Revision 1

#12891 Store at -20C

SIX1 (D4A8K) Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IF-IC, FC-FP	H M R Mk	Endogenous	36	Rabbit IgG	#Q15475	6495

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Immunocytochemistry)	1:100 - 1:400
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

SIX1 (D4A8K) Rabbit mAb recognizes endogenous levels of total SIX1 protein. It does not cross-react with other SIX family proteins.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro249 of human SIX1 protein.

Background

Sine oculis homeobox (SIX) proteins belong to a family of evolutionarily conserved transcription factors discovered in *Drosophila* mutant screens for embryonic eye development genes (1-3). The prototypical family member (*sine oculis*, *so*) was named for eyeless embryos carrying mutations in a gene highly conserved among vertebrates, including humans (*SIX1*) (4). A total of six family members (SIX1-6) have been identified in vertebrates. Each SIX protein contains a homeobox nucleic acid recognition domain (HD) with a DNA-binding helix-turn-helix motif and an adjacent SIX domain, which may be involved in regulating protein-protein interactions (5). In addition to their critical functions during embryonic organogenesis, research studies suggest that SIX proteins play additional roles in postnatal cell cycle regulation, with potentially important implications in tumorigenesis (6,7).
In contrast to the *Drosophila* ortholog, the vertebrate *SIX1* gene product does not play a critical role in embryonic eye development. Vertebrate SIX1 is required for development of mesoderm- and neural crest-derived lineages, and male reproductive tissues (8-10). SIX1 has also been shown to regulate transcription of MyoD in adult muscle progenitor cells during postnatal muscle development (11). A mechanistic role for SIX1 in cell cycle regulation is supported by research studies showing increased SIX1 expression in various cancer subtypes, including breast, ovarian, and hepatocellular carcinoma (6,12,13).

Background References

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5. Pignoni, F. et al. (1997) *Cell* 91, 881-91.
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7. Coletta, R.D. et al. (2004) *Proc Natl Acad Sci U S A* 101, 6478-83.
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12. Behbakht, K. et al. (2007) *Cancer Res* 67, 3036-42.
13. Ng, K.T. et al. (2006) *Br J Cancer* 95, 1050-5.

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) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

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