SANTA CRUZ BIOTECHNOLOGY, INC.

CTRL (K-22): sc-101926

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

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2. Reseland, J.E., et al. 1997. A novel human chymotrypsin-like digestive enzyme. J. Biol. Chem. 272: 8099-8104.
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4. Murakami, Y., et al. 2005. Poly(ethylene glycol)-α-chymotrypsin complex catalytically active in anhydrous isooctane. J. Biosci. Bioeng. 88: 441-443.
5. Matsumoto, M., et al. 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. Hudáky, P., et al. 2006. A self-stabilized model of the chymotrypsin catalytic pocket. The energy profile of the overall catalytic cycle. Proteins 62: 749-759.
8. Simard, J.M., et al. 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 (K-22) is a purified rabbit polyclonal antibody raised against CTRL of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

CTRL (K-22) is recommended for detection of CTRL of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

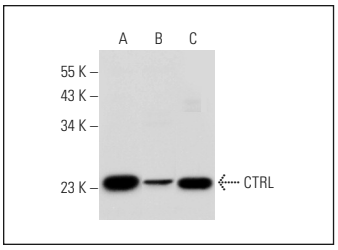
Molecular Weight of CTRL: 27 kDa.

Positive Controls: NCI-H292 whole cell lysate: sc-364179, PANC-1 whole cell lysate: sc-364380 or c4 whole cell lysate: sc-364186.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



CTRL (K-22): sc-101926. Western blot analysis of CTRL expression in NCI-H292 (**A**), PANC-1 (**B**) and c4 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kundumani-Sridharan, V., et al. 2012. Novel interactions between NFATc1 (nuclear factor of activated T cells c1) and STAT-3 (signal transducer and activator of transcription-3) mediate G protein-coupled receptor agonist, thrombin-induced biphasic expression of cyclin D1, with first phase influencing cell migration and second phase directing cell proliferation. J. Biol. Chem. 287: 22463-22482.

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.