

Product Specification Sheet

Creatine Transporter 1 (CT1/CRT/CRTR)

Cat. CRT11-S	Rabbit Anti-Human Creatine transporter 1	SIZE: 100 ul
Cat. CRT11-A	Rabbit Anti- Human Creatine transporter 1 IgG (affinity pure)	SIZE: 100 ug
Cat. CRT11-P	Human Creatine transporter 1 Control peptide	SIZE: 100 ug

Creatine and creatine phosphate are essential for the maintenance of ATP levels in tissues with high and fluctuating energy demands such as skeletal muscle and brain. Creatine kinase catalyzes the reversible transfer of a phosphate from creatine phosphate to ADP regenerating ATP. In mammals, creatine is either synthesized by sequential reactions occurring in the kidney and liver or obtained from the diet. Muscle cells do not synthesize creatine, but take it up via a special sodium-dependent transporter, the creatine transporter (CRT). Inhibition of creatine transport in experimental animals causes muscle weakness. A specific uptake system for creatine has been demonstrated in skeletal muscle, human monocytes, macrophages, and astroglial-rich cultures. CRT exhibits significant homology to the Na⁺ and Cl⁻-dependent GABA/norepinephrine (GAT-1/norepinephrine transporter) gene family of neurotransmitter transporters. All members of this family are predicted to contain 12-membrane-spanning domains, to contain a large extracellular loop containing sites for N-linked glycosylation between the third and fourth transmembrane domains, and to have the amino and carboxyl termini facing the cytoplasmic side of the membrane. At least two CRT have been cloned and expressed and characterized. CRT1 or CT1 (mouse, human 635 aa, chromosome X28) is expressed in kidney, muscle, brain, and other tissues (1), while CT2 (human 426-aa, chromosome 16p11.2) is testis specific (2).

Source of Antigen and Antibodies

Antigen	20-aa peptide from human CRT1 (1); Designation (CRT11-P, control peptide) conjugated to KLH; epitope location ~ N-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal Unpurified antiserum (cat # CRT11-S) and aff pure IgG (cat # CRT11-A) purified over antigen-agarose column
2-ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	# 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 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). CRT is found in ~70 and 55 Kda sizes. (refs 2)

ELISA (1:100K; using 50-100 ng control peptide/well).

Histochemistry & Immunofluorescence: Not tested. we recommend the use of affinity purified antibody at 2-20 ug/ml in formaldehyde fixed tissue.

Specificity & Cross-reactivity

The human CRT11-P sequence shows 100% homology with the rat and rabbit, and 90% with the bovine CRT1. CRT11-P has no significant sequence homology with CRT2/CT2. Antibody crossreactivity in various species is not established. 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: (1) Nash SR et al (1994) Recept. Channels 2, 165-174; Sora I et al (1994) BBRC 204, 419-427; Sandoval N et al (1996) Genomics 35, 383-385; (2) Iyer G et al (1996) Genomics 34, 143-146.

(2) Citations of ADI's Antibodies (see web site for updated list)

Wang W et al, 2002, Am J Physiol Endocrinol Metab, 285, 1046-1054 WB, IP, rat muscle
Wang W et al 2002 AJPE endo 2002, 5, E1046-E1054 WB, IP, rat muscles
Wang W et al 2002 Surgery. 132(2):334-340

*This product is for in vitro research use only.

CRT11-S-A-P 71209A

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