

MESP1 (JH.12): sc-130461



The Power to Question

BACKGROUND

MESP1 (mesoderm posterior 1 homolog), also known as bHLHc5, is a 268 amino acid protein that contains one basic helix-loop-helix (bHLH) domain, a motif that mediates protein dimerization and can bind to the E-box sequence of DNA. Localized to the nucleus, MESP1 functions as a transcription factor that, via its bHLH domain, participates in the epithelialization and the development of the cardiac and somitic mesoderm. MESP1 is highly expressed during gastrulation and somitogenesis and is necessary for the formation of single heart tubes during cardiac maturation. Early detection of MESP1 may be an indicator of the formation of cardiac precursor cells in developing embryos. Additionally, MESP1 plays a role in the rostrocaudal patterning of the somites, an event that influences select Notch signaling pathways.

REFERENCES

1. Saga, Y., et al. 1996. MESP1: a novel basic helix-loop-helix protein expressed in the nascent mesodermal cells during mouse gastrulation. *Development* 122: 2769-2778.
2. Saga, Y., et al. 1999. MESP1 is expressed in the heart precursor cells and required for the formation of a single heart tube. *Development* 126: 3437-3447.
3. Kitajima, S., et al. 2000. MESP1 and MESP2 are essential for the development of cardiac mesoderm. *Development* 127: 3215-3226.

CHROMOSOMAL LOCATION

Genetic locus: MESP1 (human) mapping to 15q26.1; Mesp1 (mouse) mapping to 7 D3.

SOURCE

MESP1 (JH.12) is a mouse monoclonal antibody raised against a partial recombinant protein mapping within amino acids 1-63 of MESP1 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

MESP1 (JH.12) is recommended for detection of MESP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for MESP1 siRNA (h): sc-90138, MESP1 siRNA (m): sc-149373, MESP1 shRNA Plasmid (h): sc-90138-SH, MESP1 shRNA Plasmid (m): sc-149373-SH, MESP1 shRNA (h) Lentiviral Particles: sc-90138-V and MESP1 shRNA (m) Lentiviral Particles: sc-149373-V.

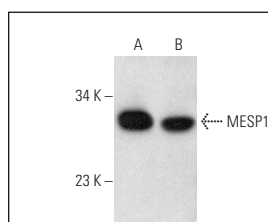
Molecular Weight of MESP1: 29 kDa.

Positive Controls: FHs 173We cell lysate: sc-2417, mouse cerebellum extract: sc-2403 or rat testis extract: sc-2400.

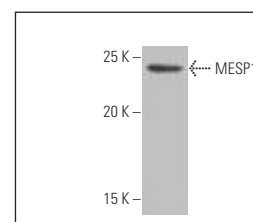
RECOMMENDED SUPPORT REAGENTS

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



MESP1 (JH.12): sc-130461. Western blot analysis of MESP1 expression in mouse cerebellum (A) and rat testis (B) tissue extracts.



MESP1 (JH.12): sc-130461. Western blot analysis of MESP1 expression in FHs 173We whole cell lysate.

SELECT PRODUCT CITATIONS

1. Frank, S., et al. 2012. Small molecule-assisted, line-independent maintenance of human pluripotent stem cells in defined conditions. *PLoS ONE* 7: e41958.
2. Zhang, M., et al. 2015. Universal cardiac induction of human pluripotent stem cells in two and three-dimensional formats: implications for *in vitro* maturation. *Stem Cells* 33: 1456-1469.
3. Sahara, M., et al. 2019. Population and single-cell analysis of human cardiogenesis reveals unique LGR5 ventricular progenitors in embryonic outflow tract. *Dev. Cell* 48: 475-490.e7.
4. Jang, J.H., et al. 2021. Bioactive lipid O-cyclic phytosphingosine-1-phosphate promotes differentiation of human embryonic stem cells into cardiomyocytes via ALK3/BMPR signaling. *Int. J. Mol. Sci.* 22: 7015.
5. Lee, J.W., et al. 2023. SOX17-mediated LPAR4 expression plays a pivotal role in cardiac development and regeneration after myocardial infarction. *Exp. Mol. Med.* 55: 1424-1436.

STORAGE

Store at 4° C, **DO NOT FREEZE**. 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.

PROTOCOLS

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