



CHES1 (h2): 293T Lysate: sc-177057

BACKGROUND

CHES1 (checkpoint suppressor 1), also known as forkhead box protein N3 (FOXN3), is a member of the FOX family of transcription factors. The FOX family is a large group of proteins that share a common DNA-binding domain termed winged-helix or forkhead domain. CHES1 contains one forkhead DNA-binding domain. It localizes to the nucleus and functions as a transcriptional repressor and is critical for control of the DNA damage checkpoint. CHES1 interacts with the transcriptional regulator protein Skip via its C-terminus and its repressor activity is likely mediated by the recruitment of repressor complexes such as that composed of mSin3A, HDAC1 and HDAC2. In response to DNA damage, CHES1 interacts with Menin in an S-phase checkpoint pathway and functions as a cell cycle inhibitor. In addition, CHES1 expression is down-regulated in several tumors and may play a role in tumorigenicity.

REFERENCES

1. Pati, D., Keller, C., Groudine, M. and Plon, S.E. 1997. Reconstitution of a Mec1-independent checkpoint in yeast by expression of a novel human forkhead cDNA. *Mol. Cell. Biol.* 17: 3037-3046.
2. Struckmann, K., Schraml, P., Simon, R., Elmenhorst, K., Mirlacher, M., Kononen, J. and Moch, H. 2004. Impaired expression of the cell cycle regulator BTG2 is common in clear cell renal cell carcinoma. *Cancer Res.* 64: 1632-1638.
3. Katoh, M. and Katoh, M. 2004. Human FOX gene family (review). *Int. J. Oncol.* 25: 1495-1500.
4. Katoh, M. and Katoh, M. 2004. Characterization of human FOXN4 gene in silico. *Int. J. Mol. Med.* 14: 949-953.
5. Chang, J.T., Wang, H.M., Chang, K.W., Chen, W.H., Wen, M.C., Hsu, Y.M., Yung, B.Y., Chen, I.H., Liao, C.T., Hsieh, L.L. and Cheng, A.J. 2005. Identification of differentially expressed genes in oral squamous cell carcinoma (OSCC): overexpression of NPM, Cdk1 and NDRG1 and underexpression of CHES1. *Int. J. Cancer* 114: 942-949.
6. Scott, K.L. and Plon, S.E. 2005. CHES1/FOXN3 interacts with Ski-interacting protein and acts as a transcriptional repressor. *Gene* 359: 119-126.
7. Whitney, E.M., Ghaleb, A.M., Chen, X. and Yang, V.W. 2006. Transcriptional profiling of the cell cycle checkpoint gene krüppel-like factor 4 reveals a global inhibitory function in macromolecular biosynthesis. *Gene Expr.* 13: 85-96.
8. Busygina, V., Kottemann, M.C., Scott, K.L., Plon, S.E. and Bale, A.E. 2006. Multiple endocrine neoplasia type 1 interacts with forkhead transcription factor CHES1 in DNA damage response. *Cancer Res.* 66: 8397-8403.
9. Wilkinson, L.J., Duffield, M.L., Titball, R.W. and Lindsay, C.D. 2007. Down-regulation of gene transcripts associated with ricin tolerance in human RPMI 2650 cells. 21: 509-520.

CHROMOSOMAL LOCATION

Genetic locus: FOXN3 (human) mapping to 14q31.3.

RESEARCH USE

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

PRODUCT

CHES1 (h2): 293T Lysate represents a lysate of human CHES1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

CHES1 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive CHES1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.