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Certificate of Analysis and Data Sheet

Recombinant Human Kallikrein-1

Catalog No.	**Source:**
228-10996	*Pichia Pastoris*

Synonyms

KLK1, KLK-1, HK1, HK-1, KLKR, KLK6, Tissue Kallikrein, hKLK1, EC 3.4.21.35, Kidney/pancreas/salivary gland kallikrein, Kallikrein-1.

Introduction

Kallikreins are serine protease enzymes having various physiological functions.
Kallikreins are implicated in carcinogenesis and have potential as novel cancer disease biomarkers.
KLK1 is one of the fifteen kallikrein subfamily members located in a cluster on chromosome 19. KLK1 is functionally conserved in its ability to release the vasoactive peptide, Lys-bradykinin, from low molecular weight kininogen.

Human Kallikrein-1, also called as Kallidinogenase, Kininogenase or Kininogenin, is an active protein enzyme present in saliva, pancreatic juices, and urine that catalyzes the proteolysis of bradykininogen to bradykinin.

Kallikrein-1, which derived from human or porcine, have been used as drugs for a long time, they are mainly used in the treatment f light to medium hypertension and occlusion of cerebral and surrounding blood vessels.

KLK1 demonstrates both trypsin- and chymotrypsin-like selectivities with Tyr/Arg preferred at site P1, Ser/Arg strongly preferred at P1', and Phe/Leu at P2.

rs5517 in the KLK1 gene is considerably connected with hypertension in a Chinese Han population.
KLK1 is expressed de novo in endothelial cells and mediates relaxation of human umbilical veins. The K allele of KLK1 promoter and TT genotype of TGF-beta1 are a genetic KLK1 -130 GN and -128 G-C, and the defenselessness factor contributing to progressive renal descent in Taiwanese primary vesicoureteric reflux children.

Induction of KLK1 in carotid arteriosclerosis doesn’t lead to kallikrein-kinins pathway activation.
Transgenic rats expressing KLK1 have impaired renal response to acute volume expansion Endothelial cells synthesize and release active form of KLK1on the surface which is important function in maintenance of circulation homeostasis.
KLK1 participates in epidermal desquamation through cleavage of desmoglein 1 and regulation by lympho-epithelial Kazal-type-related inhibitor (LEKTI).

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Description

KLK1 Human Recombinant produced in Yeast is a single, glycosylated, polypeptide chain containing 238 amino acids and having a molecular mass of 28-32 kDa.
KLK1 Human Recombinant is purified by proprietary chromatographic techniques.

Physical Appearance

Sterile Filtered clear solution.

Formulation

The protein solution contains 1X PBS.

Stability

KLK1 although stable at 4°C for 3 weeks, should be stored desiccated below -18°C.
Please prevent freeze-thaw cycles.

Purity

Greater than 98.0% as determined by

(a) Analysis by RP-HPLC
(b) Analysis by SDS-PAGE

Amino acid sequence

The sequence of the first five N-terminal amino acids was determined and was found to be Ile-Val-Gly-Gly-Trp-Glu.

Biological Activity

Human Kallikrein-1 active Unit Definition: 1 unit will hydrolize 1 mole of H-D-Val-Leu-Arg-pNA(S-2266) per minute at pH 8.0 at 37°C Human Kallikrein-1 measured biological activity of no less than 5 Units/mg (S2266 method).