Product Information

Monoclonal Anti-ADAR2

Clone ADAR2-8, produced in mouse
Purified Immunoglobulin

SAB4200142

Product Description

Monoclonal Anti-ADAR2 (mouse IgG3 isotype) is derived from the hybridoma ADAR2-8 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment of human ADAR2 (GeneID 104), conjugated to KLH. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-ADAR2 recognizes human ADAR2. The product may be used in several immunochemical techniques including immunoblotting (~ 81 kDa). Detection of the ADAR2 band by immunoblotting is specifically inhibited by the immunizing peptide.

RNA editing by hydrolytic deamination of adenosine (A) to inosine (I) in double-stranded (ds)RNA is the most common type of editing in higher eukaryotes. This RNA editing event is catalyzed by the ADAR (adenosine deaminase that acts in RNA) enzyme.[1] There are two ADAR enzymes that have been shown to have enzymatic activity in mammals, ADAR1 and ADAR2. Both can convert specific adenosine to inosine in pre-mRNA and can also convert up to 40-50% of the adenosines in long synthetic duplex RNAs.[2]

ADAR1 and ADAR2 are expressed in most tissues but in general, the pre-mRNA being edited represents receptors of the central nervous systems.[3] These transcripts include the glutamate-gated ion channel receptors (GluR), serotonin 2C receptor as well as a transcript encoding ADAR2 itself.[1]

ADAR2 was found to be localized predominantly in the nucleus.[4,5] Its activity was directly involved in both cell cycle by slowing down cell growth rate at the S-G_2 phase, and in cell migration. Therefore, it was not surprising that a correlation between a decrease in ADAR2 editing activity and the grade of tumor malignancy (astrocytoma grade I-IV) was evident in children.

Furthermore, both astrocytoma tissues and astrocytoma cell lines showed little or no ADAR2 editing activity. By restoring a correct ADAR2 editing level in astrocytoma cell lines, a significant decrease in cell malignant behavior was observed. A general downregulation of ADAR2 activity seems to be a common feature that has been observed also in brain tumors by different laboratories.[6]

Reagent

The product is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze at –20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 1.0-2.0 µg/mL is recommended using total cells extract of HL-60 total cell extract.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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3. Morabito, M.V., and Emeson, R.B., *Neuropsychopharm.,* **34**, 246 (2009).
4. Desterro, J.M., et al., *J. Cell Sci.,* **116**, 1805-1818 (2003).
5. Sansam, C.L., et al., *Proc. Natl. Acad. Sci. USA.,* **100**, 14018-14023 (2003).
6. Škarda, J., et al., *Acta Pathol. Microb. Immunol. Scan.,* **117**, 551-557 (2009).

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