Revision 1

Store at -20C

#93327

FTCD (D1R3F) 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	H M R	Endogenous	58	Rabbit IgG	#O95954	10841

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, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

Specificity/Sensitivity

FTCD (D1R3F) Rabbit mAb recognizes endogenous levels of total FTCD protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu440 of human FTCD protein.

Background

Formimidoyltransferase-cyclodeaminase (FTCD) catalyzes two key consecutive reactions in the histidine degradation pathway and links histidine catabolism to one-carbon metabolism. It converts tetrahydrofolate (THF) to 5, 10-methenyl-THF (1,2). Loss of FTCD decreases the sensitivity of cancer cells to chemotherapeutic drug methotrexate, an inhibitor of dihydrofolate reductase (DHFR). DHFR reduces dihydrofolate to tetrahydrofolate, an essential cofactor for nucleotide biosynthesis. Lack of FTCD leads to higher levels of tetrahydrofolate in methotrexate-treated cells, therefore reducing the effect of methotrexate. Conversely, greater depletion of tetrahydrofolate by FTCD through enhanced histidine degradation pathway may boost the efficacy of methotrexate (3,4).

Background References

1. Mao, Y. et al. (2004) *EMBO J* 23, 2963-71.
2. Pierce, B.L. et al. (2019) *PLoS Genet* 15, e1007984.
3. Kanarek, N. et al. (2018) *Nature* 559, 632-36.
4. Frezza, C. (2018) *Nature* 559, 484-5.

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

Trademarks and Patents

Limited Uses

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