

Store at  
-20°C

# Malic Enzyme 2 (E1N3E) XP® Rabbit mAb

#15506

Cell Signaling  
TECHNOLOGY®Support: +1-978-867-2388 (U.S.)  
www.cellsignal.com/supportOrders: 877-616-2355 (U.S.)  
orders@cellsignal.comEntrez-Gene ID #4200  
UniProt ID #P23368

New 09/17

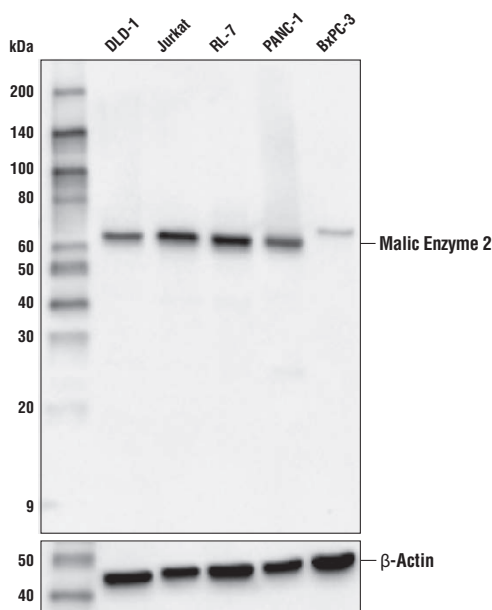
For Research Use Only. Not For Use In Diagnostic Procedures.

Applications  
W, IHC-P, IF-IC  
EndogenousSpecies Cross-Reactivity\*  
H, MkMolecular Wt.  
65 kDaIsotype  
Rabbit IgG\*\*

**Background:** Malic enzyme catalyzes oxidative decarboxylation of malate to pyruvate (1). The malic enzyme family in mammalian cells includes the cytosolic malic enzyme 1 (ME1) and two mitochondrial malic enzymes (ME2 and ME3) (1, 2). ME1 and ME2 are critical for tumor cell growth and their expression is repressed by tumor suppressor p53 (2). Reduced expression of *ME1* and *ME2* reciprocally increases the levels and activation of p53, promoting p53-mediated senescence (2). Furthermore, studies show that ME3 is essential for the survival of the pancreatic ductal adenocarcinoma where *ME2* is lost in the *SMAD4* locus (3). Deletion of *ME3* is lethal to these *ME2*-null cancer cells, which presents the collateral lethality therapeutic opportunity in the cancer treatment (3, 4).

**Specificity/Sensitivity:** Malic Enzyme 2 (E1N3E) XP® Rabbit mAb recognizes endogenous levels of total malic enzyme 2 protein. This antibody does not cross-react with malic enzyme 1 and malic enzyme 3 proteins.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro364 of human malic enzyme 2 protein.



Western blot analysis of extracts from various cell lines using Malic Enzyme 2 (E1N3E) XP® Rabbit mAb (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower).

**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.

\*Species cross-reactivity is determined by western blot.

\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

**Recommended Antibody Dilutions:**

Western blotting 1:1000  
Immunohistochemistry (Paraffin) 1:200†  
Unmasking buffer: SignalStain® Citrate Unmasking Solution (10X) #14746  
Antibody diluent: SignalStain® Antibody Diluent #8112  
Detection reagent: SignalStain® Boost (HRP, Rabbit) #8114  
† Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.  
Immunofluorescence (IF-IC) 1:400  
IF Protocol: Methanol Permeabilization Required

For product specific protocols and a complete listing of recommended companion products please see the product web page at [www.cellsignal.com](http://www.cellsignal.com)

**Background References:**

- (1) Pongratz, R.L. et al. (2007) *J Biol Chem* 282, 200-7.
- (2) Jiang, P. et al. (2013) *Nature* 493, 689-93.
- (3) Dey, P. et al. (2017) *Nature* 542, 119-123.
- (4) Muller, F.L. et al. (2015) *Trends Cancer* 1, 161-173.

DRAQ5 is a registered trademark of Biostatus Limited.  
Tween is a registered trademark of ICI Americas, Inc.

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

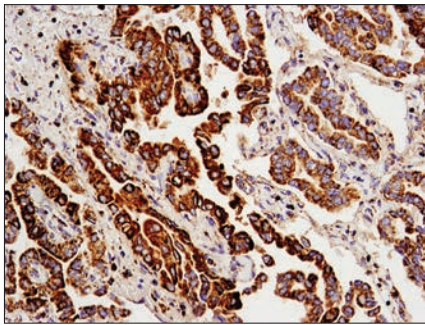
Thank you for your recent purchase. If you would like to provide a review visit [cellsignal.com/comments](http://cellsignal.com/comments).

[www.cellsignal.com](http://www.cellsignal.com)

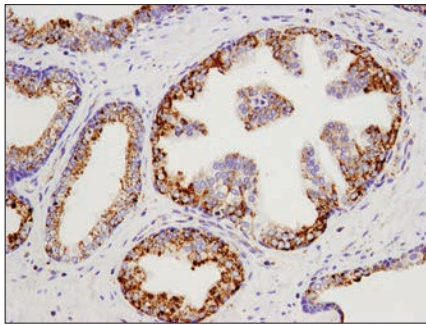
© 2017 Cell Signaling Technology, Inc.

XP, SignalStain and Cell Signaling Technology are trademarks of Cell Signaling Technology, Inc.

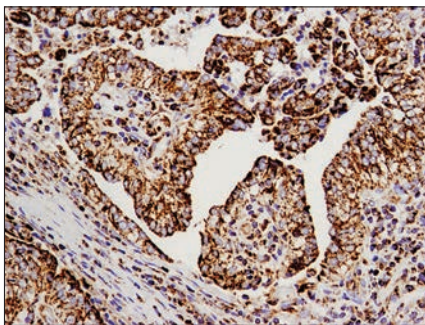
Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide Species Cross-Reactivity: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



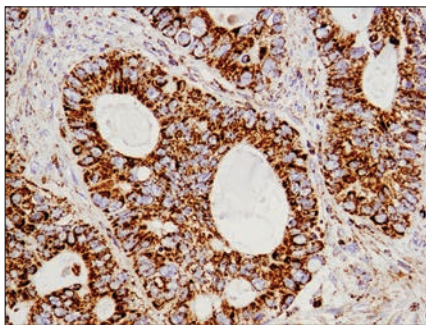
Immunohistochemical analysis of paraffin-embedded human non-small cell lung carcinoma using Malic Enzyme 2 (E1N3E) XP<sup>®</sup> Rabbit mAb.



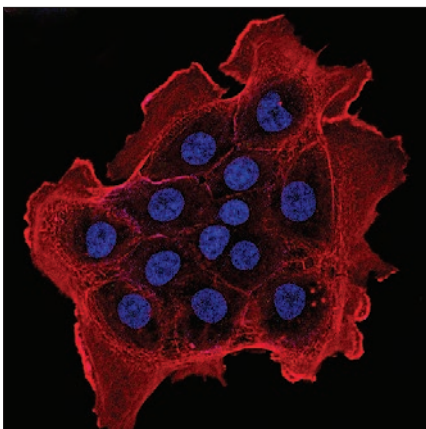
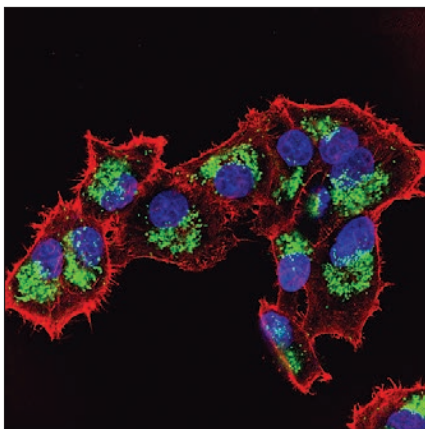
Immunohistochemical analysis of paraffin-embedded human prostate carcinoma using Malic Enzyme 2 (E1N3E) XP<sup>®</sup> Rabbit mAb.



Immunohistochemical analysis of paraffin-embedded human infiltrating papillary carcinoma of the breast using Malic Enzyme 2 (E1N3E) XP<sup>®</sup> Rabbit mAb.



Immunohistochemical analysis of paraffin-embedded human colon carcinoma using Malic Enzyme 2 (E1N3E) XP<sup>®</sup> Rabbit mAb.



Confocal immunofluorescent analysis of PANC-1 (left, positive) or BxPC-3 (right, negative) cells using Malic Enzyme 2 (E1N3E) XP<sup>®</sup> Rabbit mAb (green), and  $\beta$ -Actin (8H10D10) Mouse mAb #3700 (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

Thank you for your recent purchase. If you would like to provide a review visit [cellsignal.com/comments](https://www.cellsignal.com/comments).

[www.cellsignal.com](https://www.cellsignal.com)