Revision 1

Store at -20C

#3088

TH1L Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R Mk	Endogenous	66	Rabbit	#Q8IXH7	51497

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

TH1L Antibody recognizes endogenous levels of total TH1L protein.

Species predicted to react based on 100% sequence homology

Hamster, Chicken, Xenopus, Bovine, Dog, Pig, Horse, Guinea Pig

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala132 of human TH1L protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Negative Elongation Factor (NELF) consists of four subunits: WHSC2 (NELF-A), COBRA-1 (NELF-B), TH1L (NELF-C/D), and NELF-E (1). NELF, together with DRB-sensitivity inducing factor (DSIF), inhibits RNA Polymerase II (RNAPII) elongation resulting in RNAPII promoter proximal pausing, where it waits additional signaling to resume transcription (2,3). The release of RNAPII from promoter proximal pausing is a critical regulatory point during transcription and is signaled by positive transcription elongation factor (p-TEF-b) phosphorylation of both NELF and the carboxy-terminal domain (CTD) within the largest subunit of RNAPII (3,4). WHSC2 is thought to connect the NELF complex to RNAPII machinery, while NELF-E contains an RNA binding motif that is necessary for NELF function (1,5,6). TH1L, together with COBRA-1, are integral subunits that bring WHSC2 and NELF-E together in the NELF complex (1).
In addition to its role in transcription regulation, TH1L is a negative regulator of MAPK signaling by inhibiting A-Raf and PAK1 kinase activities. Research studies have shown that TH1L expression is negatively correlated with breast cancer proliferation and migration (7-9).

Background References

1. Narita, T. et al. (2003) *Mol Cell Biol* 23, 1863-73.
2. Nechaev, S. and Adelman, K. (2011) *Biochim Biophys Acta* 1809, 34-45.
3. Yamaguchi, Y. et al. (1999) *Cell* 97, 41-51.
4. Buratowski, S. (2009) *Mol Cell* 36, 541-6.
5. Yamaguchi, Y. et al. (2001) *Science* 293, 124-7.
6. Yamaguchi, Y. et al. (2002) *Mol Cell Biol* 22, 2918-27.
7. Cheng, C. et al. (2009) *J Biol Chem* 284, 8786-96.
8. Liu, W. et al. (2004) *J Biol Chem* 279, 10167-75.
9. Zou, W. et al. (2010) *Cancer Sci* 101, 2156-62.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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