SANTA CRUZ BIOTECHNOLOGY, INC.

cyt19 (m): 293T Lysate: sc-119612

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

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2. Waters, S.B., Devesa, V., Del Razo, L.M., Styblo, M. and Thomas, D.J. 2004. Endogenous reductants support the catalytic function of recombinant rat cyt19, an arsenic methyltransferase. Chem. Res. Toxicol. 17: 404-409.
3. Thomas, D.J., Waters, S.B. and Styblo, M. 2004. Elucidating the pathway for arsenic methylation. Toxicol. Appl. Pharmacol. 198: 319-326.
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5. Hayakawa, T., Kobayashi, Y., Cui, X. and Hirano, S. 2005. A new metabolic pathway of arsenite: arsenic-glutathione complexes are substrates for human arsenic methyltransferase Cyt19. Arch. Toxicol. 79: 183-191.
6. Meza, M.M., Yu, L., Rodriguez, Y.Y., Guild, M., Thompson, D., Gandolfi, A.J. and Klimecki, W.T. 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.
7. Wood, T.C., Salavagionne, O.E., Mukherjee, B., Wang, L., Klumpp, A.F., Thomae, B.A., Eckloff, B.W., Schaid, D.J., Wieben, E.D. and Weinshilboum, R.M. 2006. Human arsen and functional genomics studies. J. Biol. Chem. 281: 7364-7373.

CHROMOSOMAL LOCATION

Genetic locus: As3mt (mouse) mapping to 19 C3.

PRODUCT

cyt19 (m): 293T Lysate represents a lysate of mouse cyt19 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

cyt19 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive cyt19 antibodies. Recommended use: 10-20 µl per lane.

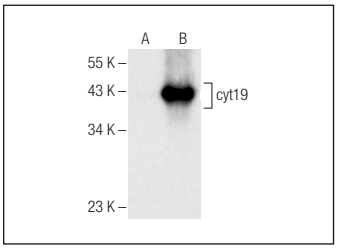
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

cyt19 (D-1): sc-376537 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse cyt19 expression in cyt19 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



cyt19 (D-1): sc-376537. Western blot analysis of cyt19 expression in non-transfected: sc-117752 (**A**) and mouse cyt19 transfected: sc-119612 (**B**) 293T whole cell lysates.

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.