Revision 1

#25800 Store at -20C

MAGE-A3 Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IP	H	Endogenous	45	Rabbit	#P43357	4102

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 and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

MAGE-A3 Antibody recognizes endogenous levels of total MAGE-A3 protein. This antibody cross-reacts with MAGE-A6.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human MAGE-A3 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Cancer/testis antigens (CTAs) are a family of more than 100 proteins whose normal expression is largely restricted to immune privileged germ cells of the testis, ovary, and trophoblast cells of the placenta. Although most normal somatic tissues are void of CTA expression, due to epigenetic silencing of gene expression, their expression is upregulated in a wide variety of human solid and liquid tumors (1,2). As such, CTAs have garnered much attention as attractive targets for a variety of immunotherapy-based approaches to selectively attack tumors (3).

Melanoma antigen-A3 (MAGE-A3) is a cancer testis antigen and belongs to the type I MAGE family of proteins. The expression of MAGE-A3 is normally restricted to the human testis but is aberrantly upregulated in a number of human cancers, such as lung cancer, colorectal cancer, and multiple myeloma (4-6). Research studies have recently demonstrated that MAGE-A3 drives tumorigenesis as part of the MAGE-A3-TRIM28 ubiquitin ligase complex that promotes proteasomal degradation of the tumor suppressor kinase AMPK (7). Due to its upregulated and selective expression in human tumors and high degree of immunogenicity, MAGE-A3 has received significant attention as a novel immunotherapy target through the use of vaccines and adoptive cell therapy (8,9).

Background References

1. Caballero, O.L. and Chen, Y.T. (2009) *Cancer Sci* 100, 2014-21.
2. De Smet, C. et al. (1999) *Mol Cell Biol* 19, 7327-35.
3. Gjerstorff, M.F. et al. (2015) *Oncotarget* 6, 15772-87.
4. Jang, S.J. et al. (2001) *Cancer Res* 61, 7959-63.
5. Shantha Kumara, H.M. et al. (2012) *Cancer Immun* 12, 16.
6. Atanackovic, D. et al. (2007) *Blood* 109, 1103-12.
7. Pineda, C.T. et al. (2015) *Cell* 160, 715-28.
8. Straetemans, T. et al. (2012) *Clin Dev Immunol* 2012, 586314.
9. Esfandiary, A. and Ghafouri-Fard, S. (2015) *Immunotherapy* 7, 683-704.

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

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