Revision 5

#7019 Store at -20C

NeuroD1 (D90G12) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IF-IC	H	Endogenous	49	Rabbit IgG	#Q13562	4760

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Immunocytochemistry)	1:1600 - 1:3200

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

NeuroD1 (D90G12) Rabbit mAb detects endogenous levels of total NeuroD1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly315 of human NeuroD1 protein.

Background

NeuroD1 is a member of the basic helix-loop-helix (bHLH) family of transcription factors. These proteins function by forming heterodimers with E-proteins and binding to the canonical E-box sequence CANNTG (1,2). Neuronal activity results in CaMKII-mediated phosphorylation of NeuroD1 at Ser336, which is necessary for formation and growth of dendrites (3,4). NeuroD1 is also phosphorylated at Ser274 though the results are context dependent as phosphorylation by Erk stimulates NeuroD1 activity in pancreatic β-cells while phosphorylation by GSK-3β inhibits NeuroD1 in neurons (3). NeuroD1 is crucially important in both the pancreas and developing nervous system, and plays a large role in the development of the inner ear and mammalian retina (3). Mice lacking NeuroD1 become severely diabetic and die shortly after birth due to defects in β-cell differentiation (2,3,5,6). The lack of NeuroD1 in the brain results in severe defects in development (5). Human mutations have been linked to a number of types of diabetes, including type I diabetes mellitus and maturity-onset diabetes of the young (1,3).

Background References

1. Schonhoff, S.E. et al. (2004) *Endocrinology* 145, 2639-2644.
2. Sharma, A. et al. (1999) *Mol. Cell Biol.* 19, 704-713.
3. Chae, J.H. et al. (2004) *Mol. Cells* 18, 271-288.
4. Gaudillière, B. et al. (2004) *Neuron* 41, 229-241.
5. Miyata, T. et al. (1999) *Genes Dev.* 13, 1647-1652.
6. Naya, F.J. et al. (1997) *Genes Dev.* 11, 2323-2334.

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 **IF-IC:** Immunofluorescence (Immunocytochemistry)

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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