

MAFA (D2Z6N) Rabbit mAb

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Applications: W, IP, IF-F, IF-IC, ChIP	Reactivity: H M	Sensitivity: Endogenous	MW (kDa): 50	Source/Isotype: Rabbit IgG	UniProt ID: #Q8NHW3	Entrez-Gene Id: 389692
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Product Usage Information

For optimal ChIP results, use 5 µl of antibody and 10 µg of chromatin (approximately 4 x 10⁶ cells) per IP. This antibody has been validated using SimpleChIP[®] Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Immunofluorescence (Frozen)	1:1000
Immunofluorescence (Immunocytochemistry)	1:1000
Chromatin IP	1:100

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

MAFA (D6Z2N) recognizes endogenous levels of total MAFA protein. Based on sequence similarity, this antibody is not predicted to cross-react with MAFB or c-MAF.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala345 of human MAFA protein.

Background

MAFA belongs to the musculoaponeurotic fibrosarcoma (MAF) family of basic leucine-zipper transcription factors (1). In the mouse embryo, MAFA expression is first detected at E13.5, restricted to Nkx6.1-positive insulin-producing islet cells (2). Expression of the *MAFA* gene is sensitive to physiological glucose levels, and genomic targets regulated by MAFA include β-cell transcription factors (e.g., *PDX1*) and the insulin gene (2, 3). Ectopic expression of MAFA was shown to induce insulin production by pancreatic α-cells (2), while conditional overexpression of MAFA *in vivo* promoted transdifferentiation of α-cells into insulin-producing β-cells (4). Targeted deletion of the *MAFA* gene in mice likewise led to a loss of β-cell identity and function (5). Collectively, these data suggest that MAFA is critical for the development, maintenance, and physiological function of insulin-producing pancreatic β-cells, highlighting its potential utility as a target for translational and clinical research studies in diabetes (6).

Background References

1. Hang, Y. and Stein, R. (2011) *Trends Endocrinol Metab* 22, 364-73.
2. Matsuoka, T.A. et al. (2004) *Proc Natl Acad Sci U S A* 101, 2930-3.
3. Vanhoose, A.M. et al. (2008) *J Biol Chem* 283, 22612-9.
4. Matsuoka, T.A. et al. (2017) *Diabetes* 66, 1293-1300.
5. Nishimura, W. et al. (2015) *Diabetologia* 58, 566-74.
6. Lu, J. et al. (2017) *Mol Med Rep* 15, 4041-4048.

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 **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry) **ChIP:** Chromatin IP

Cross-Reactivity Key

H: Human **M:** Mouse

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