Human FUS Antibody

Monoclonal Mouse IgG_{2B} Clone # 1120264)

Catalog Number: MAB11793

DESCRIPTION

Species Reactivity	Human
Specificity	Detects recombinant human FUS and human TAF-15 in Direct ELISA.
Source	Monoclonal Mouse IgG_{2B} Clone # 1120264)
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli* - derived recombinant human FUS Asn263-Gly378 Accession # P35637
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.5 µg/mL	Daudi human Burkitt's lymphoma cell line, K562 human chronic myelogenous leukemia cell line and MCF-7 human breast cancer cell line
Immunohistochemistry	0.25-25 µg/mL	Immersion fixed paraffin-embedded sections of human testis
Simple Western	2-10 µg/mL	Daudi human Burkitt's lymphoma cell line

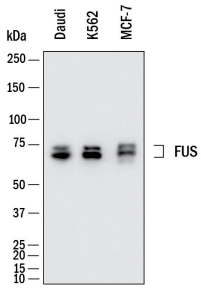
Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

Human FUS Antibody

Monoclonal Mouse IgG_{2B} Clone # 1120264)
Catalog Number: MAB11793

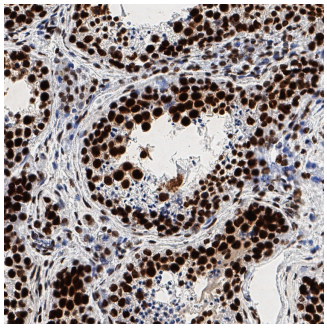
DATA

Western Blot



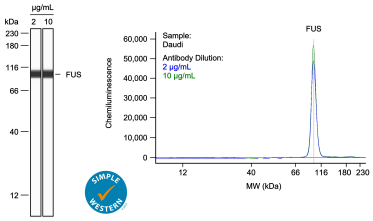
Detection of Human FUS by Western Blot. Western Blot shows lysates of Daudi human Burkitt's lymphoma cell line, K562 human chronic myelogenous leukemia cell line and MCF-7 human breast cancer cell line. PVDF membrane was probed with 0.5 µg/ml of Mouse Anti-Human FUS Monoclonal Antibody (Catalog # MAB11793) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). Specific bands were detected for FUS at approximately 70 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

Immunohistochemistry



Immersion fixed paraffin-embedded sections of human testis FUS was detected in immersion fixed paraffin-embedded sections of human testis using Mouse Anti-Human FUS Monoclonal Antibody (Catalog # MAB11793) at 5 µg/ml overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007) and counterstained with hematoxylin (blue). Specific staining was localized to the nucleus. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Simple Western



Detection of Human FUS by Simple Western™. Left: Simple Western lane view shows lysates of Daudi human Burkitt's lymphoma cell line, loaded at 0.1 mg/ml. A specific band was detected for FUS at approximately 101 kDa (as indicated) using both 2 µg/ml and 10 µg/ml of Mouse Anti-Human FUS Monoclonal Antibody (Catalog # MAB11793) followed by HRP-conjugated Goat Anti-Mouse Secondary Antibody (Catalog # 042-205). This experiment was conducted under reducing conditions and using the 12-230kDa separation system. **Right:** Simple Western electropherogram showing the same Mouse Anti-Human FUS Monoclonal Antibody (Catalog # MAB11793) tested at 2 µg/ml (blue line) and 10 µg/ml (green line) in the Daudi human Burkitt's lymphoma cell line.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

BACKGROUND

Fused in sarcoma (FUS) is a multifunctional RNA-binding protein with a molecular weight of approximately 68 kDa. FUS belongs to the family of heterogeneous nuclear ribonucleoproteins (hnRNPs) and plays critical roles in RNA metabolism, including RNA splicing, transport, translation, and stability. Beyond its functions in RNA handling, FUS contributes to DNA damage repair and transcription regulation, highlighting its importance in cellular homeostasis. FUS is ubiquitously expressed across various tissues, with predominant localization in the nucleus; however, its mislocalization to the cytoplasm is directly implicated in neurodegenerative diseases such as amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD). Mutations in the FUS gene have been identified as causative factors in familial ALS, where altered FUS protein function contributes to protein aggregation and neuronal toxicity. Additionally, FUS is involved in cellular stress responses, forming dynamic assemblies known as stress granules under adverse conditions. Aberrant FUS expression or activity has garnered attention as a key biomarker for neurodegenerative disorders and a promising target for therapeutic interventions.

References:

1. Vance C, Rogelj B, Hortobágyi T, De Vos KJ, Nishimura AL, Sreedharan J, Hu X, Smith B, Ruddy D, Wright P, Ganesalingam J, Williams KL, Tripathi V, Al-Saraj S, Al-Chalabi A, Leigh PN, Blair IP, Nicholson G, de Belleroche J, Gallo JM, Miller CC, Shaw CE. Mutations in FUS, an RNA processing protein, cause familial amyotrophic lateral sclerosis type 6. Science. 2009 Feb 27;323(5918):1208-1211. doi: 10.1126/science.1165942. PMID: 19251628; PMCID: PMC4516382.
2. Sama RR, Ward CL, Bosco DA. Functions of FUS/TLS from DNA repair to stress response: implications for ALS. ASN Neuro. 2014 Jun 1;6(4):1759091414544472. doi: 10.1177/1759091414544472. PMID: 25289647; PMCID: PMC4189536.
3. Yang S, Warraich ST, Nicholson GA, Blair IP. Fused in sarcoma/translocated in liposarcoma: a multifunctional DNA/RNA binding protein. Int J Biochem Cell Biol. 2010 Sep;42(9):1408-11. doi: 10.1016/j.biocel.2010.06.003. Epub 2010 Jun 10. PMID: 20541619.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475