Store at -20C

#5865

CA12 (D78E4) Rabbit mAb

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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	45-50	Rabbit IgG	#O43570	771

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200

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
CA12 (D78E4) Rabbit mAb detects endogenous levels of total CA12 protein.

Source / Purification
Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro344 of human CA12 protein.

Background
Carbonic anhydrases (CA) are a family of ancient zinc metalloenzymes found in almost all living organisms. All CA can be divided into 3 distinct classes (α, β, and γ) that evolved independently and have no significant homology in sequence and overall folding. All functional CA catalyze the reversible hydration of CO_2 into HCO_3^- and H^+ and contain a zinc atom in the active sites essential for catalysis. There are many isoforms of CA in mammals and they all belong to the α class (1,2).
CA12, a member of the α class, is a plasma membrane protein with the catalytic domain in the extracellular space. CA12 is widely expressed in many tissues and is found at high levels in renal cell cancers. Its expression is induced by hypoxia in solid tumors and is considered to be a tumor marker (3-5). Genetic mutations in CA12 are associated with hyperchlorhidrosis (6, 7).

Background References
1. Smith, K.S. et al. (1999) *Proc Natl Acad Sci USA* 96, 15184-9.
2. Tripp, B.C. et al. (2001) *J Biol Chem* 276, 48615-8.
3. Chiche, J. et al. (2009) *Cancer Res* 69, 358-68.
4. Barnett, D.H. et al. (2008) *Cancer Res* 68, 3505-15.
5. Watson, P.H. et al. (2003) *Br J Cancer* 88, 1065-70.
6. Feldshtein, M. et al. (2010) *Am J Hum Genet* 87, 713-20.
7. Muhammad, E. et al. (2011) *Hum Genet* 129, 397-405.

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 **M:** Mouse **R:** Rat

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