ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

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

| | | |
|---|---|---|
| Cat. # CISY14-S | Mouse monoclonal Anti-Pig CISY protein IgG, aff pure | **SIZE**: 100 ug |
| Cat. # CISY13-C | Pig heart CISY protein semipure for Western | **SIZE**: 100 ul |

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

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|---|---|
| **Antigen** | Pig (swine) heart purified protein |
| **Ab Host/type** | Mouse, monoclonal purified IgG (cat # CISY14-M) |
| **2-ab** | Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available) |
| **-ve control** | Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as –ve control |

Pig citrate synthase protein was obtained from heart (semi pure ~85 Kda). For Western blot +ve control (**Cat # CISY13-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **CISY13**-C for good visibility with antibody Cat # **CISY13**-S. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **CISY13**-C solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly

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

**Antiserum (unpurified)**

100ul solution lyophilized powder

Supplied in Buffer: 0.05% azide

**Reconstitute** powder in 100 ul PBS

**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.

## Specificity & Cross-reactivity

This antibody is specific for citrate synthetase. It gives multiple bands in reduced blots of porcine citrate synthase, including a band at 85kDa Antibody cross-reactivity in various species has not been studied.

**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 EO 2003 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

CISY13-S 80602A


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