

Human AGO2 / Argonaute 2 / EIF2C2 Protein (His Tag)

Catalog Number: 11079-H07B



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

Argonaute 2; EIF2C2; Q10

Protein Construction:

A DNA sequence encoding the full length of human AGO2 (NP_036286.2) (Met 1-Ala 859) was expressed with a polyhistidine tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 85 % as determined by SDS-PAGE

Bio Activity:

Human AGO2 (11079-H07B) can bind Let-7a RNA and cleave target RNA (21nt).

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

Molecular Mass:

The recombinant human AGO2 consists of 877 amino acids and predicts a molecular mass of 99 kDa as estimated by SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, pH7.4, 10% glycerol, 2mM DTT

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

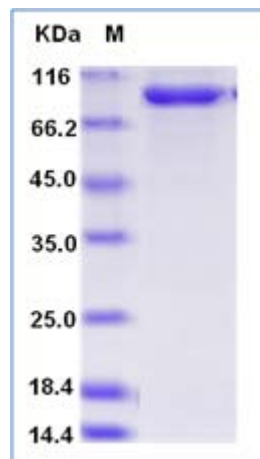
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Argonaute 2 (AGO2), also known as Eukaryotic translation initiation factor 2C2 (EIF2C2), belongs to the Argonaute family, AGO subfamily, which is a component of the RNA-induced silencing complex (RISC) and mediates small interfering RNA (siRNA)-directed mRNA cleavage and microRNA translational suppression. AGO2 protein is the catalytic engine of mammalian RNAi. It contains a PIWI domain that is structurally related to RNases H and possibly shares with them a two-metal-ion catalysis mechanism. Human AGO2 was unable to cleave preformed RNA duplexes and exhibited weaker binding affinity for RNA duplexes compared with the single strand RNA. The enzyme exhibited greater RNase H activity in the presence of Mn²⁺ compared with Mg²⁺. Human AGO2 exhibited weaker binding affinities and reduced cleavage activities for antisense RNAs with either a 5'-terminal hydroxyl or abasic nucleotide. In mouse hematopoiesis, AGO2 controls early development of lymphoid and erythroid cells. AGO2 is a highly specialized member of the Argonaute family with an essential nonredundant Slicer-independent function within the mammalian miRNA pathway. AGO2 regulates dFMR1 expression, and the relationship between dFMR1 and AGO2 was defined by their physical interaction and co-regulation of downstream targets. AGO2 and dFMR1 are also connected through a regulatory relationship. AGO2 is a regulator of dFMR1 expression and have clarified an important developmental role for AGO2 in the nervous system and germ line that requires dFMR1 function. In addition, AGO2 is regulated at both the transcriptional and posttranslational level, and also implicate AGO2 and enhanced micro-RNA activity in the tumorigenic progression of breast cancer cell lines.

References

1. O'Carroll D, *et al.* (2007) A Slicer-independent role for Argonaute 2 in hematopoiesis and the microRNA pathway. *Genes Dev.* 21(16): 1999-2004.
2. Pepper AS, *et al.* (2009) Argonaute2 suppresses Drosophila fragile X expression preventing neurogenesis and oogenesis defects. *PLoS One.* 4(10): e7618.
3. Lima WF, *et al.* (2009) Binding and cleavage specificities of human Argonaute2. *J Biol Chem.* 284(38): 26017-28.

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