

## NeuroD1 Antibody



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

### Product Usage Information

#### Application

Western Blotting  
Immunoprecipitation

#### Dilution

1:1000  
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

NeuroD1 Antibody detects endogenous levels of total NeuroD1 protein.

### Species predicted to react based on 100% sequence homology

Mouse, Rat

### Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the sequence of human NeuroD1. Antibodies are purified by protein A and peptide affinity chromatography.

### Background

Neurogenic differentiation factor 1 (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 dendrite formation and growth (3,4). NeuroD1 is also phosphorylated at Ser274 though the results are context dependent as phosphorylation by Erk stimulates NeuroD1 activity in pancreatic  $\beta$  cells while phosphorylation by GSK-3 $\beta$  inhibits NeuroD1 in neurons (3). NeuroD1 is crucially important in both the pancreas and the 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  $\beta$  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

**W:** Western Blotting **IP:** Immunoprecipitation

### Cross-Reactivity Key

**H:** Human

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