SANTA CRUZ BIOTECHNOLOGY, INC.

CTRL (G-13): sc-132241

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Chymotrypsin is a digestive enzyme that is synthesized in the pancreas and can perform proteolysis by cleaving peptides at the carboxyl side of tyrosine, tryptophan and phenylalanine, all of which contain aromatic rings. Chymotrypsin uses a powerful nucleophile, namely the serine 195 residue located in its active site, to attack unreactive carbonyl groups on select amino acids. This reaction forms an enzyme-substrate intermediate that is eventually cleaved, returning chymotrypsin to its original enzymatic state and releasing a cleaved peptide. CTRL (chymotrypsin-like) is a 264 amino acid protein that contains one peptidase S1 domain and may exhibit chymotrypsin-like activity. Due to its expression in pancreatic and intestinal tissue, CTRL is thought to function as a digestive enzyme that, like chymotrypsin, may be involved in protein degradation pathways.

REFERENCES

1. Heidtmann, H.H. and Travis, J. 1993. A novel chymotrypsin-like serine proteinase from human lung. Biol. Chem. Hoppe-Seyler 374: 871-875.
2. Reseland, J.E., et al. 1997. A novel human chymotrypsin-like digestive enzyme. J. Biol. Chem. 272: 8099-8104.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 118888. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Murakami, Y. and Hirata, A. 2005. Poly(ethylene glycol)-α-chymotrypsin complex catalytically active in anhydrous isooctane. J. Biosci. Bioeng. 88: 441-443.
5. Matsumoto, M. and Kondo, K. 2005. Enhanced thermostability of α-chymotrypsin enclosed in inorganic microcapsules. J. Biosci. Bioeng. 92: 197-199.
6. You, C.C., et al. 2005. Contrasting effects of exterior and interior hydrophobic moieties in the complexation of amino acid functionalized gold clusters with α-chymotrypsin. Org. Lett. 7: 5685-5688.
7. Ahmed, E., et al. 2006. Chymotrypsin inhibitory triterpenoids from *Silybum marianum*. Chem. Pharm. Bull. 54: 103-106.
8. Hudáky, P. and Perczel, A. 2006. A self-stabilized model of the chymotrypsin catalytic pocket. The energy profile of the overall catalytic cycle. Proteins 62: 749-759.
9. Simard, J.M., Szymanski, B. and Rotello, V.M. 2006. Reversible regulation of chymotrypsin activity using negatively charged gold nanoparticles featuring malonic acid termini. Med. Chem. 1: 153-157.

CHROMOSOMAL LOCATION

Genetic locus: CTRL (human) mapping to 16q22.1; Ctrl (mouse) mapping to 8 D3.

SOURCE

CTRL (G-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CTRL of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-132241 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CTRL (G-13) is recommended for detection of CTRL of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CTRL (G-13) is also recommended for detection of CTRL in additional species, including canine.

Suitable for use as control antibody for CTRL siRNA (h): sc-93314, CTRL siRNA (m): sc-142627, CTRL shRNA Plasmid (h): sc-93314-SH, CTRL shRNA Plasmid (m): sc-142627-SH, CTRL shRNA (h) Lentiviral Particles: sc-93314-V and CTRL shRNA (m) Lentiviral Particles: sc-142627-V.

Molecular Weight of CTRL: 27 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.