SANTA CRUZ BIOTECHNOLOGY, INC.

KLK7 (1407): sc-80148

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Kallikreins (KLKs) belong to the serine protease family of proteolytic enzymes. Human pancreatic/renal KLK encodes for the KLK1 enzyme, which is involved in posttranslational processing of polypeptide precursors. The function of the other members of KLK gene family is still currently unknown, but evidence suggests that many KLKs are implicated in carcinogenesis. The human KLK gene family consists of 15 serine proteases. The human KLK genes are clustered on chromosome 19q13. Unlike other kalllikreins, the KLK4-15 encoded proteases are less related and do not contain a conventional KLK loop. Clusters of genes exhibit high prostatic (KLK2-4, KLK15) or pancreatic (KLK6-13) expression. KLK2 is also known as glandular kallikrein 2, tissue kallikrein, or HGK-1 and KLK3 is known as prostate-specific antigen (PSA). Both KLK2 and KLK3 have important applications in prostate cancer and breast cancer diagnostics. KLK4, KLK5, KLK9, KLK13, KLK12 and KLK14 have been previously known as KLK-L1, KLK-L2, KLK-L3, KLK-L4, KLK-L5 and KLK-L6, respectively. Many of the KLKs are regulated by steroid hormones and a few of them, specifically KLK3, KLK6 and KLK10 are known to be downregulated in breast and other cancers.

REFERENCES

1. Diamandis, E.P., et al. 2000. The new human kallikrein gene family: implications in carcinogenesis. Trends Endocrinol. Metab. 11: 54-60.
2. Yousef, G.M., et al. 2000. Genomic organization of the human kallikrein gene family on chromosome 19q13.3-q13.4. Biochem. Biophys. Res. Commun. 276: 125-133.
3. Shimizu-Okabe, C., et al. 2001. Expression of the kallikrein gene family in normal and Alzheimer's disease. Neuroreport 12: 27447-27451.
4. Yousef, G.M., et al. 2001. Cloning of a new member of the human kallikrein gene family, KLK14, which is downregulated in different malignancies. Cancer Res. 61: 3425-3431.
5. Clements, J., et al. 2001. The expanded human kallikrein (KLK) gene family: genomic organization, tissue-specific expression and potential functions. Biol. Chem. 382: 5-14.
6. Yousef, G.M., et al. 2001. Molecular cloning of the human kallikrein 15 gene (KLK15). Upregulation in prostate cancer. J. Biol. Chem. 276: 53-61.

CHROMOSOMAL LOCATION

Genetic locus: KLK7 (human) mapping to 19q13.41.

SOURCE

KLK7 (1407) is a mouse monoclonal antibody raised against amino acids 23-252 of KLK7 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

RESEARCH USE

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

APPLICATIONS

KLK7 (1407) is recommended for detection of KLK7 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; non cross-reactive with KLK1, 3-6 or 8-15.

Suitable for use as control antibody for KLK7 siRNA (h): sc-41533, KLK7 shRNA Plasmid (h): sc-41533-SH and KLK7 shRNA (h) Lentiviral Particles: sc-41533-V.

Molecular Weight of KLK7: 27 kDa.

SELECT PRODUCT CITATIONS

1. Tamir, A., et al. 2014. Kallikrein family proteases KLK6 and KLK7 are potential early detection and diagnostic biomarkers for serous and papillary serous ovarian cancer subtypes. J. Ovarian Res. 7: 109.
2. Nasim, F.U., et al. 2016. Indirect back-titration ELISA: a new format for estimation of human tissue kallikreins. Appl. Immunohistochem. Mol. Morphol. 24: 64-70.
3. Ejaz, S., et al. 2017. Down-regulation of hK7 in the sera of breast cancer and benign breast disease patients. Heliyon 3: e00356.

STORAGE

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

PROTOCOLS

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