

# Myotrophin (E-2): sc-166673

## BACKGROUND

Myotrophin (V-1 protein) is a ubiquitously expressed cytoplasmic protein that can translocate to the nucleus during sustained NF $\kappa$ B activation. The gene encoding for this protein localizes to chromosome 7q33. Myotrophin may be involved in cerebellar morphogenesis and contains an acetylated N-terminus and 2.5 internal 33 amino acid ankyrin repeats. It is important in the differentiation of cerebellar neurons, particularly of granule cells. The 117 amino acid protein has been associated with, and able to induce, cardiac hypertrophy. Myotrophin increases proto-oncogene, ANF and  $\beta$ -myosin heavy chain transcript levels. Myotrophin is upregulated when myocytes undergo cyclic stretch or are treated with tumor necrosis factor  $\alpha$  (TNF $\alpha$ ) or interleukin-1 $\beta$ . Highest levels of Myotrophin are detected in brain and lowest levels in skeletal muscle.

## REFERENCES

- Horita, A. and Carino, M.A. 1990. Centrally administered vasopressin antagonizes pentobarbital-induced narcosis and depression of hippocampal cholinergic activity. *Peptides* 11: 1021-1025.
- Sen, S., et al. 1990. Myotrophin: purification of a novel peptide from spontaneously hypertensive rat heart that influences myocardial growth. *J. Biol. Chem.* 265: 16635-16643.
- Sil, P., et al. 1993. Myotrophin in human cardiomyopathic heart. *Circ. Res.* 73: 98-108.
- Mukherjee, D.P., et al. 1993. Myotrophin induces early response genes and enhances cardiac gene expression. *Hypertension* 21: 142-148.
- Sivasubramanian, N., et al. 1996. Cardiac myotrophin exhibits Rel/NF $\kappa$ B interacting activity *in vitro*. *J. Biol. Chem.* 271: 2812-2816.
- Anderson, K.M., et al. 1999. cDNA sequence and characterization of the gene that encodes human myotrophin/V-1 protein, a mediator of cardiac hypertrophy. *J. Mol. Cell. Cardiol.* 31: 705-719.
- Gupta, S. and Sen, S. 2002. Myotrophin- $\kappa$ B DNA interaction in the initiation process of cardiac hypertrophy. *Biochim. Biophys. Acta* 1589: 247-260.

## CHROMOSOMAL LOCATION

Genetic locus: MTPN (human) mapping to 7q33; Mtpn (mouse) mapping to 6 B1.

## SOURCE

Myotrophin (E-2) is a mouse monoclonal antibody raised against amino acids 1-118 representing full length Myotrophin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

Myotrophin (E-2) is recommended for detection of Myotrophin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Myotrophin (E-2) is also recommended for detection of Myotrophin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Myotrophin siRNA (h): sc-45700, Myotrophin siRNA (m): sc-45701, Myotrophin shRNA Plasmid (h): sc-45700-SH, Myotrophin shRNA Plasmid (m): sc-45701-SH, Myotrophin shRNA (h) Lentiviral Particles: sc-45700-V and Myotrophin shRNA (m) Lentiviral Particles: sc-45701-V.

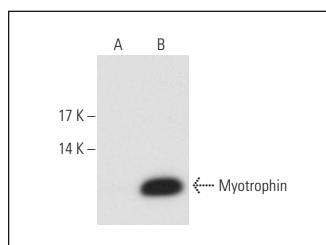
Molecular Weight of Myotrophin: 12 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, BT-20 cell lysate: sc-2223 or Myotrophin (h): 293T Lysate: sc-114795.

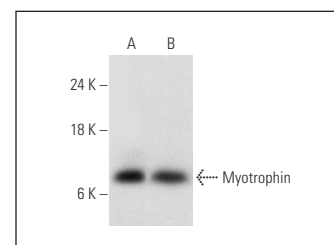
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



Myotrophin (E-2): sc-166673. Western blot analysis of Myotrophin expression in non-transfected: sc-117752 (A) and human Myotrophin transfected: sc-114795 (B) 293T whole cell lysates.



Myotrophin (E-2): sc-166673. Western blot analysis of Myotrophin expression in BT-20 (A) and HeLa (B) whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.