

plasma kallikrein (G-20): sc-18658

BACKGROUND

Plasma prekallikrein is a glycoprotein that is synthesized in the liver and is secreted into the blood as a single polypeptide chain that participates in the surface-dependent activation of blood coagulation, fibrinolysis, kinin generation and inflammation. The human plasma prekallikrein gene maps to chromosome 4q35.2 and encodes a serine proteinase, known as Fletcher Factor. Plasma prekallikrein converts to plasma kallikrein by Factor XII A through the cleavage of an internal Arg-Ile bond. Plasma kallikrein releases bradykinin when activated by gram-negative septicemia or irreversible hemorrhagic shock. Plasma prekallikrein activation induces the cleavage of high molecular weight kininogen (HK) and subsequent liberation of bradykinin. Cleaved HK is antiangiogenic, and bradykinin stimulates tPA liberation and nitric oxide formation. Activated plasma kallikrein promotes single-chain urokinase activation and subsequent plasminogen activation. Kininogens and their breakdown products are antithrombin agents.

REFERENCES

1. Mills, I.H. 1979. Kallikrein, kininogen and kinins in control of blood pressure. *Nephron* 23: 61-71.
2. Colman, R.W., Sartor, R.B., Adam, A.A., DeLa Cadena, R.A. and Stadnicki, A. 1998. The plasma kallikrein-kinin system in sepsis, inflammatory arthritis, and enterocolitis. *Clin. Rev. Allergy Immunol.* 16: 365-384.
3. Schmaier, A.H. 2000. Plasma kallikrein/kinin system: a revised hypothesis for its activation and its physiologic contributions. *Curr. Opin. Hematol.* 7: 261-265.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 229000. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. LocusLink Report (LocusID: 3818). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: KLKB1 (human) mapping to 4q35.2; Klkb1 (mouse) mapping to 8 B1.1.

SOURCE

plasma kallikrein (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of plasma kallikrein 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-18658 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

plasma kallikrein (G-20) is recommended for detection of plasma prekallikrein and plasma kallikrein heavy chain 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); non cross-reactive with plasma kallikrein light chain.

plasma kallikrein (G-20) is also recommended for detection of plasma prekallikrein and plasma kallikrein heavy chain in additional species, including bovine.

Suitable for use as control antibody for plasma kallikrein siRNA (h): sc-40411, plasma kallikrein siRNA (m): sc-40412, plasma kallikrein shRNA Plasmid (h): sc-40411-SH, plasma kallikrein shRNA Plasmid (m): sc-40412-SH, plasma kallikrein shRNA (h) Lentiviral Particles: sc-40411-V and plasma kallikrein shRNA (m) Lentiviral Particles: sc-40412-V.

Molecular Weight of plasma kallikrein precursor: 71 kDa.

Molecular Weight of plasma kallikrein HC: 46 kDa.

Molecular Weight of plasma kallikrein LC: 31 kDa.

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.

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.