

Store at  
-20°C  
**#11988**

# HES1 (D6P2U) Rabbit mAb

www.cellsignal.com

100 µl (10 western blots)

**Support:** 877-678-TECH (8324)  
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**Entrez-Gene ID** #3280  
**UniProt ID** #Q14469

rev. 06/17/14

**For Research Use Only. Not For Use In Diagnostic Procedures.**

**Applications**  
W, IP, IHC-P  
Endogenous

**Species Cross-Reactivity\***  
H, M, R, Mk

**Molecular Wt.**  
30 kDa

**Isotype**  
Rabbit IgG\*\*

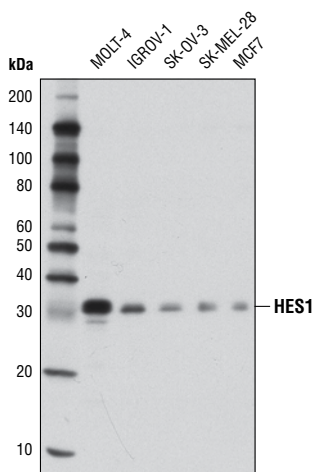
**Background:** HES1 (Hairy and Enhancer of Split 1) is one of seven members of the HES family of basic helix-loop-helix (bHLH) transcription factors which function primarily to repress transcription of bHLH-dependent genes (1). HES1 is understood to play an important conserved role in maintaining pluripotency of embryonic and adult stem/progenitor cells via the transcriptional repression of genes that promote differentiation (1,2). HES1 is particularly well known as a repressive mediator of the canonical Notch signaling pathway (3). HES1 plays a key role in mediating Notch-dependent T cell lineage commitment (4), and has been reported to be an essential mediator of Notch-induced T cell acute lymphoblastic leukemia (T-ALL) (4,5). HES1 is also reported to mediate Notch-induced repression of differentiation in a number of cancer cell types. A conditional deletion of HES1 from intestinal tumor cells in APC-mutant mice reduced tumor cell proliferation, while promoting differentiation toward epithelial lineages (6). Overexpression of HES1 in a human osteosarcoma (OS) cell line was shown to repress expression of the Notch antagonist *Dtx1*, leading to increased OS cell invasiveness (7). Other genes subject to transcriptional repression by HES1 include *Neurogenin-2*, *Math1/Atoh1* and the NOTCH ligands *DLL1* and *Jagged1* (6,8,9).

**Specificity/Sensitivity:** HES1 (D6P2U) Rabbit mAb recognizes endogenous levels of total HES1 protein.

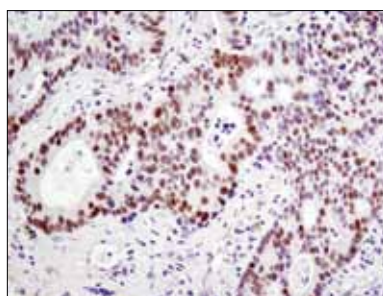
**Source/Purification:** Monoclonal antibody is produced by immunizing animals with recombinant protein specific to human HES1 protein.

## Background References:

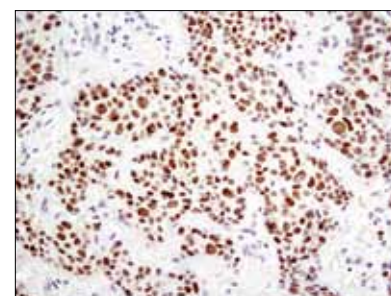
- (1) Kageyama, R. et al. (2007) *Development* 134, 1243-51.
- (2) Hatakeyama, J. et al. (2004) *Development* 131, 5539-50.
- (3) Kobayashi, T. and Kageyama, R. (2010) *Genes Cells* 15, 689-98.
- (4) Wendorff, A.A. et al. (2010) *Immunity* 33, 671-84.
- (5) Espinosa, L. et al. (2010) *Cancer Cell* 18, 268-81.
- (6) Ueo, T. et al. (2012) *Development* 139, 1071-82.
- (7) Zhang, P. et al. (2010) *Oncogene* 29, 2916-26.
- (8) Kageyama, R. et al. (2008) *Dev Growth Differ* 50 Suppl 1, S97-103.
- (9) Kobayashi, T. et al. (2009) *Genes Dev* 23, 1870-5.



Western blot analysis of extracts from various cell lines using HES1 (D6P2U) Rabbit mAb.



Immunohistochemical analysis of paraffin-embedded human lung carcinoma using HES1 (D6P2U) Rabbit mAb.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma using HES1 (D6P2U) Rabbit mAb.

**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.

**\*Species cross-reactivity is determined by western blot.**

**\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.**

## Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:200
Immunohistochemistry (Paraffin)	1:6400†
Unmasking buffer:	Citrate
Antibody diluent:	SignalStain® Antibody Diluent #8112
Detection reagent:	SignalStain® Boost (HRP, Rabbit) #8114
†Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.	

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**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.**

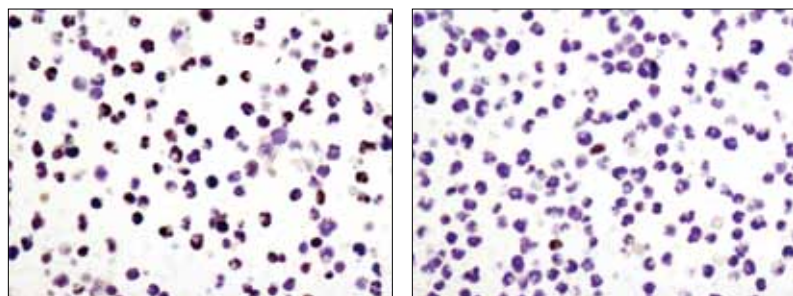
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**Applications:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected \*Species enclosed in parentheses are predicted to react based on 100% homology.



*Immunohistochemical analysis of paraffin-embedded CUTTL1 cell pellets, control (left) or Compound E-treated (right), using HES1 (D6P2U) Rabbit mAb.*

