SANTA CRUZ BIOTECHNOLOGY, INC.

twist (Twist2C1a): sc-81417

SANTA CRUZ BIOTECHNOLOGY

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 IgG_1 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 10^6 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.

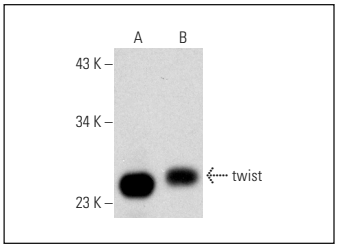
Molecular Weight of twist: 28 kDa.

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

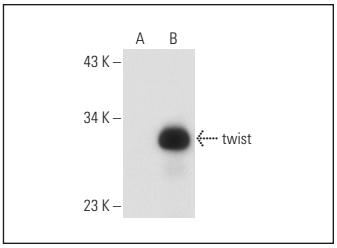
STORAGE

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. Pham, D., et al. 2012. Twist1 regulates Ifng expression in Th1 cells by interfering with Runx3 function. J. Immunol. 189: 832-840.
3. 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.
4. Grudzien-Nogalska, E., et al. 2014. CPEB1 promotes differentiation and suppresses EMT in mammary epithelial cells. J. Cell Sci. 127: 2326-2338.
5. 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.
6. Koch, K., et al. 2016. Reciprocal regulation of the cholinic phenotype and epithelial-mesenchymal transition in glioblastoma cells. Oncotarget 7: 73414-73431.
7. 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.
8. Ng, P.K., et al. 2018. Systematic functional annotation of somatic mutations in cancer. Cancer Cell 33: 450-462.e10.
9. 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.