

Recombinant Human Kallikrein 4/KLK4 Protein (His Tag)

Catalog No. PKSH030981

Note: Centrifuge before opening to ensure complete recovery of vial contents.

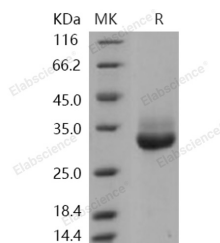
Description

Synonyms	Kallikrein-4;Enamel Matrix Serine Proteinase 1;Kallikrein-Like Protein 1;KLK-L1;Protease;Serine Protease 17;KLK4;EMSP1;PRSS17;PSTS;AI2A1;ARM1;EMSP;kallikrein;KLK-L1
Species	Human
Expression Host	HEK293 Cells
Sequence	Met 1-Ser 254
Accession	NP_004908.3
Calculated Molecular Weight	25.8 kDa
Observed molecular weight	30-35 kDa
Tag	C-His
Bioactivity	Measured by its ability to cleave the fluorogenic peptide substrate Boc-VPR-AMC. (R&D Systems, Catalog # ES011). The specific activity is > 250 pmoles/min/μg. (Activation description: The proenzyme needs to be activated by Thermolysin for an activated form)

Properties

Purity	> 94 % as determined by reducing SDS-PAGE.
Endotoxin	< 1.0 EU per μg of the protein as determined by the LAL method.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile PBS, pH 7.4 Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

Data



> 94 % as determined by reducing SDS-PAGE.

For Research Use Only

Background

Kallikrein-4, also known as Enamel matrix serine proteinase 1, Kallikrein-like protein 1, KLK-L1, Serine protease 17, KLK4, PRSS17 and EMSP1, is a secreted protein which belongs to the peptidase S1 family and Kallikrein subfamily. Kallikrein-4 / KLK4 is a serine protease expressed during enamel maturation, and proteolytic processing of the enamel matrix by KLK4 is critical for proper enamel formation. Kallikrein-4 / KLK4 contains one peptidase S1 domain. Kallikrein-4 / KLK4 is secreted by transition- and maturation-stage ameloblasts. KLK4 aggressively degrades the retained organic matrix following the termination of enamel protein secretion. Two proteases are secreted into the enamel matrix of developing teeth. The early protease is enamelysin (MMP-20). The late protease is kallikrein 4 (KLK4). The principle functions of MMP-20 and KLK4 in dental enamel formation are to facilitate the orderly replacement of organic matrix with mineral, generating an enamel layer that is harder, less porous, and unstained by retained enamel proteins. Defects in Kallikrein-4 / KLK4 are the cause of amelogenesis imperfecta hypomaturational type 2A1 (AI2A1) which is an autosomal recessive defect of enamel formation. The disorder involves both primary and secondary dentitions.