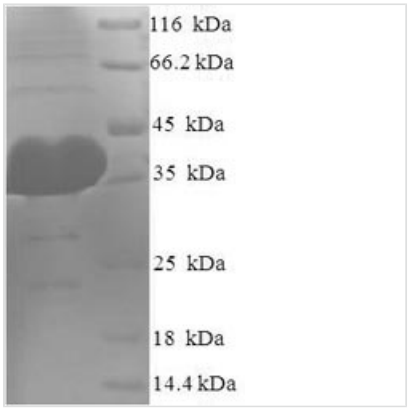
Recombinant Human Protein argonaute-2 (AGO2), partial

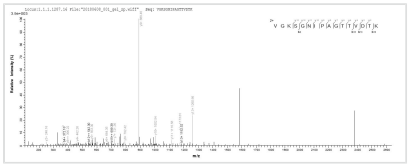
Product Code	CSB-EP891731HU
Relevance	Required for RNA-mediated gene silencing (RNAi) by the RNA-induced silencing complex (RISC). The 'minimal RISC' appears to include AGO2 bound to a short guide RNA such as a microRNA (miRNA) or short interfering RNA (siRNA). These guide RNAs direct RISC to complentary mRNAs that are targets for RISC-mediated gene silencing. The precise mechanism of gene silencing depends on the degree of complentarity between the miRNA or siRNA and its target. Binding of RISC to a perfectly complentary mRNA generally results in silencing due to endonucleolytic cleavage of the mRNA specifically by AGO2. Binding of RISC to a partially complentary mRNA results in silencing through inhibition of translation, and this is independent of endonuclease activity. May inhibit translation initiation by binding to the 7-methylguanosine cap, thereby preventing the recruitment of the translation initiation factor eIF4-E. May also inhibit translation initiation via interaction with EIF6, which itself binds to the 60S ribosomal subunit and prevents its association with the 40S ribosomal subunit. The inhibition of translational initiation leads to the accumulation of the affected mRNA in Cytoplasmic domain processing bodies (P-bodies), where mRNA degradation may subsequently occur. In some cases RISC-mediated translational repression is also observed for miRNAs that perfectly match the 3' untranslated region (3'-UTR). Can also up-regulate the translation of specific mRNAs under certain growth conditions. Binds to the AU elent of the 3'-UTR of the TNF (TNF-alpha) mRNA and up-regulates translation under conditions of serum starvation. Also required for transcriptional gene silencing (TGS), in which short RNAs known as antigene RNAs or agRNAs direct the transcriptional repression of complentary promoter regions
Abbreviation	Recombinant Human AGO2 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q9UKV8
Product Type	Recombinant Proteins
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	LVVVILPGKTPVYAEVKRVGDTVLGMATQCVQMKNVQRTTPQTLSNLCLKINV KLGGVNNILLPQGRPPVFQQPVIFLGADVTHPPAGDGKKPSIAAVVGSMDAHP NRYCATVRVQQHRQEIIQDLAAMVRELLIQFYKSTRFKPTRIIFYRDGVSEGQF QQVLHHELLAIREACIKLEKDYQPGITFIVVQKRHHTRLFCTDKNERVGKSGNIP AGTTVDTKITHPTEFDFYLCSHAGIQGTSRPSHYHVLWDDNRFSSDELQILTYQ LCHTYVRCTRSVSIPAPAYYAHLVAFRARYHLV

Research Area	Epigenetics and Nuclear Signaling
Source	E.coli
Target Names	AGO2
Expression Region	517-818aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	38.1kDa
Protein Length	Partial

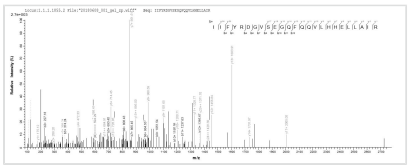
Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP891731HU could indicate that this peptide derived from E.coli-expressed Homo sapiens (Human) AGO2.



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Description

Amino acids 517-818 constitute the expression domain of recombinant Human AGO2. This AGO2 protein is expected to have a theoretical molecular weight of 38.1 kDa. Expression of this AGO2 protein is conducted in e.coli. The N-terminal 6xHis tag was fused into the coding gene segment of AGO2, making it easier to detect and purify the AGO2 recombinant protein in the later stages of expression and purification.

The human protein argonaute-2 (AGO2) is a key component of the RNA-induced silencing complex (RISC) and a member of the Argonaute protein family. AGO2 plays a central role in RNA interference (RNAi) and microRNA (miRNA) pathways. AGO2 is involved in post-transcriptional gene regulation by binding to small RNA molecules, such as miRNAs and small interfering RNAs

	(siRNAs). This binding allows AGO2 to guide RISC to complementary mRNA sequences, leading to mRNA cleavage or translational repression. AGO2 is essential for processes like gene silencing, antiviral defense, and maintaining genome stability. Research on AGO2 explores its intricate functions in RNA silencing pathways and its potential applications in therapeutic interventions.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.