

twist (Twist2C1a): sc-81417



The Power to Question

BACKGROUND

Members of the myogenic determination family are basic helix-loop-helix (bHLH) proteins that can be separated into two classes. Class A proteins include the ubiquitously expressed E-box binding factors E12/E47, ITF-2 and HEB (BETA1 or HTF4). Class B proteins such as MyoD, myogenin and NeuroD (BETA2) are transiently expressed and exhibit a much more limited tissue distribution. Class A proteins heterodimerize with class B proteins to activate DNA transcription. Working in opposition to these positively acting factors are a specialized group of proteins that function as dominant negative regulators. Muscle tissue is derived from a subset of cells originating from the embryonic mesoderm. The novel basic helix-loop-helix (bHLH) transcription factor, twist, is a putative regulator of mesodermal differentiation and myogenesis. Twist is expressed throughout the epithelial somite but not in the myotome. Twist requires dimerization with the E proteins and inhibits myogenic regulatory factors. It has been implicated as regulator of the temporal and spatial formation of myotomes.

REFERENCES

1. Lee, J.E., et al. 1995. Conversion of *Xenopus* ectoderm into neurons by neuroD, a basic helix-loop-helix protein. *Science* 268: 836-844.
2. Naya, F.J., et al. 1995. Tissue-specific regulation of the Insulin gene by a novel basic helix-loop-helix transcription factor. *Genes Dev.* 9: 1009-1019.

CHROMOSOMAL LOCATION

Genetic locus: TWIST1 (human) mapping to 7p21.1; Twist1 (mouse) mapping to 12 A3.

SOURCE

twist (Twist2C1a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to a region near the C-terminus of twist of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

APPLICATIONS

twist (Twist2C1a) is recommended for detection of twist of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for twist siRNA (h): sc-38604, twist siRNA (m): sc-38605, twist shRNA Plasmid (h): sc-38604-SH, twist shRNA Plasmid (m): sc-38605-SH, twist shRNA (h) Lentiviral Particles: sc-38604-V and twist shRNA (m) Lentiviral Particles: sc-38605-V.

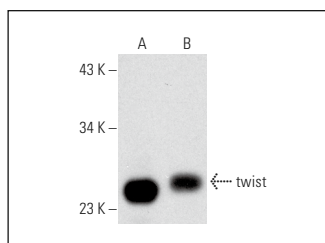
Molecular Weight of twist: 28 kDa.

Positive Controls: twist (h): 293T Lysate: sc-170453, 3T3-L1 cell lysate: sc-2243 or SH-SY5Y nuclear extract: sc-364820.

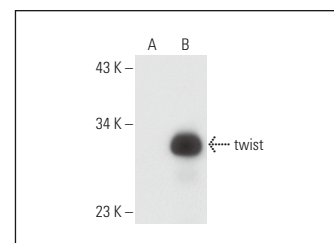
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

DATA



twist (Twist2C1a): sc-81417. Western blot analysis of twist expression in SH-SY5Y nuclear extract (A) and 3T3-L1 whole cell lysate (B).



twist (Twist2C1a): sc-81417. Western blot analysis of twist expression in non-transfected: sc-117752 (A) and human twist transfected: sc-170453 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Shiota, M., et al. 2008. Twist and p53 reciprocally regulate target genes via direct interaction. *Oncogene* 27: 5543-5553.
2. Zhou, Y., et al. 2013. TWIST interacts with endothelin-1/endothelin A receptor signaling in osteosarcoma cell survival against cisplatin. *Oncol. Lett.* 5: 857-861.
3. Grudzien-Nogalska, E., et al. 2014. CPEB1 promotes differentiation and suppresses EMT in mammary epithelial cells. *J. Cell Sci.* 127: 2326-2338.
4. Sakamoto, A., et al. 2015. DNA methylation in the Exon 1 region and complex regulation of Twist1 expression in gastric cancer cells. *PLoS ONE* 10: e0145630.
5. Koch, K., et al. 2016. Reciprocal regulation of the cholinic phenotype and epithelial-mesenchymal transition in glioblastoma cells. *Oncotarget* 7: 73414-73431.
6. Fan, X., et al. 2017. Foot-and-mouth disease virus infection suppresses autophagy and NF-κB antiviral responses via degradation of ATG5-ATG12 by 3C^{pro}. *Cell Death Dis.* 8: e2561.
7. Ng, P.K., et al. 2018. Systematic functional annotation of somatic mutations in cancer. *Cancer Cell* 33: 450-462.e10.
8. Sun, Y., et al. 2019. α-parvin promotes breast cancer progression and metastasis through interaction with G3BP2 and regulation of twist1 signaling. *Oncogene* 38: 4856-4874.
10. Li, J., et al. 2020. CBX7 binds the E-box to inhibit TWIST-1 function and inhibit tumorigenicity and metastatic potential. *Oncogene* 39: 3965-3979.

RESEARCH USE

For research use only, not for use in diagnostic procedures.