SANTA CRUZ BIOTECHNOLOGY, INC.

Thrombin (K-20): sc-16972

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Hemostasis following tissue injury involves the deployment of essential plasma procoagulants (Prothrombin and Factors X, IX, V and VIII), which are involved in a blood coagulation cascade that leads to the formation of insoluble Fibrin clots and the promotion of platelet aggregation. Coagulation Factor 2, also designated Prothrombin or Factor 2, is proteolytically cleaved to form Thrombin in the first step of the coagulation cascade. Thrombin is a serine protease that influences cellular mitogenesis, tumor growth, metastasis, and can initiate platelet aggregation and secretion. Thrombin also influences vascular integrity during development and postnatal life. During the mechanism of wound healing, Thrombin may coordinate connective tissue proteins by stimulating fibroblast procollagen production.

REFERENCES

1. Davie, E.W., et al. 1975. Basic mechanisms in blood coagulation. Annu. Rev. Biochem. 44: 799-829.
2. Royle, N.J., et al. 1987. Human genes encoding prothrombin and ceruloplasmin map to 11p11-q12 and 3q21-24, respectively. Somat. Cell Mol. Genet. 13: 285-292.
3. Davie, E.W., et al. 1991. The coagulation cascade: initiation, maintenance and regulation. Biochemistry 30: 10363-10370.

CHROMOSOMAL LOCATION

Genetic locus: F2 (human) mapping to 11p11.2; F2 (mouse) mapping to 2 E1.

SOURCE

Thrombin (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Thrombin 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-16972 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Thrombin (K-20) is recommended for detection of Prothrombin precursor and mature chain, Thrombin LC and, to a lesser extent, Thrombin HC of mouse, rat 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)], 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 activation peptide I or II.

Thrombin (K-20) is also recommended for detection of Prothrombin precursor and mature chain, Thrombin LC and, to a lesser extent, Thrombin HC in additional species, including equine, canine and porcine.

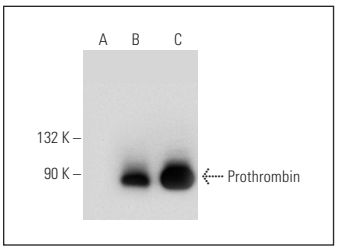
Molecular Weight of Thrombin: 74 kDa.

Positive Controls: Prothrombin (h): 293T Lysate: sc-177784, human platelet extract: sc-363773 or Prothrombin (m): 293T Lysate: sc-127389.

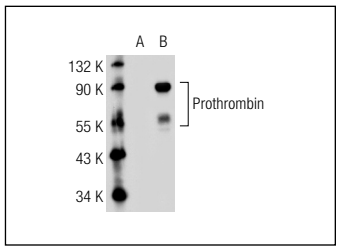
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Thrombin (K-20): sc-16972. Western blot analysis of Prothrombin expression in non-transfected: sc-117752 (**A**), human Prothrombin transfected: sc-177784 (**B**) 293T whole cell lysates and human platelet extract (**C**).



Thrombin (K-20): sc-16972. Western blot analysis of Prothrombin expression in non-transfected: sc-117752 (**A**) and mouse Prothrombin transfected: sc-127389 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zernecke, A., et al. 2006. CD73/ecto-5'-nucleotidase protects against vascular inflammation and neointima formation. Circulation 113: 2120-2127.
2. O'Brien, M., et al. 2008. Expression of prothrombin and protease activated receptors in human myometrium during pregnancy and labor. Biol. Reprod. 78: 20-26.
3. Danckwardt, S., et al. 2011. p38 MAPK controls prothrombin expression by regulated RNA 3' end processing. Mol. Cell 41: 298-310.
4. Tseng, W.L., et al. 2014. Impaired thrombin generation in Reelin-deficient mice: a potential role of plasma Reelin in hemostasis. J. Thromb. Haemost. 12: 2054-2064.

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.