught Road West, Hong Kong, CHINA
Phone: +85-22 819 9754, Fax: +85-22 823 2523, e-mail: lu@biovendor.com

BioVendor Laboratories Ltd, Room 2405, YiYa Tower, TianYu Garden, No.150, Lihe Zhong Road, Guang Zhou, Mainland CHINA
Phone: +86-20 3884 0399 ,3884 0386, Fax: +86-20 3884 0386, e-mail: jhsu@biovendor.com