

Product Specification Sheet

Human Kininogen, Low mol. wt

Cat. # KINL15-N-50 Purified Human Kininogen, low mol. wt. **SIZE:** 50 ug

Kininogens are proteins that are defined by their role as precursors for kinin, but that also can have additional roles.

The two main types are:

High-molecular-weight kininogen, which is produced by the liver together with prekallikrein. It acts mainly as a cofactor on coagulation and inflammation, and has no intrinsic catalytic activity. Low-molecular-weight kininogen, which is produced locally by numerous tissues, and secreted together with tissue kallikrein.

High-molecular-weight kininogen (HMWK), also known as the Williams-Fitzgerald-Flaujeac factor or the Fitzgerald factor or the HMWK-kallikrein factor, is a protein from the blood coagulation system as well as the kinin-kallikrein system. It is a protein that adsorbs to the surface of biomaterials that come in contact with blood in vivo. This protein circulates throughout the blood and quickly adsorbs to the material surfaces. As with many other coagulation proteins, the protein was initially named after the patients in whom deficiency was first observed. When the clinical data were combined, it turned out that all patients, in fact, had a deficiency of the same protein.

HMWK is one of the early participants of the intrinsic pathway of coagulation, together with Factor XII (Hageman factor) and prekallikrein. It is 626 amino acids long, and weighs 88 to 120 kDa (dependent on glycosylation). The kininogen is not enzymatically active, and functions only as a cofactor for the activation of kallikrein and Hageman factor. It is also necessary for the activation of factor XI by factor XIIa. The histidine-rich region (amino acids 420 to 510) participates most strongly in coagulation.

HMW kininogen, synthesized by hepatocytes, is a multifunctional protein. In addition to its role in blood coagulation, HMWK (just as Low-molecular-weight kininogen) is a strong inhibitor of cysteine proteinases. Responsible for this activity are three related domains on its heavy chain. HMWK is also a precursor of bradykinin; this vasodilator substance is released through positive feedback by kallikrein.

LMW Kininogen is involved in blood pressure regulation since it is an endogenous protein substrate for tissue kallikrein. Proteolytic cleavage by kallikrein releases vasoactive bradykinin from LMW kininogen. In addition, LMW kininogen, like HMW kininogen, is a major extracellular cysteine protease inhibitor

Source

Human Kininogens, was purified from a pool of human plasma and purified using proprietary techniques (>95% pure, SDS_PAGE 65 kDa). It is supplied in a buffer (10 mM Na Acetate, pH 5.5, with 250 mM NaCl in liquid (see lot specific conc on the vial) or lyophilized in the same buffer (see lot spec concn on the vial).

All human derived material has been tested negative for HIV, HCV, and HbSag. Nevertheless, all precautions should be taken and samples be treated as potentially hazardous.

Form & Storage

Stability: Store powder at -20oC for 2-3 years.

Recommended Usage

If received in liquid then dissolve water at a minimum of 100 ug/ml. Store stock solution at -20oC and do not freeze and thaw. Stability is at least 6 months at -20oC.

References: Scharfsterin J (2007) J. Immunol. 66, 128-136; Thsompson RE (1980) PNAS 76, 4862-4866; Kerbirious DM (1980) JBC 254, 12020-12027; Colman RW (1976) J. Clin. Invest. 56, 1650-1662; Schmaier AH (1988) JBC 263, 16327-16233; Kellermann J (1988) Biochem. J. 247, 15-21; Lottspeich F (1985) Eu. J. Biochem. 152, 307-314

*This product is for In vitro research use only.

Related material available from ADI

Catalog#	ProdDescription	
KINH15-N-50	Kininogen, HMW, Human Plasma	
KINL15-N-50	Kininogen, LMW, Human Plasma	
KINL15-N-50		100201A

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