

Net (11G9): sc-134401

BACKGROUND

Ras signaling is mediated in part by transcription factors, which belong to one of the largest families of signal-dependent transcriptional regulators, the Ets gene family. One member of the Ets gene family, Net (also designated ERP and SAP-2), shares various properties with Ets factors Elk-1 and SAP-1. Like Ets factors Elk-1 and SAP-1, Net binds to Ets DNA motifs through the Ets domain and forms ternary complexes with the serum response factor SRF on the Fos serum response element SRE. Net contains two nuclear localization signals, one in the Ets domain and one corresponding to the D box, as well as a nuclear export signal in the conserved Ets DNA binding domain. Net is exported from the nucleus in response to stress stimuli transduced through the JNK pathway. ERK and p38 bind to the D box of Net to allow phosphorylation of the adjacent C-terminal C-domain, which, in combination with the D box, is required for transcription activation by Ras. However, the binding of JNK to the J box results in phosphorylation of the adjacent export motif, which is important for Net export from the nucleus. Therefore, Net acts as a transcriptional repressor that is converted into an activator by Ras/ERK signaling and is regulated by nuclear-cytoplasmic shuttling in response to specific signaling pathways.

REFERENCES

1. Giovane, A., et al. 1994. Net, a new Ets transcription factor that is activated by Ras. *Genes Dev.* 8: 1502-1513.
2. Price, M.A., et al. 1995. Comparative analysis of the ternary complex factors Elk-1, SAP-1a and SAP-2 (ERP/Net). *EMBO J.* 14: 2589-2601.
3. Ducret, C., et al. 1999. The Net repressor is regulated by nuclear export in response to anisomycin, UV, heat shock. *Mol. Cell. Biol.* 19: 7076-7087.
4. Ducret, C., et al. 2000. The ternary complex factor Net contains two distinct elements that mediate different responses to MAP kinase signaling cascades. *Oncogene* 19: 5063-5072.
5. Mavrothalassitis, G., et al. 2000. Proteins of the Ets family with transcriptional repressor activity. *Oncogene* 19: 6524-6532.
6. Zheng, H., et al. 2003. The transcription factor Net regulates the angiogenic switch. *Genes Dev.* 17: 2283-2297.
7. Buchwalter, G., et al. 2004. Ets ternary complex transcription factors. *Gene* 324: 1-14.
8. Nakade, K., et al. 2004. The tumor suppressor p53 inhibits Net, an effector of Ras/extracellular signal-regulated kinase signaling. *Mol. Cell. Biol.* 24: 1132-1142.
9. van Riggelen, J., et al. 2005. Loss of Net as repressor leads to constitutive increased c-Fos transcription in cervical cancer cells. *J. Biol. Chem.* 280: 3286-3294.

CHROMOSOMAL LOCATION

Genetic locus: ELK3 (human) mapping to 12q23.1.

RESEARCH USE

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

SOURCE

Net (11G9) is a mouse monoclonal antibody raised against recombinant Net protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Net (11G9) is recommended for detection of Net of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Net siRNA (h): sc-37867, Net shRNA Plasmid (h): sc-37867-SH and Net shRNA (h) Lentiviral Particles: sc-37867-V.

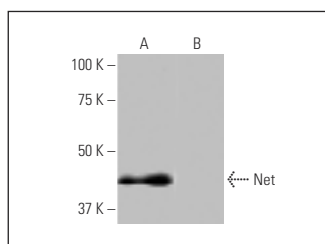
Molecular Weight of Net: 62 kDa.

Positive Controls: human Net transfected 293T whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Net (11G9): sc-134401. Western blot analysis of Net expression in human Net transfected (A) and non-transfected (B) 293T whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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