AGO2/Argonaute-2 Protein, Mouse (sf9, His)

Cat. No.:	HY-P74423
Synonyms:	Protein argonaute-2; Argonaute2; mAgo2; eIF-2C 2; Eif2c2
Species:	Mouse
Source:	Sf9 insect cells
Accession:	Q8CJG0 (M1-A860)
Gene ID:	239528
Molecular Weight:	Approximately 105 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM Tris, 500 mM NaCl, pH 7.4, 10% glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The AGO2/Argonaute-2 protein is crucial for RNA-mediated gene silencing facilitated by the RNA-induced silencing complex (RISC). The 'minimal RISC' comprises AGO2 bound to a short guide RNA, such as a microRNA (miRNA) or short interfering RNA (siRNA). These guide RNAs guide RISC to complementary mRNAs, initiating RISC-mediated gene silencing. The mechanism of gene silencing depends on the complementarity between the miRNA or siRNA and its target. Perfect complementarity leads to mRNA cleavage by AGO2, while partial complementarity results in translational inhibition, independent of endonuclease activity. AGO2 may inhibit translation initiation by binding to the 7-methylguanosine cap, preventing eIF4-E recruitment. It can also interact with EIF6, hindering the association of the 60S ribosomal subunit with the 40S subunit, leading to translational inhibition and mRNA accumulation in processing bodies. RISC-mediated translational repression is observed even for miRNAs with perfect 3'-UTR matches. Additionally, AGO2 plays a role in up-regulating translation under specific growth conditions, binding to the AU element in the 3'-UTR of TNF mRNA to enhance translation during serum starvation. Beyond its role in RNA silencing, AGO2 is essential for transcriptional gene silencing (TGS) where antigene RNAs or agRNAs direct the repression of complementary promoter regions. AGO2 regulates lymphoid and erythroid development and function independently of its endonuclease activity.

Caution: Product has not been fully validated for medical applications. For research use only.

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