



Qty: 100 µg/200 µL

Mouse anti-ELK1

Catalog No.: 458700

Mouse anti- ELK1

FORM

This affinity-purified mouse monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

Clone: 3H6D12 **Isotype:** IgG1

IMMUNOGEN

Truncated recombinant protein derived from human ELK1 protein (accession # P19419, NP_005220.21), which is 99% similar to chimpanzee, 98% to rhesus monkey, 90% similar to bovine, 88% similar to rat and 86% similar to mouse.

SPECIFICITY

This antibody is specific for human ELK1 (ETS domain-containing protein ELK1) protein. On Western blots of human K562 cell lysates, it identifies the target band at ~50 kDa.

REACTIVITY

Reactivity has been confirmed with human K562 cell lysates using Western blotting. The reactivity has also been confirmed with human K562 cells by immunofluorescence and immunoprecipitation. Based on amino acid sequence homology, reactivity with chimpanzee, rhesus monkey, bovine, rat and mouse is also expected.

Sample	Western Blotting	Immunofluorescence	Immunoprecipitation
Human	+++	+++	+++
Chimpanzee	ND	ND	ND
Monkey (Rhesus)	ND	ND	ND
Bovine	ND	ND	ND
Rat	ND	ND	ND
Mouse	ND	ND	ND

(Excellent +++, Good ++, Poor +, No reactivity 0, Not applicable N/A, Not determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 2 µg/mL
Immunofluorescence: 10 µg/mL
Immunoprecipitation: 5 µg/IP reactions

(cont')

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PI458700

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STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

BACKGROUND

The nuclear transcription factor E-26-like protein 1 (ELK1) is a component of the ternary complex that binds the serum response element (SRE) and mediates gene activity in response to serum and growth factors. Biochemical studies indicate that ELK1 is a good substrate for MAP kinase. It is phosphorylated by MAP kinase pathways at a cluster of S/T motifs at its C-terminus.¹ The kinetics of ELK1 phosphorylation and activation correlate with MAP kinase activity, and interfering mutants of MAP kinase block ELK1 activation *in vivo*. In addition to its nuclear localization, ELK1 is found throughout the cytoplasm, including localization in neuronal dendrites.²

ELK1 is thought to impact neuronal differentiation, cell proliferation and tumorigenesis.^{3,4} Activation of ELK1 has been associated with gastric and prostate cancer.⁵ Phosphorylation of ELK1 has also been implicated in synaptic plasticity in the adult hippocampus. Coimmunoprecipitation and reciprocal coimmunoprecipitation from studies of adult rat brain, showed an association between ELK1 protein and the mitochondrial permeability transition pore complex (PTP), a structure involved in both apoptotic and necrotic cell death. Consistent with a role for ELK1 in neuron viability, overexpression of ELK1 in primary neurons decreased cell viability, whereas ELK1 siRNA-mediated knockdown increased cell viability. This decrease in viability induced by ELK1 overexpression was blocked with application of a PTP inhibitor. These results show an association of the nuclear transcription factor ELK1 with the mitochondrial PTP and suggest an additional extranuclear function for ELK1 in neurons.²

REFERENCES

1. Kortenjann M et al. *Mol Cell Biol* (7):4815-24, 1994.
2. Sgambato V et al. *J Neurosci* 18(1):214-26, 1998.
3. Sharrocks AD *Nat Rev Mol Cell Biol* (11):827-37, 2001.
4. Chai Y et al. *Oncogene* 20(11):1357-67, 2001.
5. Barrett LE et al. *Proc Natl Acad Sci* 103(13):5155-60, 2006.

RELATED PRODUCTS

Product	Conjugate	Cat. No.
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

Conjugate	Goat anti-rabbit IgG (H+L)	Goat anti-mouse IgG (H+L)	Ex/Em*	Fluorescence similar to--
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	Cy3
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

*Excitation/emission (nm); **Not applicable

For additional secondary antibody conjugates, visit www.invitrogen.com/antibodies

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