Renin Human HEK293

Product Data Sheet

Type: Recombinant
Source: HEK293
Species: Human
Other names: Angiotensinogenase, REN

Cat. No.:
RD172167100-HEK (0.1 mg)

Description

Total 393 AA. MW: 43.7 kDa (calculated). UniProtKB acc. No. P00797 (Leu24-Arg406). C-terminal His-tag (10 extra AA). Protein identity confirmed by LC-MS/MS.

Introduction to the Molecule

Renin , a polypeptidic enzyme (MW~ 40000) also known as angiotensinogenase, is a circulating protease secreted by juxtaglomerular cells in the juxtaglomerular apparatus of the kidneys in response to low blood volume or low body NaCL content. Renin activates the renin-angiotensin system by cleaving angiotensinogen produced in the liver into angiotensin I (inactive) which is further converted into angiotensin II (active) in the vascular epithelium of the lung. Angiotensin II can cause vasoconstriction by stimulating the central nervous system , in addition it stimulates ADH (antidiuretic hormone) secretion and aldosterone secretion from the adrenal gland.Regulation of blood pressure and renal glomerular filtration control are the most important functions of renin -angiotensin system . Plasmatic concentration of renin is influenced by concentration of circulating angiotensinogen and subsequently the concentration of angiotensin II. High plasmatic levels of angiotensin II reduce renin secretion.(negative feed back) Determination of renin plasma levels is useful in the diagnosis of hypertension and in the therapeutic follow up of hypertensive patients. Plasmatic concentration of renin decreases in patients with hypertension due to a primary hyperaldosteronism , contrary to renovascular hypertension where concentrations of renin and aldosterone are both elevated.

Research topic

Blood pressure regulation and NO metabolism, Cardiovascular disease, Diabetology - Other Relevant Products, Renal disease

Amino Acid Sequence

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LPTDTTTFKR IFLKRMPSIR ESLKERGVDM ARLGPEWSQP MKRLTLGNTT SSVILTNYMD TQYYGEIGIG TPPQTFKVVF
DTGSSNVWVP SSKCSRLYTA CVYHKLFDAS DSSSYKHNGT ELTLRYSTGT VSGFLSQDII TVGGITVTQM FGEVTEMPAL
PFMLAEFDGV VGMGFIEQAI GRVTPIFDNI ISQGVLKEDV FSFYYNRDSE NSQSLGGQIV LGGSDPQHYE GNFHYINLIK
TGVWQIQMKG VSVGSSTLLC EDGCLALVDT GASYISGSTS SIEKLMEALG AKKRLFDYVV KCNEGPTLPD ISFHLGGKEY
TLTSADYVFQ ESYSSKKLCT LAIHAMDIPP PTGPTWALGA TFIRKFYTEF DRRNNRIGFA LARHHHHHHH HHH
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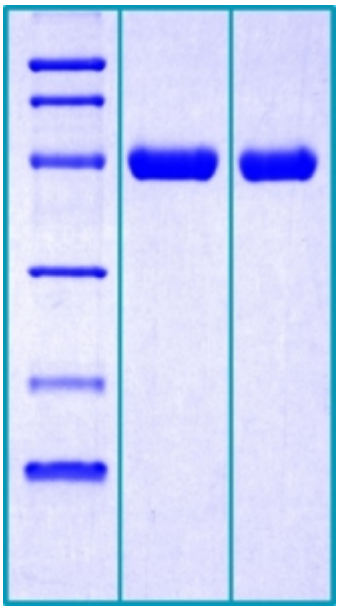
Source

HEK293

Purity

Purity as determined by densitometric image analysis: > 95%

SDS-PAGE gel



12 % SDS-PAGE separation of Human Renin (HEK):
1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. Reduced and boiled sample, 2.5 µg/lane
3. Non-reduced and non-boiled sample, 2.5 µg/lane

Endotoxin

< 0.1 EU/µg

Formulation

Filtered (0.4 µm) and lyophilized from 0.5 mg/ml solution in phosphate buffered saline + 5% (w/v) trehalose.

Reconstitution

Add 200 µl of deionized water to prepare a working stock solution of approximately 0.5 mg/ml and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store the lyophilized protein at -80 °C. Lyophilized protein remains stable until the expiry date when stored at -80 °C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80 °C for long term storage. Reconstituted protein can be stored at 4 °C for a week.

Quality Control Test

BCA to determine quantity of the protein.
SDS-PAGE to determine purity of the protein.
LAL TEST to determine endotoxin level.

Applications

Cell culture and/or animal studies, ELISA, Western blotting

Note

This product is intended for research use only.

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