SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2C2 (4F9): sc-53521

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The Power to Question

BACKGROUND

Eukaryotic translation initiation factor 2C (eIF2C) proteins (argonaute family) influence RNA interference (RNAi) as components of the RNA-inducible silencing complex (RISC) or microRNA (miRNA)-containing ribonucleoprotein particle (miRNP). Small RNAs, including small interfering RNAs (siRNAs) and miRNAs, can silence target genes through mechanisms that utilize RISC or miRNP particles. eIF2C1 (argonaute 1, AGO1, eIF2C, GERP95, Q99) and Dicer1 play a coordinated role in siRNA-mediated gene silencing. eIF2C2 (slicer, argonaute 2, AGO2, Q10) is a RISC component that can concentrate in cytoplasmic processing bodies (P-bodies) and catalyze mRNA cleavage. Mammalian P-bodies contain mRNAs and have an association with miRNA-induced translational silencing and siRNA-induced mRNA degradation. Additional eIF2C proteins include eIF2C3 (argonaute 3, AGO3), eIF2C4 (argonaute 4, AGO4) and meIF2C5 (mouse argonaute 5).

REFERENCES

1. Martinez, J., et al. 2002. Single-stranded antisense siRNAs guide target RNA cleavage in RNAi. Cell 110: 563-574.
2. Carmell, M.A., et al. 2002. The Argonaute family: tentacles that reach into RNAi, developmental control, stem cell maintenance, and tumorigenesis. Genes Dev. 16: 2733-2742.

CHROMOSOMAL LOCATION

Genetic locus: AGO2 (human) mapping to 8q24.3; Ago2 (mouse) mapping to 15 D3.

SOURCE

eIF2C2 (4F9) is a mouse monoclonal antibody raised against full length recombinant eIF2C2 of human origin.

PRODUCT

Each vial contains 200 µg IgA kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

eIF2C2 (4F9) is recommended for detection of eIF2C2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for eIF2C2 siRNA (h): sc-44409, eIF2C2 siRNA (m): sc-44659, eIF2C2 shRNA Plasmid (h): sc-44409-SH, eIF2C2 shRNA Plasmid (m): sc-44659-SH, eIF2C2 shRNA (h) Lentiviral Particles: sc-44409-V and eIF2C2 shRNA (m) Lentiviral Particles: sc-44659-V.

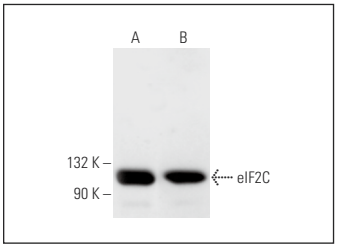
Molecular Weight of eIF2C2: 94 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Western blot analysis of eIF2C expression in K-562 (**A**) and HeLa (**B**) whole cell lysates immunoprecipitated with eIF2C (4F9): sc-53521 and detected with eIF2C (H-300): sc-32877.

SELECT PRODUCT CITATIONS

1. Smalheiser, N.R., et al. 2011. Endogenous siRNAs and noncoding RNA-derived small RNAs are expressed in adult mouse hippocampus and are up-regulated in olfactory discrimination training. RNA 17: 166-181.
2. Durairaj, R.V. and Koilmani, E.R. 2014. Environmental enrichment modulates glucocorticoid receptor expression and reduces anxiety in Indian field male mouse *Mus booduga* through up-regulation of microRNA-124a. Gen. Comp. Endocrinol. 199: 26-32.
3. Kim, Y., et al. 2015. Uvrag targeting by Mir125a and Mir351 modulates autophagy associated with Ewsr1 deficiency. Autophagy 11: 796-811.
4. Latorre, E., et al. 2016. Human antigen R binding and regulation of SOX2 mRNA in human mesenchymal stem cells. Mol. Pharmacol. 89: 243-252.
5. van Eijl, R.A.P.M., et al. 2017. Reactivity of human AGO2 monoclonal antibody 11A9 with the SWI/SNF complex: a case study for rigorously defining antibody selectivity. Sci. Rep. 7: 7278.
6. Sheng, W., et al. 2018. LSD1 ablation stimulates anti-tumor immunity and enables checkpoint blockade. Cell 174: 549-563.
7. Tang, L., et al. 2019. Muscleblind-like 1 destabilizes Snail mRNA and suppresses the metastasis of colorectal cancer cells via the Snail/E-cadherin axis. Int. J. Oncol. 54: 955-965.
8. Das, S., et al 2021. Post-transcriptional regulation of MMP2 mRNA by its interaction with miR-20a and Nucleolin in breast cancer cell lines. Mol. Biol. Rep. 48: 2315-2324.
9. Braun, T., et al. 2022. Noncanonical function of AGO2 augments T-cell receptor signaling in T-cell prolymphocytic leukemia. Cancer Res. 82: 1818-1831.

RESEARCH USE

For research use only, not for use in diagnostic procedures.