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Product Information

Monoclonal Anti-FUS, clone FUS-4
produced in mouse, tissue culture supernatant

Catalog Number **SAB4200478**

Product Description

Monoclonal Anti-FUS (mouse IgM isotype) is derived from the hybridoma FUS-4 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to an internal sequence of human FUS (GeneID: 2521), conjugated to KLH. The corresponding sequence is identical in monkey and differs by 3 amino acids in mouse and rat. The isotype is determined using a Mouse Monoclonal Antibody Isotyping kit. The antibody is provided as culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-FUS recognizes human, monkey, mouse and rat FUS. The antibody may be used in various immunochemical techniques including immunoblotting (~70 kDa), immunofluorescence and immunohistochemistry. Detection of the FUS band by immunoblotting is specifically inhibited by the immunizing peptide.

FUS (fused in sarcoma, also known as TLS, RNP-P2, ALS6) is a RNA/DNA binding protein that plays regulatory roles in transcription, RNA splicing and transport and is implicated in multiple diseases.[1,2] Chromosomal translocation of FUS/TLS is found in human cancers and results in the production of oncogenic FUS fusion proteins. Recently, FUS has been implicated in a broadening spectrum of neurodegenerative disorders.[2] FUS has been identified as a component of inclusion bodies in patients with Huntington's disease (HD) and spinocerebellar ataxias (SCA1-3). More recently, mutations in TDP-43 and FUS have been identified in amyotrophic lateral sclerosis (ALS) and fronto-temporal lobar degeneration (FLTD) including ubiquitin-positive inclusions (FLTD-U).[2-4] Although FUS is normally located predominantly in the nucleus, pathological FUS inclusions are mostly found in the cytosol of neurons and glia cells.[2,5] The majority of the FUS mutations have been identified in C-terminal nuclear localization signal (NLS). It has been proposed that age-related decline in nuclear import mechanisms, in combination with cellular stress and genetic risk factors may be a central underlying cause of ALS and FLTD pathology.[4]

Reagent

Supplied as a tissue culture supernatant containing 15 mM sodium azide as a preservative. The product contains fetal calf serum.

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 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 concentration of 1:1000-1:2000 is recommended using lysates of G361 cells.

Immunofluorescence: a working concentration of 1:200-1:400 is recommended using HeLa or HepG2 cells.

Immunohistochemistry: a working concentration of 1:500-1:1000 is recommended using formalin-fixed and paraffin embedded rat cerebellum.

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

References

1. Zinszner, H., et al., *J. Cell Sci.,* **110**, 1741-1750 (1997).
2. Lagier-Tourenne, C., et al., *Hum. Mol. Genet*, **19**, R46-R64 (2010).
3. Vance, C., et al., *Science*, **323**, 1208-1211 (2009).

4. Dormann, D., and Haass, C., et al., *Trends Neurosci.*, **34**, 339-348 (2011).

5. Kino, Y., et al., *Nucl. Acid Res.*, **39**, 2781-2798-(2011).

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