Revision 3

Store at -20C

#69926

MMP-13 (E4W3T) Rabbit mAb

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	H	Endogenous	60	Rabbit IgG	#P45452	4322

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

Specificity/Sensitivity

MMP-13 (E4W3T) Rabbit mAb recognizes endogenous levels of total human MMP13 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a recombinant protein specific to the carboxy terminus of human MMP13 protein.

Background

MMP-13 (collagenase 3) belongs to the matrix metalloproteinase (MMP) superfamily of enzymes that targets many extracellular proteins, including other proteases, growth factors, cell surface receptors, and adhesion molecules (1,2). MMP-13 is a member of a subgroup of collagenases (including MMP-1, MMP-8, and MMP-18) that play an even more important function targeting fibrillar collagen. MMP-13 is synthesized as a latent proenzyme, and proteolytic removal of the inhibitory propeptide domain is required for enzyme activation. MMP-13 protein levels are regulated at the transcriptional level via specific transcription factors and promoter DNA methylation (3,4). MMP-13 preferentially cleaves Type II collagen, and research studies have shown that aberrant upregulation of MMP-13 activity can lead to cartilage loss and osteoarthritis (5,6). In addition, MMP-13 has been shown to promote cancer development, in part through enhancing tumor angiogenesis and metastases (7-9), suggesting that collagenase activity may serve as a useful marker of tumor progression (10).

Background References

1. McCawley, L.J. and Matrisian, L.M. (2001) *Curr Opin Cell Biol* 13, 534-40.
2. Cathcart, J. et al. (2015) *Genes Dis* 2, 26-34.
3. Chan, C.M. et al. (2017) *J Biol Chem* 292, 1625-36.
4. Hashimoto, K. et al. (2013) *J Biol Chem* 288, 10061-72.
5. Elayyan, J. et al. (2017) *FASEB J* 31, 3116-25.
6. Wang, M. et al. (2011) *Ann N Y Acad Sci* 1240, 61-9.
7. Mendonsa, A.M. et al. (2015) *Mol Cancer* 14, 49.
8. Wang, C. et al. (2015) *Oncotarget* 6, 2903-16.
9. Kudo, Y. et al. (2012) *J Biol Chem* 287, 38716-28.
10. Brinckerhoff, C.E. et al. (2000) *Clin Cancer Res* 6, 4823-30.

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

Cross-Reactivity Key

H: Human

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Limited Uses

force or effect.

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