

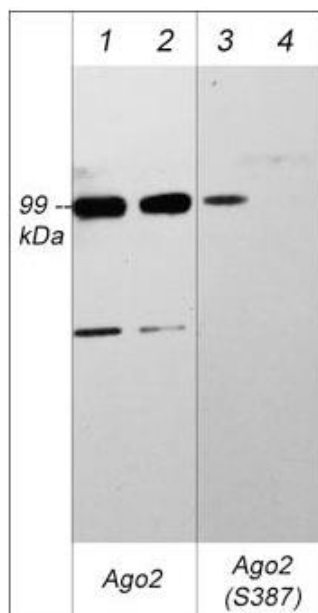
Product Datasheet

Anti-Argonaute 2 (Ser-387), Phosphospecific Antibody

Overview

Catalog #	AP5291
Size	100 µL
Host Species	Rabbit Polyclonal
Format	Antigen Affinity Purified
Applications	WB 1:1000 ICC 1:100
Species Tested	Chicken, Human, Mouse, Rat, and Xenopus
Immunogen	Phospho-Ago2 (Ser-387) synthetic peptide (coupled to KLH) corresponding to amino acid residues surrounding serine 387 in human Ago2. This peptide sequence is highly conserved in mouse, rat, chick, and fish Ago2. The site is also conserved in Ago1 and Ago4, but the homology surrounding the site is low between Ago2 and these two family members.
Molecular Weight	97 kDa
Cite this Antibody	PhosphoSolutions Cat# AP5291, RRID:AB_3068367

Images



Western blot analysis of mouse recombinant Ago2 full length protein (lanes 1-4). The blot was treated with lambda phosphatase (lanes 2 & 4) then probed with rabbit polyclonal anti-Ago2 (AP5281) (lanes 1 & 2) and rabbit polyclonal anti-Ago2 (Ser-387) phospho-specific antibody (lanes 3 & 4).

Details

Target Description

Several classes of small RNAs, including short interfering RNAs (siRNAs), microRNAs (miRNAs), and Piwi-interacting RNAs (piRNAs) have been identified. MicroRNAs are about 21 nucleotides in length and have been implicated in many cellular processes such as development, differentiation, and stress response. These small RNAs function together with complexes called micro-ribonucleoproteins (miRNPs) to regulate gene expression by modulating mRNA translation or stability. Among the most important components in these complexes are argonaute proteins. There are four members in the mammalian argonaute family and only argonaute 2 (Ago2) possesses the Slicer endonuclease activity. Argonaute proteins participate in various steps of microRNA-mediated gene silencing, such as repression of translation and mRNA turnover. These activities may be regulated by cell signaling events that alter argonaute phosphorylation. EGFR phosphorylates Tyr-393 in Ago2, which reduces binding to Dicer and inhibits miRNA processing. Akt3 phosphorylates Ago2 at Ser-387 leading to reduced mRNA cleavage and enhanced translational repression.

Specificity

This antibody was cross-absorbed to unphospho-Ago2 (Ser-387), before affinity purification using phospho-Ago2 (Ser-387) peptide (without carrier). The antibody detects a 97 kDa* protein corresponding to the apparent molecular mass of phosphorylated Ago2 on SDS-PAGE immunoblots of human A431 cells treated with Calyculin A and mouse recombinant Ago2 full length protein. This reactivity is not observed after lambda phosphatase dephosphorylation.

Quality Control

Western blots performed on each lot.

Buffer

PBS + 1 mg/ml BSA, 0.05% NaN₃ and 50% glycerol

Storage

Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.

Stability

After date of receipt, stable for at least 1 year at -20°C.

Significant Citations

Quiroga, D., Roman, B., Salih, M., Daccarett-Bojanini, W.N., Garbus, H., Ebenebe, O.V., Dodd-O, J.M., O'Rourke, B., Kohr, M. and Das, S. (2024). Sex-dependent phosphorylation of Argonaute 2 reduces the mitochondrial translocation of miR-181c and induces cardioprotection in females. *Journal of Molecular and Cellular Cardiology*, [online] 194, pp.59–69.

Chen, W., Pilling, D. and Gomer, R.H. (2023). The mRNA binding protein DDX3 mediates TGF-β1 upregulation of translation and promotes pulmonary fibrosis. *JCI Insight*.

Rajgor, D., Sanderson, T.M., Amici, M., Collingridge, G.L. and Hanley, J.G. (2018). NMDAR-dependent Argonaute 2 phosphorylation regulates miRNA activity and dendritic spine plasticity. *The EMBO journal*, [online] 37(11).

Antonis Kourtidis, Necela, B.M., Wan Hsin Lin, Lu, R., Feathers, R.W., Asmann, Y.W., E. Aubrey Thompson and Anastasiadis, P.Z. (2017). Cadherin complexes recruit mRNAs and RISC to regulate epithelial cell signaling. *Journal of Cell Biology*, 216(10), pp.3073–3085.

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