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Product Information

Monoclonal Anti-CUG-BP1

Clone HL 1190 (3B1-3D11)
Purified Mouse Immunoglobulin

Product Number **C 5112**

Product Description

Monoclonal Anti-CUG-BP1 (mouse IgG1 isotype) is derived from the HL 1190 (3B1-3D11) hybridoma produced by the fusion of mouse myeloma cells and splenocytes from mice immunized with human CUG-BP1 (nuclear RNA binding protein).¹ The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-CUG-BP1 recognizes human, bovine, porcine, rabbit, rat, and mouse CUG-BP1 (nuclear RNA binding protein) (approx. 45 kDa). Applications include the detection of CUG-BP1 by immunoblotting and immunocytochemistry.¹

In Myotonic Dystrophy (DM), an expansion of a triplet nucleotide repeat (CTG)_n occurs in the untranslated region of the gene encoding for myotonin protein kinase (DMPK).¹ This expansion may cause a decrease in the level of the mRNA and protein of the DMPK gene in patients with DM1. However, *Dmpk*^{-/-} knockout mice do not show myotonia, a characteristic DM1 phenotype, suggesting that alteration in the level of other genes may cause the DM1 symptoms.¹

Several RNA binding proteins were identified by their ability to bind to CUG repeats, among them ETR-3, Brunol 1, and CUG-BP1. The activity of these proteins is altered in DM1 patients. The CUG-BP1 protein, also known as hNab50, is part of the large family of nuclear ribonucleoproteins (hnRNPs). This protein was purified by its ability to bind CUG repeats in the untranslated region of the DMPK mRNA. CUG-BP1 is localized in the cytoplasm and nucleus with different activities. In nuclei it is involved in splicing of cardiac troponin T (cTnT), insulin receptor, and chloride channel gene transcripts, and its activity is altered in DM1 patients.²⁻⁵ In the cytoplasm, CUG-BP1 has been shown to regulate translation of a dominant negative isoform of C/EBPβ.²

Monoclonal antibodies specific for CUG-BP1 are important for studying RNA binding proteins and understanding myotonic dystrophy disease.

Reagent

Monoclonal Anti-CUG-BP1 is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: Approx. 1.5-2 mg/ml

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also 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

For immunoblotting, a minimum working antibody concentration of 0.25 µg/ml is recommended using an extract of C-2 (mouse myoblasts) cells.

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

References

1. Timchenko, L.T., et al., Nuc. Acid Res., **24**, 4407-4414 (1996).
2. Timchenko, N. A., et al., J. Biol. Chem., **276**, 7820-7826 (2001).

3. Savkur, R.S., et al., Nature Genetics, **29**, 40-47 (2001).
4. Mankodi, A., et al., Mol. Cell, **10**, 35-44 (2002).
5. Charlet-B, N., et al., Mol. Cell, **10**, 45-53 (2002).

EK/KAA 08/02

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