

# MTHFD1 (H-120): sc-134732

## BACKGROUND

Methylenetetrahydrofolate dehydrogenase 1 (MTHFD1) is a 935 amino acid, folate-dependent protein that is responsible for the consecutive interconversion of tetrahydrofolate derivatives which drive the synthesis of purine, methionine and thymidylate. The cytosolic MRHFD1 contains three subunits, 5,10-methylenetetrahydrofolate dehydrogenase, 5,10-methenyltetrahydrofolate cyclohydrolase and 10-formyltetrahydrofolate synthetase, each with distinct activities. MTHFD1 functions as a homodimer consisting of two major domains, an N-terminal containing the dehydrogenase and cyclohydrolase activities and a larger synthetase domain in the C-terminus. Mutations in the MTHFD1 gene in pregnant women are associated with an increased risk of giving birth to a child with a neural tube defect, along with a possible risk of decreased embryo survival. MTHFD1 also plays a role in migraine development, since folate metabolism is involved in migraine pathophysiology, mainly in migraine with aura.

## CHROMOSOMAL LOCATION

Genetic locus: MTHFD1 (human) mapping to 14q23.3; Mthfd1 (mouse) mapping to 12 C3.

## SOURCE

MTHFD1 (H-120) is a rabbit polyclonal antibody raised against amino acids 1-120 mapping at the N-terminus of MTHFD1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

MTHFD1 (H-120) is recommended for detection of MTHFD1 of mouse, rat and 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)], 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).

MTHFD1 (H-120) is also recommended for detection of MTHFD1 in additional species, including equine and canine.

Suitable for use as control antibody for MTHFD1 siRNA (h): sc-61082, MTHFD1 siRNA (m): sc-61083, MTHFD1 shRNA Plasmid (h): sc-61082-SH, MTHFD1 shRNA Plasmid (m): sc-61083-SH, MTHFD1 shRNA (h) Lentiviral Particles: sc-61082-V and MTHFD1 shRNA (m) Lentiviral Particles: sc-61083-V.

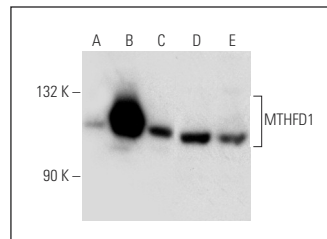
Molecular Weight of MTHFD1: 100 kDa.

Positive Controls: MTHFD1/1L (h): 293T Lysate: sc-171409, Y79 cell lysate: sc-2240 or human liver extract: sc-363766.

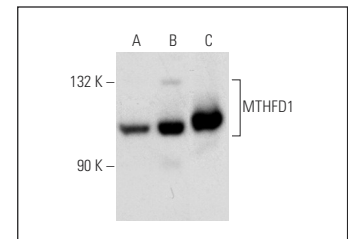
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



MTHFD1 (H-120): sc-134732. Western blot analysis of MTHFD1 expression in non-transfected 293T: sc-117752 (A), human MTHFD1 transfected 293T: sc-171409 (B), HeLa (C), Jurkat (D) and K-562 (E) whole cell lysates.



MTHFD1 (H-120): sc-134732. Western blot analysis of MTHFD1 expression in Hep G2 (A) and Y79 (B) whole cell lysates and human liver tissue extract (C).

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **MTHFD1 (A-8): sc-271412** or **MTHFD1 (A-1): sc-271444**, our highly recommended monoclonal alternatives to MTHFD1 (H-120).