Revision 1

#13251 Store at -20C

GPNMB (E1Y7J) 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:
WB, IP	H	Endogenous	95, 120	Rabbit IgG	#Q14956	10457

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

GPNMB (E1Y7J) Rabbit mAb recognizes endogenous levels of total GPNMB protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Asp247 of human GPNMB protein.

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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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.
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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

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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 **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses