Revision 1

Store at -20°C
#4487

RNAi Machinery Antibody Sampler Kit

1 Kit (5 x 20 microliters)

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Drosha (D28B1) Rabbit mAb	3364	20 µl	160 kDa	Rabbit IgG
Argonaute 2 (C34C6) Rabbit mAb	2897	20 µl	97 kDa	Rabbit IgG
Argonaute 1 (D84G10) XP® Rabbit mAb	5053	20 µl	97 kDa	Rabbit IgG
Mili (D14F5) XP® Rabbit mAb	5940	20 µl	110 kDa	Rabbit IgG
Dicer (D38E7) Rabbit mAb	5362	20 µl	220 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The RNAi Machinery Antibody Sampler Kit provides an economical means to analyze proteins associated with endogenous RNA interference. The kit contains enough primary and secondary antibodies to perform two western blot experiments.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

RNA interference (RNAi) serves as a global mechanism of gene regulation in eukaryotes. Through interactions with Dicer, Drosha, Argonaute 2 (Ago2) and Miwi/Mili proteins, microRNA (miRNA) is processed within the nucleus and utilized for gene silencing and down regulation of gene expression. Dicer is a member of the RNase III family that specifically cleaves double-stranded RNA to generate microRNA (miRNA) (1). Long, primary transcripts (pri-miRNAs) are processed to stem-looped pre-miRNAs by the nuclear RNase III Drosha (2) and are then transported to the cytoplasm for further processing by Dicer to produce mature, 22-nucleotide miRNAs (3). The mature miRNA then becomes a part of the RNA-Induced Silencing Complex (RISC) and can bind to the 3' UTR of the target mRNA (3). Interference of Drosha pri-miRNA processing results in the increase of pri-miRNAs and the decrease of pre-miRNAs (2). Drosha forms part of a multiprotein complex called the Microprocessor along with other components, such as DGCR8 (4). Both Drosha and DGCR8 are necessary for miRNA biogenesis (5). Argonaute protein family members participate in various steps of miRNA-mediated gene silencing such as repression of translation and mRNA turnover (6). The *Drosophila* piwi gene was identified as being required for the self-renewal of germ-line stem cells, and its homologues are well conserved among various species including *Arabidopsis*, *C. elegans* and human (7). Miwi and Mili proteins are both mouse homologs of Piwi and contain a carboxy-terminal Piwi domain that binds to Piwi-interacting RNAs (piRNAs) in male germ cells and are essential for spermatogenesis in mouse (8-11).

Background References

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5. Gregory, R.I. et al. (2004) *Nature* 432, 235-40.
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