

Product Specification Sheet

**Citrate synthase, mitochondrial (CS/CISY) Antibodies**

Cat. # CISY11-P	Mouse/human CISY Control/blocking Peptide	<b>SIZE:</b> 100 ug
Cat. # CISY11-S	Rabbit Anti-Mouse/human CISY antiserum	<b>SIZE:</b> 100 ul
Cat. # CISY11-A	Rabbit Anti-Mouse/human CISY antiserum (aff pure)	<b>SIZE:</b> 100 ug

The enzyme citrate synthase (E.C. 2.3.3.1 [previously 4.1.3.7]) is a pace-maker enzyme, as it controls the first committed step of the Krebs cycle, also called the citric acid cycle. Citrate synthase is localized within cells in the mitochondrial matrix, but is encoded by nuclear DNA rather than mitochondrial. It is synthesized using cytoplasmic ribosomes, then transported into the mitochondrial matrix. Citrate synthase is commonly used as a quantitative enzyme marker for the presence of intact mitochondria. Citrate synthase catalyzes the condensation reaction of the two-carbon acetate residue from acetyl coenzyme A and a molecule of four-carbon oxaloacetate to form the six-carbon citrate. Oxaloacetate will be regenerated after the completion of one round of the Krebs Cycle.

Human CS (chromosome 12p11-qter, 466-aa precursor, mature chain 28-466 aa) encodes a 466-amino acid protein with 95% homology to its pig homolog. CS enzyme, a homodimer, is located at the Mitochondrion matrix. Citrate synthase is found in nearly all cells capable of oxidative metabolism

**Source of Antigen and Antibodies**

<b>Antigen</b>	A 17-aa peptide from mouse CS (gene accession # Q4TTW8; 466 aa) and a 20-aa peptide from human CS (gene accession # O57390; 466-aa). The mixture of the two peptide is <b>Designated (CISY11-P or control/blocking peptide)</b> conjugated to KLH. <b>Epitope location</b> ~ N-terminus
<b>Ab Host/type</b>	Rabbit, polyclonal Unpurified antiserum (cat # CISY11-S) Aff pure IgG1 ( <b>cat #CISY11-A</b> ) purified over antigen-agarose column
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

**Form & Storage of Antibodies/Peptide Control**

**Antiserum (unpurified)**

100ul solution lyophilized powder  
Supplied in Buffer: 0.05% azide  
**Reconstitute** powder in 100 ul PBS

**Affinity pure IgG**

100 ug/100ul solution lyophilized powder  
Supplied in **Buffer:** PBS+0.1% BSA  
**Reconstitute powder** in PBS at 1mg/ml

**Control/blocking peptide**

100 ug/100 ul solution lyophilized powder  
Supplied in Buffer: PBS pH 7.5,  
**Reconstitute powder** in PBS at 1 mg/ml.

**Storage**

**Short-term:** unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

**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

**Recommended Usage**

**Western Blotting** (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique).

**ELISA:** Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

**Histochemistry & Immunofluorescence:** Not tested. We recommend the use of affinity purified antibody at 1-20 ug/ml in paraformaldehyde fixed sections of tissues.

**Specificity & Cross-reactivity**

Mouse and human CS antigenic peptides are highly conserved in many species: 100% in human, chimp, monkey, rabbit, opossum, canine, feline, horse, bovine, pig, zebra fish, drosophila, frog etc. Antibody cross-reactivity in various species has not been studied. 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: the web site).

**General References:** Goldenthal MJ (1998) Genome 41, 733-738; Winjen LMM (1977) Hum. Genet. 39, 339-344; .

**(2) Citations of ADI's Antibodies for citrate synthase**

Please search for publications at our web site..

Ojuka EO2003 FASEB J, 17: 675 - 681  
Jones TE 2003 Am J Physiol Endocrinol Metab, 284: 96 - 101  
Baar K 2002 FASEB J, 16: 1879 - 1886  
Baar K 2003 FASEB J, 17: 1666 - 1673.  
Horowitz J F2000 Am J Physiol Endocrinol Metab 279: 348E-355E

\*This product is for In vitro research use only.

**Related material available from ADI**

Pre-made rat/mouse human protein Blots

CISY11-S-A-P 70713A

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