

Pepsin C (E-9): sc-374044

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, and although bonds involving phenylalanine and leucine are preferred, many others are also cleaved to some extent. The amino acid composition of Pepsin C differs from those of pepsinogen and pepsin especially in the content of basic amino acids, glutamic acid, aspartic acid, leucine and isoleucine.

REFERENCES

1. Ryle, A.P., et al. 1966. Pepsinogen C and Pepsin C. Further purification and amino acid composition. *Biochem. J.* 101: 176-183.
2. Ryle, A.P., et al. 1968. The substrate specificity of Pepsin C. *Biochem. J.* 110: 4P.
3. Kay, J., et al. 1971. An active site peptide from Pepsin C. *Biochem. J.* 123: 75-82.
4. Kageyama, T., et al. 1976. Pepsinogen C and Pepsin C from gastric mucosa of Japanese monkey. Purification and characterization. *J. Biochem.* 80: 983-992.

CHROMOSOMAL LOCATION

Genetic locus: PGC (human) mapping to 6p21.1; Pgc (mouse) mapping to 17 C.

SOURCE

Pepsin C (E-9) is a mouse monoclonal antibody raised against amino acids 122-177 mapping within an internal region of Pepsin C of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Pepsin C (E-9) is available conjugated to agarose (sc-374044 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374044 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374044 PE), fluorescein (sc-374044 FITC), Alexa Fluor® 488 (sc-374044 AF488), Alexa Fluor® 546 (sc-374044 AF546), Alexa Fluor® 594 (sc-374044 AF594) or Alexa Fluor® 647 (sc-374044 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374044 AF680) or Alexa Fluor® 790 (sc-374044 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

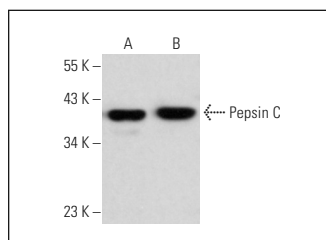
Pepsin C (E-9) is recommended for detection of Pepsin C of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Pepsin C siRNA (h): sc-61318, Pepsin C siRNA (m): sc-61319, Pepsin C shRNA Plasmid (h): sc-61318-SH, Pepsin C shRNA Plasmid (m): sc-61319-SH, Pepsin C shRNA (h) Lentiviral Particles: sc-61318-V and Pepsin C shRNA (m) Lentiviral Particles: sc-61319-V.

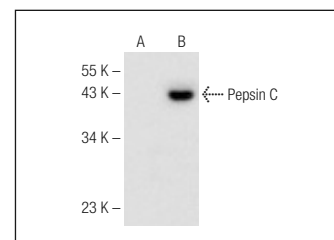
Molecular Weight of Pepsin C: 40 kDa.

Positive Controls: rat stomach extract: sc-394508, human Pepsin C transfected HEK293T whole cell lysate or human stomach extract: sc-363780.

DATA



Pepsin C (E-9): sc-374044. Western blot analysis of Pepsin C expression in human stomach (A) and rat stomach (B) tissue extracts.



Pepsin C (E-9): sc-374044. Western blot analysis of Pepsin C expression in non-transfected (A) and human Pepsin C transfected (B) HEK293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wu, W., et al. 2016. A simple biomarker scoring matrix for early gastric cancer detection. *Proteomics* 16: 2921-2930.
2. Yang, C., et al. 2020. Molecular mechanisms of Wischnewski spot development on gastric mucosa in fatal hypothermia: an experimental study in rats. *Sci. Rep.* 10: 1877.
3. Liu, X.Y., et al. 2022. Activation of dopamine D₂ receptor promotes pepsinogen secretion by suppressing somatostatin release from the mouse gastric mucosa. *Am. J. Physiol. Cell Physiol.* 322: C327-C337.

RESEARCH USE

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

PROTOCOLS

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