ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Human/Rat Cocaine- and Amphetamine Related Transcript (CART/CARP) Peptides

Cat# CART51-P	Human/Rat Cocaine Amphetamine Rel. Transcript (CART) 1-39aa	100 ug
Cat# CART52-P	Human Cocaine Amphetamine Rel. Transcript (CART) 55-102aa	100 ug
Cat# CART53-P	Human Cocaine Amphetamine Rel. Transcript (CART) 62-102aa	100 ug
Cat# CART54-P	Human Cocaine Amphetamine Rel. Transcript (CART) 62-76aa	500 ug

Cocaine- and Amphetamine Related Transcript (CART) was initially identified using PCR differential display as mRNA whose levels in the brain was specifically induced by psychomotor stimulants such as cocaine and amphetamine (1). CART encodes a secretory single chain polypeptide of 129 AA or 116 AA protein due to the usage of alternate splicing and processing. The first 27 AA represents the hydrophobic core indicative of signal peptide. The CART protein also has several basic amino acids near the 54-66 residues with a potential to form multiple proteolytic forms. CART mRNA was specially enriched in the hypothalamus. In the striatum, CART expression was induced 4-5 fold by cocaine and amphetamine. CART is highly conserved between human and mouse (95% amino acid homology); CART gene was localized to human chromosome 5 (2).

Most recently, CART has been found to control satiety modulating the actions of two key regulators of food intake, leptin and NPY. Starvation decreases CART levels in the arcuate nucleus (3). Obese animals have virtually no CART. Peripheral administration of leptin in obese animals induces CART. Intracereberoventricular injection of recombinant CART inhibits both normal and starvation-induce feeding, and completely inhibits NPY-induce feeding. Immunoneutralization of CART by administration of anti-CART resulted into higher food intake suggesting that CART is an endogenous regulator of food intake. CART 55-102 (numbers corresponds to the predicted signal-peptide-cleavage site in the long form of CART) was physiologically active in inhibiting feeding in normal rats (3).

Source of Antigen

Human/Rat CART peptides were synthesized, cyclized, and purified by HPLC (~95%,).

Cat# CART51-P (1-39aa)

Sequence:
Glp-Glu-Asp-Ala-Glu-Leu-Gln-Pro-Arg-Ala-Leu-Asp-Ile-Tyr-Ser-Ala-Val-Asp-Asp-Ala-Ser-His-Glu-Lys-Glu-Leu-Pro-Arg-Arg-Gln-Leu-Arg-Ala-Pro-Gly-Ala-Val-Leu-Gln
Mol Wt: 4406.9
Formula: $C_{188}H_{304}N_{57}O_{63}$
Disulfides:
Form: Powder
Solubility: DMF/Water (1 mg/ml)

#CART52-P (55-102 aa)

Sequence:
Val-Pro-Ile-Tyr-Glu-Lys-Lys-Tyr-Gly-Gln-Val-Pro-Met-Cys-Asp-Ala-Gly-Glu-Gln-Cys-Ala-Val-Arg-Lys-Gly-Ala-Arg-Ile-Gly-Lys-Leu-Cys-Asp-Cys-Pro-Arg-Gly-Thr-Ser-Cys-Asn-Ser-Phe-Leu-Leu-Lys-Cys-Leu
Mol Wt: 5245.3
Formula: $C_{225}H_{365}N_{65}O_{65}S_7$
Disulfides: Cys_{74}-Cys_{94}, Cys_{68}-Cys_{86}, Cys_{88}-Cys_{101}
Form: Powder
Solubility: DMF/Water (1 mg/ml)

#CART53-P (62-102 aa)

Sequence:

Tyr-Gly-Gln-Val-Pro-Met-Cys-Asp-Ala-Gly-Glu-Gln-Cys-Ala-Val-Arg-Lys-Gly-Ala-Arg-Ile-Gly-Lys-Leu-Cys-Asp-Cys-Pro-Arg-Gly-Thr-Ser-Cys-Asn-Ser-Phe-Leu-Leu-Lys-Cys-Leu
Mol Wt: 4387.3
Formula: $C_{183}H_{298}N_{56}O_{55}S_7$
Disulfides: Cys_{74}-Cys_{94}, Cys_{68}-Cys_{86}, Cys_{88}-Cys_{101}
Form: Powder
Solubility: DMF/Water (1 mg/ml)

#CART54-P (62-76 aa)

Sequence:

Tyr-Gly-Gln-Val-Pro-Met-Cys-Asp-Ala-Gly-Glu-Gln-Cys-Ala-Val
Mol Wt: 1568.8
Formula: $C_{64}H_{97}N_{17}O_{23}S_3$
Disulfides: Cys_{68}-Cys_{74}
Form: Powder
Solubility: DMF/Water (1 mg/ml)

Storage: Store powder at -20oC for up to 6 months.

After reconstitution, store solution in small aliquots at -20oC for 3-6 months. Do not freeze and thaw or store diluted solutions.

Shipping: 4oC for solutions and room temp for lyophilized items.

General References: (1). Douglass J et al (1995) J Neurosci. 15, 2471; (2). Douglass J and Daoud S (1996) Gene 169, 241; (3). Kristensen P et al (1998) Nature 393, 72.

*This product is for In vitro research use only.

Related material available from ADI

Anti-Agouti, AGRP, Tubby, TUB, TULP1, TULP2, Leptin, and Melanocortin receptors 91-5), Orexin, CART

Rabbit and Chicken antibodies to CART and Biotinylated CART.

ReadyBlot Brain Protein Explorer (Proteins from 12 different region of mouse/rat brain provided on the blot)

Western Blot Recycling Kit (Strips blots in 5 minutes) and re-use the same blot with multiple antibodies
CART13-14-P-1 71218A

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