SANTA CRUZ BIOTECHNOLOGY, INC.

FUS/TLS (H-6): sc-373698

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

EWS and FUS/TLS are nuclear RNA-binding proteins. As a result of chromosome translocation, the EWS gene is fused to a variety of transcription factors, including ATF-1, in human neoplasias. In the Ewing family of tumors, the N-terminal domain of EWS is fused to the DNA-binding domain of various Ets transcription factors, including Fli-1, ETV1 and FEV. The EWS/Fli-1 chimeric protein acts as a more potent transcriptional activator than Fli-1 and can promote cell transformation. In human myxoid liposarcomas and myeloid leukemias, chromosomal translocation results in the fusion of the N-terminal region of FUS/TLS with the open reading frame of CHOP. In normal cells, FUS/TLS binds to the DNA-binding domains of nuclear steroid receptors and is also present in subpopulations of TFIID complexes, indicating a potential role for FUS/TLS in the processing of primary transcripts that are generated in response to hormone-induced transcription.

CHROMOSOMAL LOCATION

Genetic locus: FUS (human) mapping to 16p11.2; Fus (mouse) mapping to 7 F3.

SOURCE

FUS/TLS (H-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of FUS/TLS of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FUS/TLS (H-6) is available conjugated to agarose (sc-373698 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373698 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373698 PE), fluorescein (sc-373698 FITC), Alexa Fluor® 488 (sc-373698 AF488), Alexa Fluor® 546 (sc-373698 AF546), Alexa Fluor® 594 (sc-373698 AF594) or Alexa Fluor® 647 (sc-373698 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373698 AF680) or Alexa Fluor® 790 (sc-373698 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373698 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

FUS/TLS (H-6) is recommended for detection of FUS/TLS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

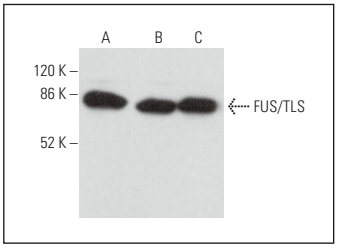
Suitable for use as control antibody for FUS/TLS siRNA (h): sc-40563, FUS/TLS siRNA (m): sc-40564, FUS/TLS shRNA Plasmid (h): sc-40563-SH, FUS/TLS shRNA Plasmid (m): sc-40564-SH, FUS/TLS shRNA (h) Lentiviral Particles: sc-40563-V and FUS/TLS shRNA (m) Lentiviral Particles: sc-40564-V.

Molecular Weight of FUS/TLS: 75 kDa.

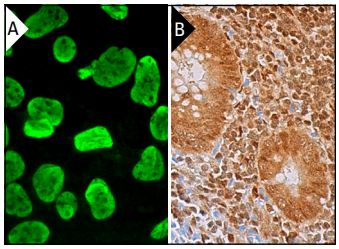
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



FUS/TLS (H-6): sc-373698. Western blot analysis of FUS/TLS expression in THP-1 (**A**), NIH/3T3 (**B**) and RAW 264.7 (**C**) whole cell lysates.



FUS/TLS (H-6): sc-373698. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing nuclear and cytoplasmic staining of glandular cells and lymphoid cells (**B**).

SELECT PRODUCT CITATIONS

1. Suzuki, H. and Matsuoka, M. 2015. Overexpression of nuclear FUS induces neuronal cell death. Neuroscience 287: 113-124.
2. Samson, A.L., et al. 2016. Physicochemical properties that control protein aggregation also determine whether a protein is retained or released from necrotic cells. Open Biol. 6: 160098.
3. Trautmann, M., et al. 2017. FUS-DDIT3 fusion protein-driven IGF-IR signaling is a therapeutic target in myxoid liposarcoma. Clin. Cancer Res. 23: 6227-6238.
4. Conlon, E.G., et al. 2018. Unexpected similarities between C9ORF72 and sporadic forms of ALS/FTD suggest a common disease mechanism. Elife 7: e37754.
5. Tischbein, M., et al. 2019. The RNA-binding protein FUS/TLS undergoes calcium-mediated nuclear egress during excitotoxic stress and is required for GRIA2 mRNA processing. J. Biol. Chem. 294: 10194-10210.
6. Owen, I., et al. 2020. The prion-like domain of FUS is phosphorylated by multiple kinases affecting liquid- and solid-phase transitions. Mol. Biol. Cell 31: 2522-2536.
7. Salam, S., et al. 2021. Identification of a novel interaction of FUS and syntaphilin may explain synaptic and mitochondrial abnormalities caused by ALS mutations. Sci. Rep. 11: 13613.
8. Tsai, Y.L., et al. 2022. Nuclear RNA transcript levels modulate nucleocytoplasmic distribution of ALS/FTD-associated protein FUS. Sci. Rep. 12: 8180.

RESEARCH USE

For research use only, not for use in diagnostic procedures.