Revision 4

Store at -20C

#5649

CA9 (D47G3) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P	H	Endogenous	35-58	Rabbit IgG	#Q16790	768

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Immunohistochemistry (Paraffin)	1:50 - 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.

For a carrier free (BSA and azide free) version of this product see product #43510.

Specificity/Sensitivity

CA9 (D47G3) Rabbit mAb recognizes endogenous levels of total CA9 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human CA9 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).
CA9 is a member of α class and is a plasma membrane protein with the catalytic domain in the extracellular space. Its expression is restricted to very few normal tissues (mainly the gastrointestinal tract) (2). CA9 expression is strongly induced by hypoxia and down-regulated by the wildtype von Hippel–Lindau (VHL) tumor suppressor protein. CA9 expression is increased in many types of tumors, especially solid hypoxic tumors with a poor responsiveness to the conventional radio- and/or chemo-therapies; CA9 is considered to be a tumor hypoxia marker and a promising target for cancer therapeutic intervention (3-5).

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. Potter, C.P. and Harris, A.L. (2003) *Br J Cancer* 89, 2-7.
4. Winum, J.Y. et al. (2009) *Anticancer Agents Med Chem* 9, 693-702.
5. De Simone, G. and Supuran, C.T. (2010) *Biochim Biophys Acta* 1804, 404-9.

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 **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

H: Human

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Limited Uses

force or effect.

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