

# cyt19 (N-19): sc-47984

## BACKGROUND

Formation of methylated metabolites is a critical step in the metabolism of inorganic arsenic. Arsenite methyltransferase (cyt19) is localized to the cytoplasm and operates in the transfer of a methyl group from AdoMet to trivalent arsenicals producing methylated and dimethylated arsenicals. It methylates arsenite to form methylarsonate which is reduced to methylarsonite. Methylarsonite acts as a substrate and is converted into a much less toxic compound dimethylarsinate. cyt19 is highly expressed in liver. Inherited variation in cyt19 may contribute to variation in arsenic metabolism and possibly arsenic-dependent carcinogenesis in humans.

## REFERENCES

- Walton, F.S., et al. 2003. Selenium compounds modulate the activity of recombinant rat AsIII-methyl and the methylation of arsenite by rat and human hepatocytes. *Chem. Res. Toxicol.* 16: 261-265.
- Waters, S.B., et al. 2004. Endogenous reductants support the catalytic function of recombinant rat cyt19, an arsenic methyltransferase. *Chem. Res. Toxicol.* 17: 404-409.
- Thomas, D.J., et al. 2004. Elucidating the pathway for arsenic methylation. *Toxicol. Appl. Pharmacol.* 198: 319-326.
- Drobn, Z., et al. 2004. Interindividual variation in the metabolism of arsenic in cultured primary human hepatocytes. *Toxicol. Appl. Pharmacol.* 201: 166-177.
- Hayakawa, T., et al. 2005. A new metabolic pathway of arsenite: arsenic-glutathione complexes are substrates for human arsenic methyltransferase cyt19. *Arch. Toxicol.* 79: 183-191.
- Meza, MM., et al. 2005. Developmentally restricted genetic determinants of human arsenic metabolism: association between urinary methylated arsenic and CYT19 polymorphisms in children. *Environ. Health Perspect.* 113: 775-781.
- Wood, T.C., et al. 2006. Human arsenic and functional genomics studies. *J. Biol. Chem.* 281: 7364-7373.

## CHROMOSOMAL LOCATION

Genetic locus: AS3MT (human) mapping to 10q24.32; As3mt (mouse) mapping to 19 C3.

## SOURCE

cyt19 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of cyt19 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-47984 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

cyt19 (N-19) is recommended for detection of cyt19 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).

cyt19 (N-19) is also recommended for detection of cyt19 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for cyt19 siRNA (h): sc-60494, cyt19 siRNA (m): sc-60495, cyt19 shRNA Plasmid (h): sc-60494-SH, cyt19 shRNA Plasmid (m): sc-60495-SH, cyt19 shRNA (h) Lentiviral Particles: sc-60494-V and cyt19 shRNA (m) Lentiviral Particles: sc-60495-V.

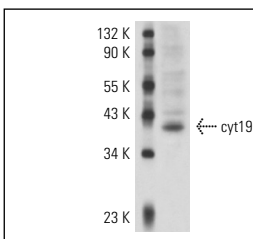
Molecular Weight of cyt19: 42 kDa.

Positive Controls: rat liver extract: sc-2395 or Hep G2 cell lysate: sc-2227.

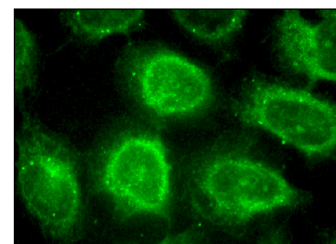
## RECOMMENDED SECONDARY REAGENTS

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



cyt19 (N-19): sc-47984. Western blot analysis of cyt19 expression in rat liver tissue extract.



cyt19 (N-19): sc-47984. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## STORAGE

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

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Satisfaction  
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Try **cyt19 (D-1): sc-376537** or **cyt19 (F-9): sc-377436**, our highly recommended monoclonal alternatives to cyt19 (N-19).