

Ski (400-728): sc-4440 WB

BACKGROUND

The Ski family of oncogenes includes Ski, SnoN and SnoA, which are produced by alternative splicing of the Sno gene. Ski family members are nuclear proteins that form homodimers and heterodimers, bind to DNA and function as transcriptional activators and repressors. These proteins consist of five tandem repeats in the C-terminal domain and two leucine zipper motifs that are responsible for efficient DNA binding, trimerization and cellular transformation. The Ski proteins regulate TGF β induced gene-specific transcriptional activation by effectively repressing Smad activity and, thereby, inhibit TGF β induced cell growth and extracellular matrix production. The amino termini of Ski and SnoN preferentially associate with the MH2 domain of Smad2 and Smad4 of the Smad family of transcription factors, where they then recruit the transcriptional co-repressor protein N-CoR to the complex to inhibit transcription. Alternatively, Ski proteins are negatively regulated by various Smad proteins, as TGF β induces Smad3 accumulation in the nucleus, where it is then responsible for inducing the rapid degradation of SnoN and facilitating TGF β signaling pathways and Smad-activated gene transcription.

REFERENCES

1. Nomura, N., Sasamoto, S., Ishii, S., Date, T., Matsui, M. and Ishizaki, R. 1989. Isolation of human cDNA clones of Ski and the Ski-related gene, Sno. *Nucleic Acids Res.* 17: 5489-5500.
2. Pearson-White, S. 1993. Snol, a novel alternatively spliced isoform of the Ski proto-oncogene homolog, Sno. *Nucleic Acids Res.* 21: 4632-4638.
3. Nagase, T., Nomura, N. and Ishii, S. 1993. Complex formation between proteins encoded by the Ski gene family. *J. Biol. Chem.* 268: 13710-13716.
4. Heyman, H.C. and Stavnezer, E. 1994. A carboxyl-terminal region of the Ski oncoprotein mediates homodimerization as well as heterodimerization with the related protein SnoN. *J. Biol. Chem.* 269: 26996-27003.
5. Mimura, N., Ichikawa, K., Asano, A., Nagase, T. and Ishii, S. 1996. A transient increase of SnoN transcript by growth arrest upon serum deprivation and cell-to-cell contact. *FEBS Lett.* 397: 253-259.
6. Vogel, G. 1999. A new blocker for the TGF β pathway. *Science* 286: 665.
7. Stroschein, S.L., Wang, W., Zhou, S., Zhou, Q. and Luo, K. 1999. Negative feedback regulation of TGF β signaling by the SnoN oncoprotein. *Science* 286: 771-774.
8. Vazquez-Macias, A., Ruiz-Mendoza, A.B., Fonseca-Sanchez, M.A., Briones-Orta, M.A. and Macias-Silva, M. 2005. Downregulation of Ski and SnoN co-repressors by anisomycin. *FEBS Lett.* 579: 3701-3706.
9. Reed, J.A., Lin, Q., Chen, D., Mian, I.S. and Medrano, E.E. 2005. Ski pathways inducing progression of human melanoma. *Cancer Metastasis Rev.* 24: 265-272.
10. Wang, L., Lewis, M.S. and Johnson, A.W. 2005. Domain interactions within the Ski2/3/8 complex and between the Ski complex and Ski7p. *RNA* 11: 1291-1302.

CHROMOSOMAL LOCATION

Genetic locus: SKI (human) mapping to 1q22-1q24; Ski (mouse) mapping to 4 E2.

SOURCE

Ski (400-728) is expressed in *E. coli* as a 63 kDa tagged fusion protein corresponding to amino acids 400-728 of Ski of human origin.

PRODUCT

Ski (400-728) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 μ g in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

Ski (400-728) is suitable as a Western blotting control for sc-9140 and sc-9590.

STORAGE

Store at -20° C. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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