Revision 1

Store at -20C

#56898

GPNMB Antibody

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	M	Endogenous	90-100	Rabbit	#Q99P91	93695

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. *Do not aliquot the antibody.*

Specificity/Sensitivity

GPNMB Antibody recognizes endogenous levels of total mouse GPNMB protein. This antibody does not cross-react with human GPNMB protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of mouse GPNMB protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Glycoprotein non-metastatic gene B (GPNMB) is a type I transmembrane glycoprotein overexpressed in many types of cancer. The GPNMB glycoprotein is involved in many physiological processes, including mediating transport of late melanosomes to keratinocytes (1), regulating osteoblast and osteoclast differentiation and function (2), stimulating dendritic cell maturation, promoting adhesion of dendritic cells to endothelial cells (3), enhancing autophagosome fusion to lysosomes in tissue repair, and regulating degradation of cellular debris (4,5).

While typical GPNMB expression is seen in tissues including skin, heart, kidney, lung, liver, and skeletal muscle (3,6), research studies show elevated GPNMB expression often contributes to the metastatic phenotype in numerous cancers (reviewed in 7). GPNMB is typically localized to intracellular compartments in normal cells (1,8), but investigators found it primarily on the cell surface of tumor cells (9,10). Differential localization and expression, and the role of GPNMB as a tumor promoter in many cancer types make this protein a viable therapeutic target (11).

The GPNMB ectodomain can be cleaved by matrix metalloproteinases and shed from the cell surface (12). Research studies identify the sheddase ADAM10 as one peptidase responsible for cleavage of the GPNMB ectodomain at the surface of breast cancer cells. Shedded GPNMB ectodomains may promote angiogenesis by inducing endothelial cell migration (13).

Background References

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2. Sheng, M.H. et al. (2012) *PLoS One* 7, e35280.
3. Shikano, S. et al. (2001) *J Biol Chem* 276, 8125-34.
4. Li, B. et al. (2010) *FASEB J* 24, 4767-81.
5. Patel-Chamberlin, M. et al. (2011) *Kidney Int* 79, 1138-48.
6. Bandari, P.S. et al. (2003) *Regul Pept* 111, 169-78.
7. Maric, G. et al. (2013) *Onco Targets Ther* 6, 839-52.
8. Ripoll, V.M. et al. (2007) *J Immunol* 178, 6557-66.
9. Tse, K.F. et al. (2006) *Clin Cancer Res* 12, 1373-82.
10. Rose, A.A. et al. (2010) *Clin Cancer Res* 16, 2147-56.
11. Keir, C.H. and Vahdat, L.T. (2012) *Expert Opin Biol Ther* 12, 259-63.
12. Furochi, H. et al. (2007) *FEBS Lett* 581, 5743-50.
13. Rose, A.A. et al. (2010) *PLoS One* 5, e12093.

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

Cross-Reactivity Key

M: Mouse

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