

Recombinant Human UMOD Protein, His tagged

Cat. No. UMOD-13H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Total 595 AA. MW: 65 kDa (calculated). UniProtKB acc. no. P07911 (Asp25-Val613). N-terminal His-tag (6 extra AA). Protein identity confirmed by LC-MS/MS.
Species	Human
Source	HEK293
ProteinLength	25-613 aa
Description	Uromodulin (Tamm-Horsfall protein, UMOD) is approx. 85-kDa glycoprotein that is produced in the thick ascending limb of Henle's loop and early distal convoluted tubules of the nephron. It is a transmembrane protein, which is secreted into the urine through proteolytic cleavage of the glycosylphosphatidylinositol (GPI) anchor. It belongs to the GPI family. Healthy individuals excrete tens of miligrams of uromodulin per day, making in the most abundant protein in the urine. Uromodulin modulates cell adhesion and signal transduction by interacting with cytokines and it inhibits the aggregation of calcium crystals. By reducing calcium oxalate precipitation, uromodulin plays a protective role with respect to renal stone formation as demonstrated by recent studies on THP- deficient mice prone to nephrolithiasis. THP acts as a host defense factor against urinary tract infections induced by uropathogens such as Escherichia coli, Staphylococcus saprophyticus, Proteus mirabilis and Klebsiella pneumoniae. Uromodulin binds to type 1 fimbriae of Escherichia coli and thereby blocks colonization of urothelial cells. Tamm-Horsfall protein interacts with other molecules and cells including IL-1, IL-2, TNF, IgG, neutrophils, lymphocytes and

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monocytes. Binding of uromodulin to neutrophils induces synthesis of IL-8, provokes the respiratory burst and degranulation and stimulates chemotaxis and phagocytosis. Recently, genome-wide association studies identified uromodulin as a risk factor for chronic kidney disease and hypertension. Mutations in the Uromodulin gene are associated with three autosomal dominant tubulo-interstitial nephropathies such as familial juvenile hyperuricemic nephropathy (FJHN), medullary cystic kidney disease (MCKD2) and glomerulocystic kidney disease (GCKD). These disorders are characterized by juvenile onset of hyperuricemia, gout and progressive renal failure.

Form	Filtered (0.4 µm) and lyophilized in 20mM TRIS, 50mM NaCl, pH 7.5
Molecular Mass	65 kDa
AASequence	DTSEARWCSECHSNATCTEDEAVTTCTCQEGFTGDGLTCVDLDECAIPGAHNCSA NSSCVNTPGSFSCVCPEGFRLSPGLGCTDVDECAEPGLSHCHALATCVNVVGSYL CVCPAGYRGDGDWHCECSPGSCGPGLDVCPEGDALVCADPCQAHRTLDEYWRSTE YGEGYACDSDLRGWYRFVGQGGARMAETCVPVLRNNTAAPMWLNGTHPSSDEGI VSRKACAHWSGHCCLDASVQVKACAGGYVYNLTAPPECHLAYCTDPSSVEGT CEECSIDEDCKSNNGRWHCQCKQDFNITDISLLEHRLECGANDMKVSLGKCQLKSL GFDKVFMYLSDSRCSGFNDRDNRDWVSVVTPARDGPCGTVLTRNETHATYSNTLY LADEIIIRDNLNIKINFACSYPLDMKVSLKTALQPMVSALNIRVGGTGMFTVRMALFQTP SYTQPYQGSSVTLSTEAFLYVGTMLDGGDLRSRFBALLMTNCYATPSSNATDPLKYFII QDRCPHTRDSTIQVVENGESSQGRFSVQMFRFAGNYDLVYLHCEVYLCDTMNEKC KPTCSGTRFRSGSVIDQSRVLNLGPITRKGVCATVHHHHHH
Endotoxin	< 1.0 EU/µg
Purity	> 90 % by SDS-PAGE
Notes	This product is intended for research use only.

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Storage	Store the lyophilized protein at -80 centigrade. Lyophilized protein remains stable until the expiry date when stored at -80 centigrade. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80 centigrade for long term storage. Reconstituted protein can be stored at 4 centigrade for a week.
Shipping	At ambient temperature. Upon receipt, store the product at the temperature recommended below.
Reconstitution	Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely.
Quality Control Test	BCA to determine quantity of the protein. SDS-PAGE to determine purity of the protein. Endotoxin level determination.

GENE INFORMATION

Gene Name	UMOD uromodulin [Homo sapiens (human)]
Official Symbol	UMOD
Synonyms	UMOD; uromodulin; uromodulin (uromucoid, Tamm Horsfall glycoprotein); Tamm Horsfall glycoprotein; uromucoid; Tamm-Horsfall glycoprotein; tamm-Horsfall urinary glycoprotein; uromodulin (uromucoid, Tamm-Horsfall glycoprotein); THP; FJHN; HNFJ; THGP; HNFJ1; MCKD2; ADMCKD2;
Gene ID	7369
mRNA Refseq	NM_001008389
Protein Refseq	NP_001008390

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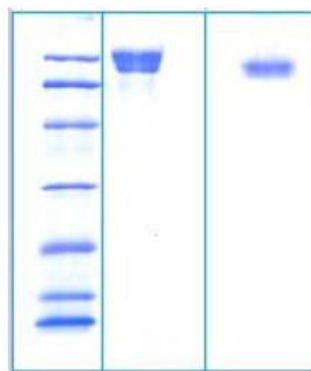
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MIM 191845

UniProt ID P07911

SDS-PAGE



12 % SDS-PAGE separation of Human Uromodulin: M.W. marker – 6.5, 12.5, 21, 29, 45, 67, 97.4 kDa Reduced and boiled sample, 2 µg/lane Non-reduced and non-boiled sample, 2 µg/lane

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