

Product Specification Sheet

Cu-Chaperone protein for SOD (CCS) Antibodies

Cat. # CCS11-P	Mouse CCS control blocking peptide FORM: Soln	Lyophilized.	SIZE: 100 ug
Cat. # CCS11-A	Rabbit Anti-Mouse CCS IgG, aff pure FORM: Soln	Lyophilized.	SIZE: 100 ug

Highly reactive and potentially dangerous reactive oxygen species (ROS) are normally produced within the cells, primarily from the mitochondrial respiratory chain where in excess electrons are donated to molecular oxygen (O₂) to generate peroxide anion (O₂⁻). Superoxide anion is reduced by the superoxide dismutase (SOD) to hydrogen peroxide (H₂O₂) and hydrogen peroxide is reduced to water (H₂O) by catalase, located primarily in the peroxisomes, and by glutathione peroxidase (GPx), located in the mitochondria and cytosol. Hydrogen peroxide, in the presence of transition metals, can be converted to the highly toxic hydroxyl radical (OH·) and all three of the ROS (O₂⁻, H₂O₂, and OH·) can damage macromolecules (proteins, DNA etc). The GPxs are commonly considered the most important for ROS defense since they have broader substrate specificities and stronger affinity for H₂O₂ than catalases.

Copper (Cu) is an essential metal that is required for normal physiological activities. It is also highly toxic. Therefore, it must be transported in non-reactive forms as it moves through the cellular compartments. The metallochaperone protein would deliver the Cu to acceptor protein such as Cu-Zn superoxide dismutase (SOD). The human Cu-Chaperone protein for SOD (CCS) is a homolog of yeast protein Lys7. CCS (human 274-aa, chromosome 11q13) is 47% identical with SOD1. The metal binding regions are more conserved between CCS and SOD1. CCS and SOD1 are distributed in an identical pattern throughout the cytoplasm and nucleus of mammalian cells. CCS protein is homodimer and heterodimer with SOD1. CCS binds 2 copper ion and 1 zinc per subunit. It also contains 1 HMA domain.

Source of Antigen and Antibodies

Antigen	15-aa peptide near the C-terminus of mouse CCS protein gene accession # Q9WU84 (designated CCS11-P or control peptide) coupled to KLH
Ab Host/type	Rabbit, Polyclonal, IgG (Cat # CCS11-A) purified over antigen column
Buffer	PBS pH 7.5, 0.1% BSA and 0.05% azide
2-ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	Cat # 20009-1, Rabbit (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Recommended Usage

Western Blotting (1-5 ug/ml of IgG ECL technique).

ELISA: Control antigen can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.1-1 ug/ml

Histochemistry & Immunofluorescence: Not tested.
Specificity & Cross-reactivity

Mouse CCS11-P peptide is 100% conserved in rat, 86% in human SOD3/EC-SOD. Antibody cross-reactivity in various species has not been studied. No significant reactivity is seen with SOD1 or SOD2 proteins. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: www.4adi.com/data/abblock.html).

General References: Wong PC (200) PNAS 97, 2886-2891; Moore SD (200) Cytogenet. Cell Genet. 88, 35-37; Casareno RLB (1998) JBC 273, 23625-23628; Culotta VC (1997) JBC 272, 23469-23475; Rae TD (1999) Science 284, 805-808; Subramaniam JR (2002) Nature Neurosci.

*This product is for In vitro research use only.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution
50 ug/50 ul lyophilized powder
Supplied in Buffer: PBS pH 7.4 and 0.05% azide
Reconstitute powder in PBS at 1 mg/ml

Control/blocking peptide

100 ug/100 ul solution
lyophilized powder
Supplied in Buffer: PBS, pH 7.5 and 0.05% sodium azide
Reconstitute powder PBS at 1 mg/ml

Storage

Short-term: unopened, undiluted liquid vials for less than a week at 4oC.

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder.

Related material available from ADI

Antibodies to SOD1-3, GST alpha, mu, pi Nitrotyrosine, MDA, HNE,

CCS11-A 61213A

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