




## Product datasheet

### Anti-TLS/FUS antibody [CL0190] ab154141

KO VALIDATED

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#### Overview

Product name	Anti-TLS/FUS antibody [CL0190]
Description	Mouse monoclonal [CL0190] to TLS/FUS
Host species	Mouse
Tested applications	<b>Suitable for:</b> IHC-P, WB, ICC/IF
Species reactivity	<b>Reacts with:</b> Human <b>Predicted to work with:</b> Mouse, Rat 
Immunogen	Recombinant fragment, corresponding to amino acids 86-213 of Human TLS/FUS.  <a href="#">Run BLAST with ExPASy</a>  <a href="#">Run BLAST with NCBI</a>
Positive control	IHC-P: Human kidney, stomach, prostate and pancreas tissues. WB: Hap1, HEK-293T, K562, HepG2 and U-251 cell lysates. ICC/IF: HeLa cells.
General notes	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&amp;As</p>

#### Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid repeated freeze / thaw cycles.
Storage buffer	pH: 7.20 Preservative: 0.02% Sodium azide Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine)
Purity	Protein A purified
Clonality	Monoclonal
Clone number	CL0190
Isotype	IgG1

## Applications

### The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab154141 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P		1/2500 - 1/5000. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.
WB		1/500 - 1/1000. Predicted molecular weight: 53 kDa.
ICC/IF		Use a concentration of 1 - 4 µg/ml. Fixation/Permeabilization: PFA/Triton X-100.

## Target

### Function

Binds both single-stranded and double-stranded DNA and promotes ATP-independent annealing of complementary single-stranded DNAs and D-loop formation in superhelical double-stranded DNA. May play a role in maintenance of genomic integrity.

### Tissue specificity

Ubiquitous.

### Involvement in disease

Note=A chromosomal aberration involving FUS is found in a patient with malignant myxoid liposarcoma. Translocation t(12;16)(q13;p11) with DDIT3.

Note=A chromosomal aberration involving FUS is a cause of acute myeloid leukemia (AML). Translocation t(16;21)(p11;q22) with ERG.

Defects in FUS may be a cause of angiomatoid fibrous histiocytoma (AFH) [MIM:612160]. A distinct variant of malignant fibrous histiocytoma that typically occurs in children and adolescents and is manifest by nodular subcutaneous growth. Characteristic microscopic features include lobulated sheets of histiocyte-like cells intimately associated with areas of hemorrhage and cystic pseudovascular spaces, as well as a striking cuffing of inflammatory cells, mimicking a lymph node metastasis. Note=A chromosomal aberration involving FUS is found in a patient with angiomatoid fibrous histiocytoma. Translocation t(12;16)(q13;p11.2) with ATF1 generates a chimeric FUS/ATF1 protein.

Defects in FUS are the cause of amyotrophic lateral sclerosis type 6 (ALS6) [MIM:608030]. ALS6 is a familial form of amyotrophic lateral sclerosis. ALS is a neurodegenerative disorder affecting upper motor neurons in the brain and lower motor neurons in the brain stem and spinal cord, resulting in fatal paralysis. Sensory abnormalities are absent. Death usually occurs within 2 to 5 years. The etiology of amyotrophic lateral sclerosis is likely to be multifactorial, involving both genetic and environmental factors. The disease is inherited in 5-10%.

### Sequence similarities

Belongs to the RRM TET family.

Contains 1 RanBP2-type zinc finger.

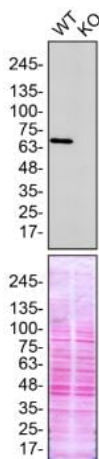
Contains 1 RRM (RNA recognition motif) domain.

### Post-translational modifications

Arg-216 and Arg-218 are dimethylated, probably to asymmetric dimethylarginine.

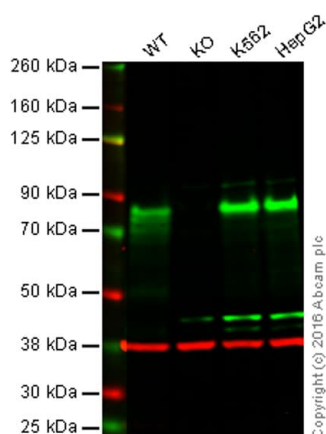
### Cellular localization

Nucleus.



Western blot - Anti-TLS/FUS antibody [CL0190]  
(ab154141)

ab154141 was shown to react with FUS in wild-type HeLa cells in Western blot with loss of signal observed in a FUS knockout cell line. Wild-type HeLa and FUS knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab154141 overnight at 4 °C at a 1/1000 dilution. Blots were incubated with secondary antibodies at 1/5000 before imaging. These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.



Western blot - Anti-TLS/FUS antibody [CL0190]  
(ab154141)

**All lanes :** Anti-TLS/FUS antibody [CL0190] (ab154141) at 1/500 dilution

**Lane 1 :** Wild-type HAP1 cell lysate

**Lane 2 :** TLS/FUS knockout HAP1 cell lysate

**Lane 3 :** K562 cell lysate

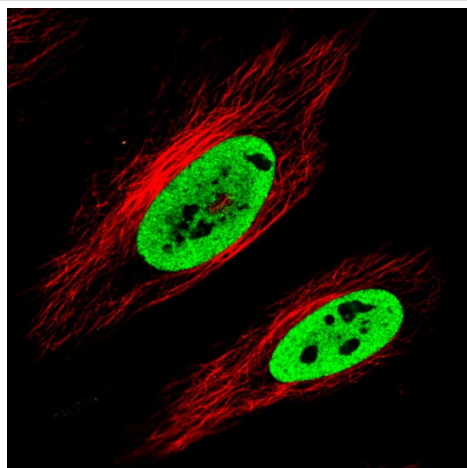
**Lane 4 :** HepG2 cell lysate

Lysates/proteins at 20 µg per lane.

**Predicted band size:** 53 kDa

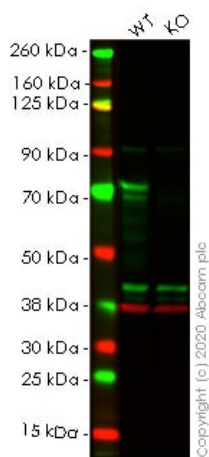
**Lanes 1 -4:** Merged signal (red and green). Green - ab154141 observed at 80 kDa. Red - loading control, **ab181602**, observed at 37 kDa.

ab154141 was shown to specifically react with TLS/FUS when TLS/FUS knockout samples were used. Wild-type and TLS/FUS knockout samples were subjected to SDS-PAGE. ab154141 and **ab181602** (loading control to GAPDH) were diluted at 1/500 and 1/10000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (**ab216772**) and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (**ab216777**) secondary antibodies at 1/10000 dilution for 1 h at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-TLS/FUS antibody [CL0190] (ab154141)

Immunocytochemistry/Immunofluorescence analysis of HeLa cells labelling TLS/FUS with ab154141 showing nuclear (without nucleoli) staining in green. Microtubule are visualized in red.



Western blot - Anti-TLS/FUS antibody [CL0190] (ab154141)

**All lanes :** Anti-TLS/FUS antibody [CL0190] (ab154141) at 1/500 dilution

**Lane 1 :** Wild-type HEK-293T cell lysate

**Lane 2 :** FUS knockout HEK-293T cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

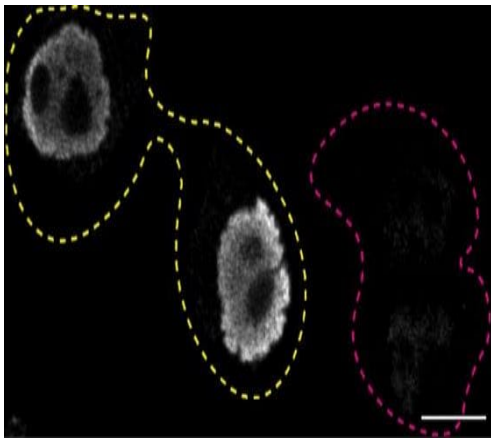
**Predicted band size:** 53 kDa

**Observed band size:** 80 kDa

**Lanes 1- 2:** Merged signal (red and green). Green - ab154141 observed at 80 kDa. Red - Anti-GAPDH antibody[EPR16891] - Loading Control ([ab181602](#)) observed at 37 kDa.

ab154141 was shown to react with TLS/FUS in wild-type HEK-293T cells in western blot. Loss of signal was observed when knockout cell line [ab266587](#) (knockout cell lysate [ab257100](#)) was used. Wild-type HEK-293T and FUS knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab154141 and Anti-GAPDH antibody[EPR16891] - Loading Control ([ab181602](#)) overnight at 4°C at a 1 in 500 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye®800CW) preadsorbed ([ab216772](#)) and Goat Anti-Rabbit IgG H&L (IRDye®680RD) preadsorbed

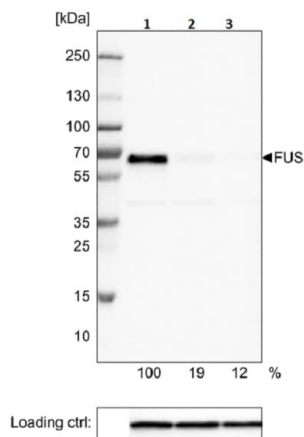
([ab216777](#)) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-TLS/FUS antibody [CL0190] (ab154141)

ab154141 was shown to react with FUS in wild-type HeLa cells in Immunocytochemistry with loss of signal observed in a FUS knockout cell line. Wild-type and Knockout cells were mixed and pelleted at a 1:1 ratio on coverslips. The cells were fixed with 4% paraformaldehyde (15 min) then permeabilized with 0.1% Triton X-100 (10min) and then blocked with 5%BSA+5%goat serum (30min). The cells were then incubated with ab154141 at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat anti-mouse secondary antibody to (Alexa Fluor® 555) at 0.5 µg/ml. Acquisition of the green (wild-type), red (antibody staining) and far-red (knockout) channels was performed. Representative grayscale images of the red channel are shown. Wild-type and knockout cells are outlined with yellow and magenta dashed line, respectively. Schematic representation of the mosaic strategy used is shown on the bottom-right panel. Image was acquired with a Zeiss(LSM-880).

These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.



Western blot - Anti-TLS/FUS antibody [CL0190] (ab154141)

**All lanes :** Anti-TLS/FUS antibody [CL0190] (ab154141)

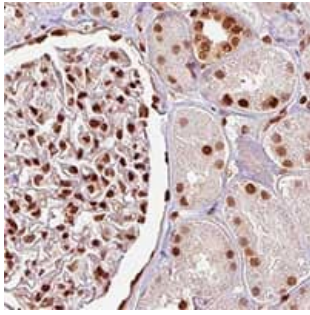
**Lane 1 :** U-251 cells, transfected with control siRNA

**Lane 2 :** U-251 cells, transfected with target specific siRNA probe #1

**Lane 3 :** U-251 cells, transfected with target specific siRNA probe #2

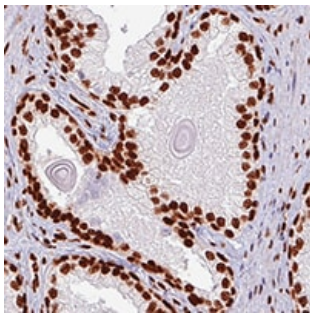
**Predicted band size:** 53 kDa

Downregulation of antibody signal confirms target specificity. Remaining % intensity, relative control lane, is indicated. Anti-GAPDH monoclonal antibody was used as loading control.



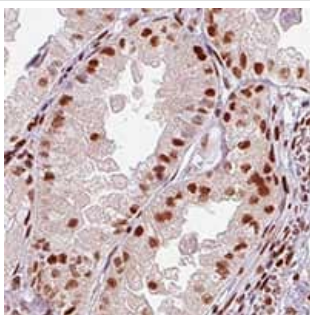
Immunohistochemical analysis of Human kidney tissue labeling TLS/FUS with ab154141 at 1/2500 dilution.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TLS/FUS antibody [CL0190] (ab154141)



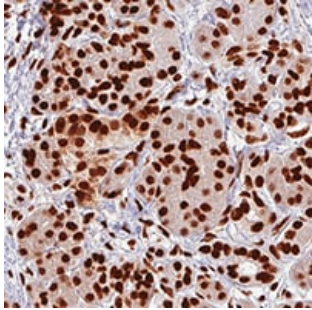
Immunohistochemical analysis of Human prostate tissue labeling TLS/FUS with ab154141 at 1/2500 dilution.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TLS/FUS antibody [CL0190] (ab154141)



Immunohistochemical analysis of Human stomach tissue labeling TLS/FUS with ab154141 at 1/2500 dilution.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TLS/FUS antibody [CL0190] (ab154141)



Immunohistochemical analysis of Human pancreas tissue labeling TLS/FUS with ab154141 at 1/2500 dilution.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TLS/FUS antibody [CL0190] (ab154141)

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