

DHFR (FL-187): sc-33184

BACKGROUND

Dihydrofolate reductase (DHFR) is a crucial enzyme for the synthesis of purines, pyrimidines and some amino acids. DHFR catalyzes the NADPH-dependent reduction of dihydrofolate to tetrahydrofolate, and it is essential for the synthesis of thymidylate, purines and several amino acids. Inhibition of the enzyme's activity leads to arrest of DNA synthesis and cell death. Gene expression of methotrexate (MTX)-resistant variants of DHFR in normal hematopoietic cells is a potential strategy to permit administration of larger doses of MTX by alleviating drug toxicity in normal cells and tissues that are drug sensitive.

REFERENCES

1. Walker, V.K., et al. 2000. Tobacco budworm dihydrofolate reductase is a promising target for insecticide discovery. *Eur. J. Biochem.* 267: 394-403.
2. Li, R., et al. 2000. Three-dimensional structure of *M. tuberculosis* dihydrofolate reductase reveals opportunities for the design of novel tuberculosis drugs. *J. Mol. Biol.* 295: 307-323.

CHROMOSOMAL LOCATION

Genetic locus: DHFR (human) mapping to 5q14.1; Dhfr (mouse) mapping to 13 C3.

SOURCE

DHFR (FL-187) is a rabbit polyclonal antibody raised against amino acids 1-187 representing full length DHFR 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.

APPLICATIONS

DHFR (FL-187) is recommended for detection of DHFR 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DHFR (FL-187) is also recommended for detection of DHFR in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for DHFR siRNA (h): sc-37078, DHFR siRNA (m): sc-37079, DHFR shRNA Plasmid (h): sc-37078-SH, DHFR shRNA Plasmid (m): sc-37079-SH, DHFR shRNA (h) Lentiviral Particles: sc-37078-V and DHFR shRNA (m) Lentiviral Particles: sc-37079-V.

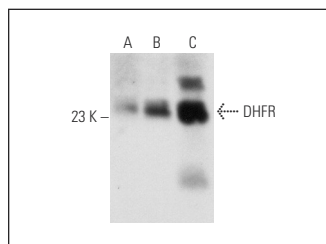
Molecular Weight of DHFR: 25 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or DHFR (h2): 293T Lysate: sc-170387.

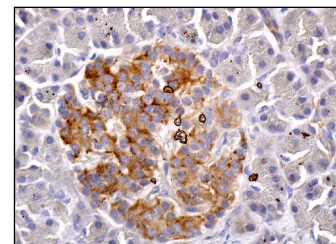
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



DHFR (FL-187): sc-33184. Western blot analysis of DHFR expression in non-transfected 293T: sc-117752 (A), human DHFR transfected 293T: sc-170387 (B) and HeLa (C) whole cell lysates.



DHFR (FL-187): sc-33184. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans.

SELECT PRODUCT CITATIONS

1. Maguire, M., et al. 2008. MDM2 regulates dihydrofolate reductase activity through monoubiquitination. *Cancer Res.* 68: 3232-3242.
2. Baffa, R., et al. 2009. MicroRNA expression profiling of human metastatic cancers identifies cancer gene targets. *J. Pathol.* 219: 214-221.
3. Deiss, K., et al. 2012. Raf kinase inhibitor protein (RKIP) dimer formation controls its target switch from Raf1 to G protein-coupled receptor kinase (GRK) 2. *J. Biol. Chem.* 287: 23407-23417.

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.



Try **DHFR (A-9): sc-377091** or **DHFR (C-4): sc-393154**, our highly recommended monoclonal alternatives to DHFR (FL-187). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **DHFR (A-9): sc-377091**.