

DESCRIPTION

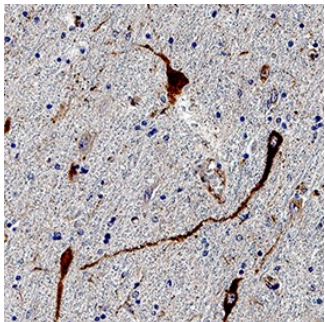
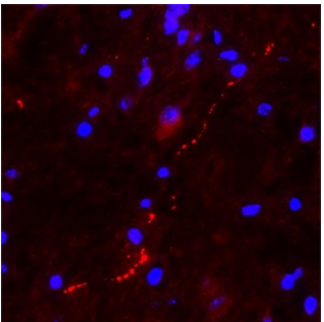
Species Reactivity	Human/Mouse/Rat
Specificity	Detects human CART in direct ELISAs and Western blots. Also recognizes a truncated recombinant human CART containing amino acids 69-116.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human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

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.

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Human CART
Immunohistochemistry	1-15 µg/mL	Immersion fixed paraffin-embedded sections of human brain (Hypothalamus) tissue and perfusion fixed frozen sections of mouse brain tissue

DATA

<p>Immunohistochemistry</p>  <p>Detection of CART in Human Brain Hypothalamus Tissue. CART was detected in immersion fixed paraffin-embedded sections of human brain (Hypothalamus) tissue using Goat Anti-Human/Mouse/Rat CART Antigen Affinity-purified Polyclonal Antibody (Catalog # AF163) at 1 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to neurons. Staining was performed using our IHC Staining with VisUCyte HRP Polymer Detection Reagents.</p>	<p>Immunohistochemistry</p>  <p>CART in Mouse Brain Tissue. CART was detected in perfusion fixed frozen sections of mouse brain tissue using Goat Anti-Human/Mouse/Rat CART Antigen Affinity-purified Polyclonal Antibody (Catalog # AF163) at 5 µg/mL overnight at 4 °C. Tissue was stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to neurons. Staining was performed using our Fluorescent IHC Staining of Frozen Tissue Sections.</p>
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PREPARATION AND STORAGE

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

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.