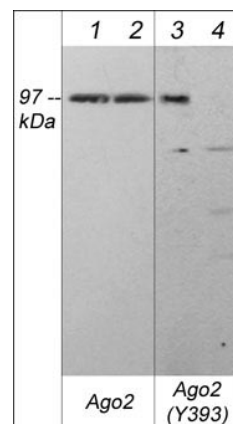


## Background

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.

## Background References

Peters, L. & Meister, G. (2007) Mol Cell 26: 611.  
Filipowicz, W. et al. (2008) Nat Rev Genet. 9:102.  
Shen, J. et al. (2013) Nature 497:383.



Western blot analysis of human A431 cells treated with EGF (100 ng/ml for 60 min.) (lanes 1-4). The blot was treated with lambda phosphatase (lanes 2 & 4) then probed with rat monoclonal anti-Ago2 (AM5271) (lanes 1 & 2) and rabbit polyclonal anti-Ago2 (Tyr-393) phospho-specific antibody (lanes 3 & 4).

## Applications

WB 1:250  
ELISA 1:1000

## Species Reactivity

Hu, Bv

**Isotype:** IgG2a

## Specificity

The antibody detects a 97 kDa\* protein corresponding to the apparent molecular mass of Ago2 on SDS-PAGE immunoblots of several human cell lines, A431, HeLa, MCF-7, and K562. The antibody does not detect rat or mouse Ago2, but will detect bovine Ago2.

End user should determine optimal dilution for their particular applications and experiments.  
Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

\*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

## Immunogen

**Uniprot ID: Q9UKV8**

Clone 11A9 was generated from an Ago2 (a.a. 1-15) synthetic peptide (coupled to KLH) corresponding to amino acids in the N-terminus of human Ago2. This sequence has low homology to other argonaute family members.

## Buffer and Storage

Rat monoclonal antibody purified with protein G chromatography is supplied in 100µl phosphate-buffered saline and 0.05% sodium azide. Aliquot and Store at -20°C. Stable for 1 year.

## Related Products

AK6340 Akt Phospho-Regulation Antibody Sampler Kit  
AP5281 Argonaute 2 (a.a. 389-398) Rabbit Polyclonal  
AP5291 Argonaute 2 (Ser-387), phospho-specific Rabbit Polyclonal  
AP5311 Argonaute 2 (Tyr-393), phospho-specific Rabbit Polyclonal  
AK6970 Argonaute 2 Phospho-Regulation Antibody Sampler Kit

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