

Product Information

Anti-FMR1 (C-terminal)

produced in rabbit, affinity isolated antibody

Catalog Number **F4055**

Product Description

Anti-FMR1 (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 606-623 of human FMR1 (GeneID: 2332), conjugated to KLH. The corresponding sequence is highly conserved (1 amino acid substitution) in rat and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-FMR1 (C-terminal) specifically recognizes FMR1. Applications include the detection of FMR1 by immunoblotting (~80 kDa), immunofluorescence staining, and immunoprecipitation. Additional lower bands corresponding to alternative splice variants may be detected in some extract preparations. Detection of the FMR1 band by immunoblotting is specifically inhibited with the immunizing peptide.

One out of 4,000 males and one out of 6,000 females suffer from fragile X syndrome that is an inherited mental disease. Fragile X syndrome is characterized by mental retardation, macroorchidism, typical facial appearance and various degrees of autistic behavior. This syndrome is caused by the expansion of highly polymorphic CGG repeats present in the untranslated region of the *FMR1* gene.²⁻⁴ As a consequence, the promoter of the gene is hypermethylated and the *FMR1* gene is not transcribed. The FMR1 protein (also known as FMRP, FRAXA and Fragile X mental retardation 1 protein) can bind to RNA. It contains two heterogeneous nuclear ribonucleoprotein K homology (KH) domains and one RGG box. Two proteins named FXR1 and FXR2 interact with FMR1. Both proteins have 60 percent amino acid identity to FMR1 and both have two KH domains and one RGG box that together with FMR1 bind to RNA. FXR2 gene is located on human chromosome 17 and its protein is localized mainly in the cytoplasm. The protein is highly expressed in brain and testis.¹⁻³ FXR2 knock-out mice are hyperactive in the open-field test, impaired on the rotarod test, have reduced levels of pre-pulse inhibition, display less contextual conditioned fear, are impaired at locating the hidden platform in the Morris water task and less sensitive to heat stimulus.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze 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 dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working dilution of 1-2 µg/mL is recommended using HEK-293T cell lysate, and 2-4 µg/mL using RAT1 cell lysate.

Immunoprecipitation: a working amount of 5-10 µg is recommended using HEK-293T cells lysate.

Immunofluorescence: a working concentration of 2-5 µg/mL is recommended using methanol-acetone fixed heat-shocked NIH3T3 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Wan, L., et al., *Mol. Cell. Biol.*, **20**, 8536-8547 (2000).
2. Zhang, Y., et al., *EMBO J.*, **14**, 5358-5366 (1995).
3. Tamanini, F., et al., *Hum. Mol. Genet.*, **6**, 1315-1322 (1997).

4. Siomi, M.C., et al., *Mol. Cell. Biol.*, **16**, 3825-3832 (1996).

5. Bontekoe, C.J.M., et al., *Hum. Mol. Genet.*, **11**, 487-498 (2002).

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