

Renin Protein, Human, Recombinant (R66K, His)

General Information

Synonyms:	REN;FLJ10761;renin;HNFJ2
Protein Construction:	A DNA sequence encoding the human REN (NP_000528.1, with mutation Arg 66 Lys) (Met1-Arg406) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Leu 24
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P00797-1
Molecular Weight:	43.74 kDa (predicted)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing 50 mM Tris, 150 mM NaCl, pH 8.0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Renin-1, also known as Ren-1, Angiotensinogenase and Kidney renin, is a member of the peptidase A1 family. Renin-1 is synthesized by the juxtaglomerular cells of the kidney in response to decreased blood pressure and sodium concentration. androgen and thyroid hormones influence levels of Renin-1 in mouse submandibular gland (SMG) primarily by regulating the amount of Renin-1 mRNA available for translation. Renin-1 is a highly specific endopeptidase, whose only known function is to generate angiotensin I from angiotensinogen in the

plasma, initiating a cascade of reactions that produce an elevation of blood pressure and increased sodium retention by the kidney. It is expressed at relatively low levels in mouse SMG and kidney. Ren-2 is expressed at high levels in the mouse SMG and at very low levels, if at all, in the kidney. Ren-1 and Ren-2 are closely linked on mouse chromosome 1, show extensive homology in coding and noncoding regions and provide a model for studying the regulation of gene expression.

Reference

McKeon F.D., et al., (1986), Homologies in both primary and secondary structure between nuclear envelope and intermediate filament proteins. *Nature* 319:463-468.

Fisher D.Z., et al., (1986), cDNA sequencing of nuclear lamins A and C reveals primary and secondary structural homology to intermediate filament proteins. *Proc. Natl. Acad. Sci. U.S.A.* 83:6450-6454.

Sylvius N., et al., (2005), In vivo and in vitro examination of the functional significances of novel lamin gene mutations in heart failure patients. *J. Med. Genet.* 42:639-647.

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