SANTA CRUZ BIOTECHNOLOGY, INC.

Pepsin A (Q-17): sc-51183

BACKGROUND

Pepsin is one of the main proteolytic enzymes secreted by the gastric mucosa. Pepsin consists of a single polypeptide chain and arises from its precursor, pepsinogen, by removal of a 41 amino acid segment from the N-terminus. Pepsinogen is synthesized in the stomach lining, and hydrochloric acid, also produced by the gastric mucosa, is necessary to convert the inactive enzyme and to maintain the optimum acidity (pH 1-3) for pepsin function. Pepsin is particularly effective in cleaving peptide bonds involving aromatic amino acids. Pepsin shows extremely broad specificity; although bonds involving phenylalanine and leucine are preferred, many others are also cleaved to some extent. Pepsin A is a member of the subfamily A1 within the pepsin family and is the predominant endopeptidase in the gastric juice of vertebrates. Pepsin A is inhibited by ovUS-1, a uterine serpin.

REFERENCES

1. Carles, C. and Martin, P. 1985. Kinetic study of the action of bovine chymosin and Pepsin A on bovine κ-casein. Arch. Biochem. Biophys. 242: 411-416.
2. Okoniewska, M., et al. 1999. The role of the flap residue, Threonine 77, in the activation and catalytic activity of Pepsin A. Protein Eng. 12: 55-61.
3. Kageyama, T. 2004. Role of S'1 loop residues in the substrate specificities of Pepsin A and chymosin. Biochemistry 43: 15122-15130.
4. Akkerdaas, J.H., et al. 2005. IgE binding to pepsin-digested food extracts. Int. Arch. Allergy Immunol. 138: 203-208.
5. Ibrahim, H.R., et al. 2005. Processing of lysozyme at distinct loops by pepsin: a novel action for generating multiple antimicrobial peptide motifs in the newborn stomach. Biochim. Biophys. Acta 1726: 102-114.
6. Tagliazucchi, D., et al. 2005. Effect of some phenolic compounds and beverages on pepsin activity during simulated gastric digestion. J. Agric. Food Chem. 53: 8706-8713.
7. Schimek, E.M., et al. 2005. Gastrointestinal digestion of Bet v 1-homologous food allergens destroys their mediator-releasing, but not T cell-activating, capacity. J. Allergy Clin. Immunol. 116: 1327-1333.

CHROMOSOMAL LOCATION

Genetic locus: PGA3/PGA4/PGA5 (human) mapping to 11q12.2.

SOURCE

Pepsin A (Q-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Pepsin A 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-51183 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Pepsin A (Q-17) is recommended for detection of Pepsin A and Pepsinogen A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range, immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Pepsin A siRNA (h): sc-61317, Pepsin A shRNA Plasmid (h): sc-61317-SH and Pepsin A shRNA (h) Lentiviral Particles: sc-61317-V.

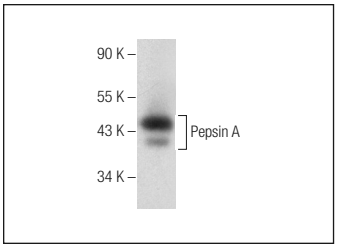
Molecular Weight of Pepsin A: 42 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human stomach tissue extract: sc-363780.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



Pepsin A (Q-17): sc-51183. Western blot analysis of Pepsin A expression in human stomach tissue extract.

STORAGE

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