Revision 1

Store at -20C

#39952

# COL1A1 (E6A8E) 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, IP, IF-IC | H | Endogenous | 220 | Rabbit IgG | #P02452 | 1277 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |
| Immunoprecipitation | 1:50 |
| Immunofluorescence (Immunocytochemistry) | 1:400 - 1:1600 |

## 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

COL1A1 (E6A8E) Rabbit mAb recognizes endogenous levels of total COL1A1 protein.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Lys170 of human COL1A1 protein.

## Background

Type 1 collagen is the most abundant collagen in many human tissues, including bone, skin, and tendons. It is a trimeric complex composed of two molecules of COL1A1 (alpha-1 type 1 collagen) and one molecule of COL1A2 (alpha-2 type 1 collagen) (1-3). The expression levels of COL1A1 are regulated by multiple mechanisms, including mRNA stability, translation, and post-translational modification (3-5). Overexpression of COL1A1 has been positively associated with tissue fibrosis disorders, including systemic sclerosis (6), while loss-of-function mutations in the *COL1A1* gene are a major causative factor for osteogenesis imperfecta (brittle bone disease) (7). Notably, COL1A1 expression levels have also been associated with tumor development in gastric, lung, thyroid, and breast cancers. Research studies suggest that upregulation of COL1A1 can generate a modified extracellular matrix environment that promotes cancer cell survival, proliferation, metastasis, and invasion (8-11).

## Background References

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5. Cai, L. et al. (2010) *J Mol Biol* 395, 309-26.
6. Jimenez, S.A. and Saitta, B. (1999) *Springer Semin Immunopathol* 21, 397-414.
7. Forlino, A. et al. (2011) *Nat Rev Endocrinol* 7, 540-57.
8. Li, J. et al. (2016) *World J Surg Oncol* 14, 297.
9. Oleksiewicz, U. et al. (2017) J Cancer Res Clin Oncol 143, 1133-41.
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11. Jolly, L.A. et al. (2016) *Cancer Res* 76, 1804-13.

## 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 **IF-IC:** Immunofluorescence (Immunocytochemistry)

## Cross-Reactivity Key

**H:** Human

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## Limited Uses

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