Revision 1

Store at -20C

#6505

CHD7 (D3F5) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M	Endogenous	336	Rabbit IgG	#Q9P2D1	55636

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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

CHD7 (D3F5) Rabbit mAb recognizes endogenous levels of total CHD7 protein. This antibody also cross-reacts with proteins of unknown origin at 50-55 kDa.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a recombinant protein specific to the amino terminus of human CHD7 protein.

Background

CHD7 belongs to the chromodomain helicase DNA-binding (CHD) family of ATP-dependent chromatin remodeling proteins (1). The CHD family of proteins has been shown to play an important role in regulating gene expression by altering the chromatin structure at target genes (1,2). The nine members of the CHD family are characterized by the presence of two tandem chromodomains in the N-terminal region and an SNF2-like ATPase domain near the central region of the protein (2-4). The CHD proteins can be further divided into three subgroups based on the presence of additional conserved functional domains. CHD7 belongs to the third subgroup of CHD proteins together with CHD6, 8, and 9, which are distinguished by the presence of three conserved region (CR) domains, a switching-defective protein 3, adaptor 2, nuclear receptor co-repressor, transcription factor IIB (SANT) like domain, two brahma and kismet (BRK) domains, and a DNA binding domain (2). CHD7 regulates embryonic stem cell (ESC) specific gene expression together with ESC master regulators Oct-4, Sox2 and nanog, and is necessary for neural stem cell development and formation of the neural crest (5-7). Research studies have shown that CHD7 mutations are frequently found in patients with CHARGE syndrome (coloboma of the eye, heart defects, atresia of the choanae, retardation of growth/development, genital/urinary abnormalities, and ear abnormalities and deafness) (8).

Background References

1. Hargreaves, D.C. and Crabtree, G.R. (2011) *Cell Res* 21, 396-420.
2. Marfella, C.G. and Imbalzano, A.N. (2007) *Mutat Res* 618, 30-40.
3. Delmas, V. et al. (1993) *Proc Natl Acad Sci U S A* 90, 2414-8.
4. Woodage, T. et al. (1997) *Proc Natl Acad Sci U S A* 94, 11472-7.
5. Schnetz, M.P. et al. (2010) *PLoS Genet* 6, e1001023.
6. Engelen, E. et al. (2011) *Nat Genet* 43, 607-11.
7. Bajpai, R. et al. (2010) *Nature* 463, 958-62.
8. Vissers, L.E. et al. (2004) *Nat Genet* 36, 955-7.

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

Cross-Reactivity Key

H: Human **M:** Mouse

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Limited Uses

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