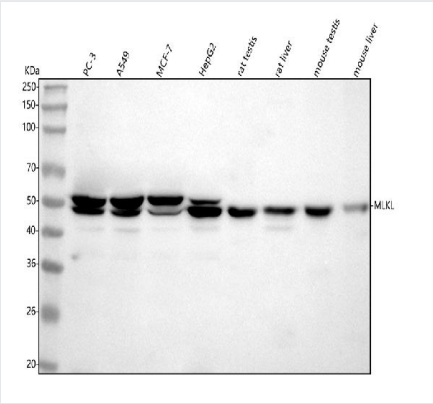
MLKL Antibody – Rabbit Polyclonal

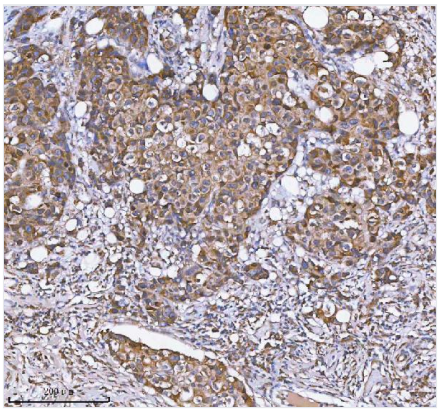
PRODUCT OVERVIEW

Product Name	MLKL, Polyclonal Antibody
Full Product Name	Anti-MLKL Antibody Picoband
Product Gene Name	anti-MLKL antibody
Product Synonym Names	Serine/threonine-protein kinase AtPK1/AtPK6; 70 kDa ribosomal protein S6 kinase 1 antibody, KS6B1_HUMAN antibody, p70 alpha antibody, P70 beta 1 antibody, p70 ribosomal S6 kinase alpha antibody, p70 ribosomal S6 kinase beta 1 antibody, p70 S6 kinase alpha antibody, P70 S6 Kinase antibody, p70 S6 kinase alpha 1 antibody, p70 S6 kinase alpha 2 antibody, p70 S6K antibody, p70 S6K-alpha antibody, p70 S6KA antibody, p70(S6K) alpha antibody, p70(S6K)-alpha antibody, p70-alpha antibody, p70-S6K 1 antibody, p70-S6K antibody, P70S6K antibody, P70S6K1 antibody, p70S6Kb antibody, PS6K antibody, Ribosomal protein S6 kinase 70kDa polypeptide 1 antibody, Ribosomal protein S6 kinase beta 1 antibody, Ribosomal protein S6 kinase beta-1 antibody, Ribosomal protein S6 kinase I antibody, RPS6KB1 antibody, S6K antibody, S6K-beta-1 antibody, S6K1 antibody, Serine/threonine kinase 14 alpha antibody, Serine/threonine-protein kinase 14A antibody, STK14A antibody
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Lyophilized. Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
Purity/Purification	Immunogen affinity purified.
Specificity	Expressed in all tissues.
Preparation and Storage	At -20 degree C for one year from date of receipt. After reconstitution, at 4 degree C for one month. It can also be aliquotted and stored frozen at -20 degree C for six months.Avoid repeated freezing and thawing.
Molecular Weight	54,479 Da
Chromosome Location	Chromosome: 16; NC_000016.9 (74705753..74734789, complement). Location: 16q23.1
3D Structure	ModBase 3D Structure for Q8NB16
Immunogen	E coli-derived human MLKL recombinant protein (Position: R210-K464). Human MLKL shares 69.7% amino acid (aa) sequence identity with mouse MLKL.
Subcellular Localization	Cytoplasm, Nucleus
Reconstitution	Adding 0.2 ml of distilled water will yield a concentration of 500ug/ml.
Cross Reactivity	No cross reactivity with other proteins.
Protein Function	Downstream effector of TOR signaling pathway involved in osmotic stress response. Could be involved in the control of plant growth and development. Phosphorylates the ribosomal proteins P14, P16 and S6. Functions as a repressor of cell proliferation and required for maintenance of chromosome stability and ploidy levels through the RBR1-E2F pathway.
Product Categories/Family for anti-MLKL antibody	Primary Antibodies; Signal Transduction; Signaling Pathway; Small G Proteins
ISO Certification	Manufactured in an ISO 13485:2003 and EN ISO 13485:2012 Certified Laboratory.
Applications Tested/Suitable for anti-MLKL antibody	Western Blot (WB), Immunohistochemistry (IHC), Immunocytochemistry (ICC), Immunofluorescence (IF), Flow Cytometry (FC/FACS), ELISA (EIA)

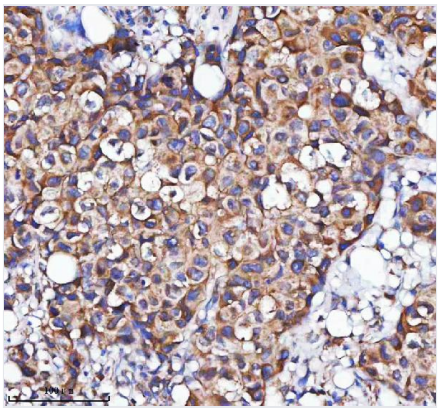
Application Notes for anti-MLKL antibody	WB: 0.25-0.5ug/ml, Human, Mouse, Rat IHC: 2-5ug/ml, Human ICC/IF: 5ug/ml, Human FC/FACS (Fixed): 1-3ug/1x10^6 cells, Human ELISA: 0.1-0.5ug/ml
Related Product Information for anti-MLKL antibody	The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Product References and Citations for anti-MLKL antibody	1. Dastani, Z., Pajukanta, P., Marcil, M., Rudzicz, N., Ruel, I., Bailey, S. D., Lee, J. C., Lemire, M., Faith, J., Platko, J., Rioux, J., Hudson, T. J., Gaudet, D., Engert, J. C., Genest, J. Fine mapping and association studies of a high-density lipoprotein cholesterol linkage region on chromosome 16 in French-Canadian subjects. Europ. J. Hum. Genet. 18: 342-347, 2010.2. Sun, L., Wang, H., Wang, Z., He, S., Chen, S., Liao, D., Wang, L., Yan, J., Liu, W., Lei, X., Wang, X. Mixed lineage kinase domain-like protein mediates necrosis signaling downstream of RIP3 kinase. Cell 148: 213-227, 2012.3. Wang, Z., Jiang, H., Chen, S., Du, F., Wang, X. The mitochondrial phosphatase PGAM5 functions at the convergence point of multiple necrotic death pathways. Cell 148: 228-243, 2012.
Other Notes	Small volumes of anti-MLKL antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for MLKL purchase	MBS1758089 is an antibody targeting MLKL. Also known as Anti-MLKL Antibody Picoband. Reactive in Human, Mouse, Rat. Host: Rabbit.



Western Blot (WB) of anti-MLKL antibody
Figure 1. Western blot analysis of MLKL using anti-MLKL antibody (MBS1758089).Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel)/90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.Lane 1: human PC-3 whole cell lysates,Lane 2: human A549 whole cell lysates,Lane 3: human MCF-7 whole cell lysates,Lane 4: human HepG2 whole cell lysates,Lane 5: rat testis tissue lysates,Lane 6: rat liver tissue lysates,Lane 7: mouse testis tissue lysates,Lane 8: mouse liver tissue lysates.After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-MLKL antigen affinity purified polyclonal antibody (#MBS1758089) at 0.5ug/mL overnight at 4 degree C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (#MBS176460) with Tanon 5200 system. A specific band was detected for MLKL at approximately 50 kDa. The expected band size for MLKL is at 54 kDa.

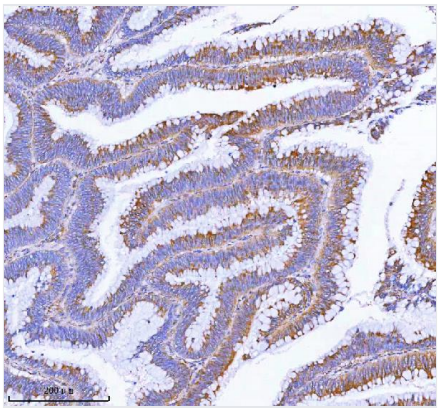


Immunohistochemistry (IHC) of anti-MLKL antibody
Figure 2. IHC analysis of MLKL using anti-MLKL antibody (MBS1758089).MLKL was detected in a paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2ug/ml rabbit anti-MLKL Antibody (MBS1758089) overnight at 4 degree C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 degree C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (#MBS176453) with DAB as the chromogen.



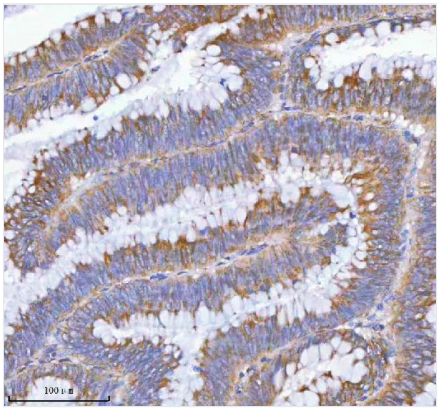
Immunohistochemistry (IHC) of anti-MLKL antibody

Figure 3. IHC analysis of MLKL using anti-MLKL antibody (MBS1758089).MLKL was detected in a paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2ug/ml rabbit anti-MLKL Antibody (MBS1758089) overnight at 4 degree C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 degree C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (#MBS176453) with DAB as the chromogen.



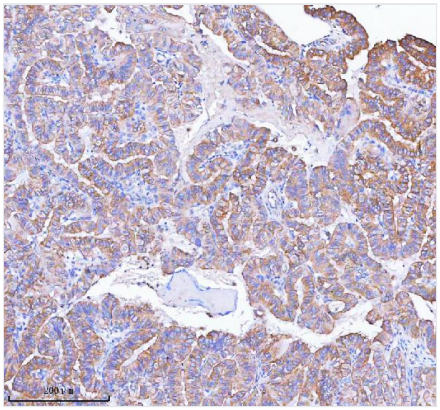
Immunohistochemistry (IHC) of anti-MLKL antibody

Figure 4. IHC analysis of MLKL using anti-MLKL antibody (MBS1758089).MLKL was detected in a paraffin-embedded section of human colon adenocarcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2ug/ml rabbit anti-MLKL Antibody (MBS1758089) overnight at 4 degree C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 degree C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (#MBS176453) with DAB as the chromogen.



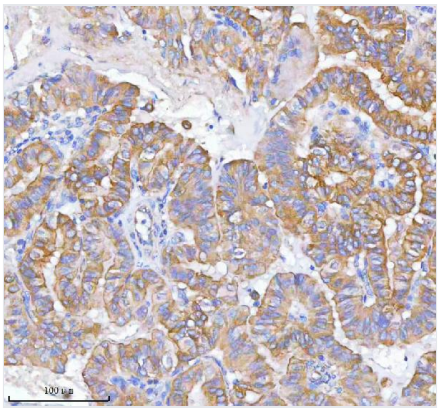
Immunohistochemistry (IHC) of anti-MLKL antibody

Figure 5. IHC analysis of MLKL using anti-MLKL antibody (MBS1758089).MLKL was detected in a paraffin-embedded section of human colon adenocarcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2ug/ml rabbit anti-MLKL Antibody (MBS1758089) overnight at 4 degree C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 degree C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (#MBS176453) with DAB as the chromogen.

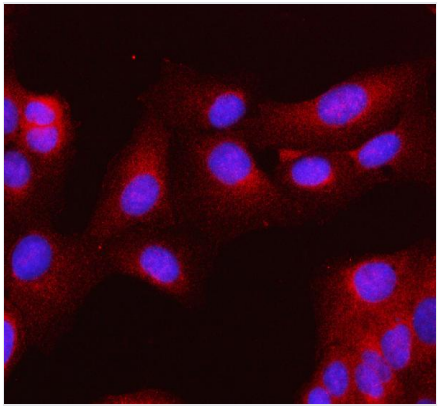


Immunohistochemistry (IHC) of anti-MLKL antibody

Figure 6. IHC analysis of MLKL using anti-MLKL antibody (MBS1758089).MLKL was detected in a paraffin-embedded section of human thyroid papillary carcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2ug/ml rabbit anti-MLKL Antibody (MBS1758089) overnight at 4 degree C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 degree C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (#MBS176453) with DAB as the chromogen.



Immunohistochemistry (IHC) of anti-MLKL antibody
Figure 7. IHC analysis of MLKL using anti-MLKL antibody (MBS1758089).MLKL was detected in a paraffin-embedded section of human thyroid papillary carcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2ug/ml rabbit anti-MLKL Antibody (MBS1758089) overnight at 4 degree C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 degree C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (#MBS176453) with DAB as the chromogen.



Immunofluorescence (IF) of anti-MLKL antibody
Figure 8. IF analysis of MLKL using anti-MLKL antibody (MBS1758089).MLKL was detected in an immunocytochemical section of U2OS cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (#MBS176582) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5ug/mL rabbit anti-MLKL Antibody (MBS1758089) overnight at 4 degree C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37 degree C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for MLKL. It may not necessarily be applicable to this product.

NCBI GI #	215820622
NCBI GeneID	197259
NCBI Accession #	NP_001135969.1
UniProt Primary Accession #	Q8NB16
UniProt Secondary Accession #	Q8N6V0; A6NCE4
UniProt Related Accession #	Q8NB16
GenBank Nucleotide #	NM_001142497.1
NCBI Official Full Name	mixed lineage kinase domain-like protein isoform 2
NCBI Official Synonym Full Names	mixed lineage kinase domain-like
NCBI Official Symbol	MLKL
UniProt Protein Name	Mixed lineage kinase domain-like protein
Protein Family	Mixed lineage kinase domain-like protein
UniProt Gene Name	MLKL
UniProt Entry Name	MLKL_HUMAN
NCBI Protein Information	mixed lineage kinase domain-like protein
NCBI Summary for MLKL	This gene belongs to the protein kinase superfamily. The encoded protein contains a protein kinase-like domain; however, is thought to be inactive because it lacks several residues required for activity. This protein plays a critical role in tumor necrosis factor (TNF)-induced necroptosis, a programmed cell death process, via interaction with receptor-interacting protein 3 (RIP3), which is a key signaling molecule in necroptosis pathway. Inhibitor studies and knockdown of this gene inhibited TNF-induced necrosis. High levels of this protein and RIP3 are associated with inflammatory bowel disease in children. Alternatively spliced transcript variants have been described for this gene. [provided by RefSeq, Sep 2015]

UniProt Comments for MLKL	MLKL: Belongs to the protein kinase superfamily. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Kinase, protein; Protein kinase, TKL; Protein kinase, Ser/Thr (non-receptor); TKL group; TKL-Unique family Chromosomal Location of Human Ortholog: 16q23.1 Cellular Component: cytoplasm; plasma membrane Molecular Function: protein binding; protein complex binding; protein kinase binding; ATP binding; protein kinase activity Biological Process: protein amino acid phosphorylation
Research Articles on MLKL	**1.** study suggests that MLKL is a key RIP3 downstream component of TNF-induced necrotic cell death
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