

## DESCRIPTION

<b>Species Reactivity</b>	Human/Mouse/Rat
<b>Specificity</b>	Detects human CART in direct ELISAs and Western blots. Also recognizes a truncated recombinant human CART containing amino acids 69-116.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human CART Gln28-Leu116 Accession # Q16568
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the Technical Information section on our website.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	0.1 µg/mL	Recombinant Human CART
<b>Immunohistochemistry</b>	5-15 µg/mL	Perfusion fixed frozen sections of mouse brain (cortex)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

CART, also known as cocaine and amphetamine-regulated transcript, is a 10 kDa secreted polypeptide produced by neuronal cell types in a variety of locations. In human, the molecule is synthesized as a 116 amino acid (aa) precursor with a 27 aa signal sequence and an 89 aa mature segment. There are six C-terminal cysteines that form three intrachain disulfide bonds, and the potential exists for both sulfation and phosphorylation in the N-terminal region. There are numerous monobasic and dibasic sites for enzyme cleavage, and multiple, presumably proteolytically-generated short forms are known to exist. These include a 5K, 48 aa peptide (CART 42-89), and a 4.3K, 40 aa peptide (CART 49-89). Human CART is 98% aa identical to both mouse and rat CART (1-89). Although CART suppresses feeding and increases pain tolerance, there would appear to be differences between the various forms of CART on other functions. In addition, anatomical location is associated with differing lengths of CART. For example, 89 aa and 79 aa forms are found in the adrenal, while 48 aa and 44 aa forms are found in the hypothalamus.

## References:

1. Douglass, J. & S. Daoud (1996) *Gene* **169**:241.
2. Douglass, J. *et al.* (1995) *J. Neurosci.* **15**:247.
3. Adams, L.D. *et al.* (1999) *Brain Res.* **848**:137.
4. Thim, L. *et al.* (1999) *Proc. Natl. Acad. Sci. USA* **96**:2722.
5. Bannon, A.W. *et al.* (2001) *J. Pharmacol. Exp. Ther.* **299**:1021.
6. Kuhar, M.J. & L.L. Yoho (1999) *Synapse* **33**:163.
7. Thim, L. *et al.* (1998) *FEBS Lett.* **428**:263.