SANTA CRUZ BIOTECHNOLOGY, INC.

NAT-1/2 (H-7): sc-271797

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Arylamine N-acetyltransferases (NAT-1 and NAT-2) catalyze N- or O-acetylation of heterocyclic and arylamine substrates in the detoxification of a wide array of drugs. Certain alleles causing high levels of N-acetyltransferase activity have been associated with colon and urinary bladder cancers, as NAT's also bioactivate several known carcinogens. Both NAT-1 and NAT-2 are cytoplasmic proteins and play an active role in the detoxification of many arylamine and hydrazine drugs. N-acetylation polymorphism is determined by the level of NAT activity in liver tissues, and has been linked to the action and toxicity of drugs that contain amines. Human NAT-1 is the functional homolog of rodent NAT-2, while human NAT-2 is the functional homolog of rodent NAT-1.

REFERENCES

1. Lanckriet, C., Bureau, J.J., Capdevielle, H., Gody, J.C., Olivier, T. and Siopathis, R.M. 1992. Morbidity and mortality in the pediatric service of Banqui (Central African Republic) during the year 1990. Implications for public health. Ann. Pediatr. 39:125-130.
2. Kiss, I., Nemeth, A., Bogner, B., Pajkos, G., Orsos, Z., Sandor, J., Csejtey, A., Faluhelyi, Z., Rodler, I. and Ember, I. 2004. Polymorphisms of glutathione-S-transferase and arylamine N-acetyltransferase enzymes and susceptibility to colorectal cancer. Anticancer Res. 24: 3965-3970.
3. Li, Y.C., Tyan, Y.S., Lee, Y.M., Tsao, T.Y., Chuang, J.Y., Kuo, H.M., Hsia, T.C., Yang, J.H. and Chung, J.G. 2005. N-acetyltransferase is involved in baicalein-induced N-acetylation of 2-aminofluorene and DNA-2-aminofluorene adduct formation in human leukemia HL-60 cells. In Vivo 19: 399-405.
4. Deguchi, M., Yoshida, S., Kennedy, S., Ohara, N., Motoyama, S. and Maruo, T. 2005. Lack of association between endometriosis and N-acetyl transferase 1 (NAT1) and 2 (NAT2) polymorphisms in a Japanese population. J. Soc. Gynecol. Investig. 12: 208-213.
5. Zhang, X.F., Bian, J.C., Zhang, X.Y., Zhang, Z.M., Jiang, F., Wang, Q.M., Wang, Q.J., Cao, Y.Y. and Tang, B.M. 2005. Are polymorphisms of N-acetyltransferase genes susceptible to primary liver cancer in Luoyang, China? World J. Gastroenterol. 11: 1457-1462.
6. Broberg, K., Bjork, J., Paulsson, K., Hoglund, M. and Albin, M. 2005. Constitutional short telomeres are strong genetic susceptibility markers for bladder cancer. Carcinogenesis 26: 1263-1271.

CHROMOSOMAL LOCATION

Genetic locus: NAT1/NAT2 (human) mapping to 8p22; Nat1/Nat2 (mouse) mapping to 8 B3.3.

SOURCE

NAT-1/2 (H-7) is a mouse monoclonal antibody raised against amino acids 117-168 mapping within an internal region of NAT-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NAT-1/2 (H-7) is recommended for detection of NAT-1 and NAT-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

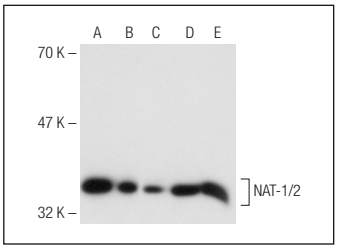
Molecular Weight of NAT-1/2: 34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or Hep G2 whole cell lysate: sc-2227.

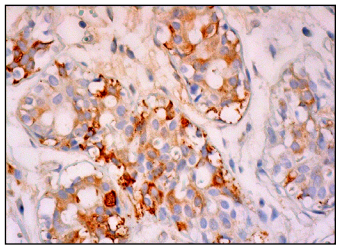
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



NAT-1/2 (H-7): sc-271797. Western blot analysis of NAT-1/2 expression in HeLa (**A**), Hep G2 (**B**), A-431 (**C**), A549 (**D**) and MOLT-4 (**E**) whole cell lysates.



NAT-1/2 (H-7): sc-271797. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic staining of glandular cells.

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 for detailed protocols and support products.