Revision 4

Store at -20C

#9837

ID3 (D16D10) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC, FC-FP	H	Endogenous	13	Rabbit IgG	#Q02535	3399

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Immunofluorescence (Immunocytochemistry)	1:400 - 1:1600
Flow Cytometry (Fixed/Permeabilized)	1:400 - 1:1600

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

ID3 (D16D10) Rabbit mAb recognizes endogenous levels of total ID3 protein.

Species predicted to react based on 100% sequence homology

Dog, Rabbit

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human ID3 protein.

Background

Inhibitor of DNA-binding/Differentiation (ID) proteins are a family of proteins that function to repress the activity of basic helix-loop-helix (bHLH) transcription factors. There are four known ID proteins in humans (ID1-4), all of which contain a helix-loop-helix domain but lack a basic DNA binding domain. Heterodimerization with bHLH transcription factors therefore functions to sequester bHLH proteins and prevent their binding to DNA (1). ID proteins play important functional roles in development, primarily by inhibiting premature differentiation of stem/progenitor cells (1,2). ID3 plays an important role in immune system development where it has been shown to repress E2A-mediated differentiation of T cells (3). Studies in mouse models have shown that homozygous deletion of ID3 disrupts regulatory T cell differentiation (4) and leads to development of γδ T cell lymphoma (5). Outside of the hematopoietic compartment, ID3 was shown to repress MyoD, implicating ID3 in TGFβ-mediated muscle repair (6). Similarly, research studies have shown that ID3 suppresses p21 in colon cancer cells, a function that is purported to promote the self-renewal capacity of putative cancer-initiating cells (7).

Background References

1. Yokota, Y. (2001) *Oncogene* 20, 8290-8.
2. Hong, S.H. et al. (2011) *J Cell Sci* 124, 1445-52.
3. Miyazaki, M. et al. (2011) *Nat Immunol* 12, 992-1001.
4. Maruyama, T. et al. (2011) *Nat Immunol* 12, 86-95.
5. Li, J. et al. (2010) *Blood* 116, 5615-21.
6. Clever, J.L. et al. (2010) *Am J Physiol Cell Physiol* 298, C1087-99.
7. O'Brien, C.A. et al. (2012) *Cancer Cell* 21, 777-92.

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

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human

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