Revision 1

Store at -20C

#13608

Phospho-TTF-1 (Ser327) 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	Endogenous	42	Rabbit	#P43699	7080

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

Phospho-TTF-1 (Ser327) Antibody recognizes endogenous levels of TTF-1 protein only when phosphorylated at Ser327.

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser327 of human TTF-1 protein.

Background

Thyroid Transcription Factor 1 (TTF-1, also known as NKX2-1), a member of the NKX homeobox transcription factor family, was initially discovered in the FRTL-5 rat thyroid cell line (1). Subsequent studies have shown that TTF-1 plays an important role in differentiation and morphogenesis of the developing thyroid, lung, and ventral forebrain (2). TTF-1 controls the expression of several genes, some of which are tissue specific, such as: thyroglobulin, thyroperoxidase, and the thyrotropin receptor in the thyroid; and surfactant proteins and clara cell secretory protein in the lung (2,3). Investigators have found that TTF-1 is expressed in malignant tumors of the thyroid and lung, and it is commonly used as a marker for both primary and malignant lung cancers (4-6).
Research studies have shown that activation of the Raf/MEK/ERK signaling pathway results in phosphorylation of TTF-1 at multiple residues, including Ser18, Ser327, and Ser337 (7). Concomitant phosphorylation at these residues was shown to suppress the transcriptional activity of TTF-1 in a rat follicular thyroid cell model (7). These findings are consistent with previous studies demonstrating a reduction in thyroid-specific gene expression in Ras-transformed thyroid cells (8,9).

Background References

1. Civitareale, D. et al. (1989) *EMBO J* 8, 2537-42.
2. Boggaram, V. (2009) *Clin Sci (Lond)* 116, 27-35.
3. Yamaguchi, T. et al. (2012) *Cancer Cell* 21, 348-61.
4. Whithaus, K. et al. (2012) *Arch Pathol Lab Med* 136, 155-62.
5. Yoshida, A. et al. (2011) *Lung Cancer* 72, 309-15.
6. Moldvay, J. et al. (2004) *Pathol Oncol Res* 10, 85-8.
7. Missero, C. et al. (2000) *Mol Cell Biol* 20, 2783-93.
8. Cobellis, G. et al. (1998) *Oncogene* 17, 2047-57.
9. Kupperman, E. et al. (1996) *Endocrinology* 137, 96-104.

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 BSA, 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

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