

MTHFD1/1L (C-17): sc-49240

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. MTHFD1L (methylenetetrahydrofolate dehydrogenase 1-like) is a 978 amino acid mitochondrial protein that is expressed in a variety of tissues and, like MTHFD1, functions in folate metabolism via the tetrahydrofolate pathway. MTHFD1L exists as two isoforms and may be associated with colorectal carcinogenesis, possibly conferring a growth advantage to cancer-transformed cells.

CHROMOSOMAL LOCATION

Genetic locus: MTHFD1(human) mapping to 14q23.3, MTHFD1L (human) mapping to 6q25.1; Mthfd1 (mouse) mapping to 12 C3, Mthfd1l (mouse) mapping to 10 A1.

SOURCE

MTHFD1/1L (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-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.

Blocking peptide available for competition studies, sc-49240 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MTHFD1/1L (C-17) is recommended for detection of MTHFD1 and MTHFD1L 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).

MTHFD1/1L (C-17) is also recommended for detection of MTHFD1 and MTHFD1L in additional species, including equine, canine, bovine and porcine.

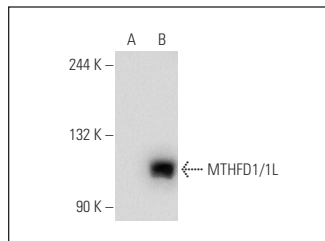
Molecular Weight of MTHFD1/1L: 100 kDa.

Positive Controls: MTHFD1 (h): 293T Lysate: sc-171409, HeLa whole cell lysate: sc-2200 or PC-12 cell lysate: sc-2250.

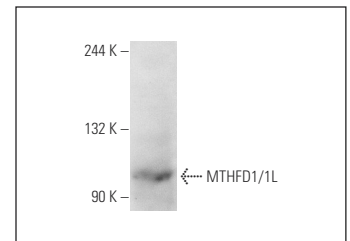
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MTHFD1/1L (C-17): sc-49240. Western blot analysis of MTHFD1/1L expression in non-transfected: sc-117752 (A) and human MTHFD1 transfected: sc-171409 (B) 293T whole cell lysates.



MTHFD1/1L (C-17): sc-49240. Western blot analysis of MTHFD1/1L expression in HeLa whole cell lysate.

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 or our catalog for detailed protocols and support products.


 MONOS
Satisfaction
Guaranteed

Try **MTHFD1/1L (D-9): sc-376722** or **MTHFD1 (A-8): sc-271412**, our highly recommended monoclonal alternatives to MTHFD1/1L (C-17).