SANTA CRUZ BIOTECHNOLOGY, INC.

AICAR transformylase (H-3): sc-365402

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

The bifunctional purine biosynthesis protein ATIC (also designated PURH) contains AICAR transformylase and IMP cyclohydrolase activities. AICAR (5-aminoimidazole-4-carboxamide ribonucleotide) transformylase catalyzes the second to last step in purine biosynthesis, playing an important role in the production of nucleotides and IMP. Defects in the ATIC transformylase gene can cause AICA-rebsuria, also designated AICA-ribosiduria, an inborn error in purine biosynthesis that is neurologically cataclysmic. Individuals with AICA-rebosuria accumulate AICA-riboside, also designated ZMP, and its derivatives in erythrocytes and fibroblasts. Patients also excrete very large amounts of AICA-riboside in the urine. Mental retardation, epilepsy, dysmorphic features and congenital blindness are all symptoms of this disease.

REFERENCES

1. Marie, S., et al. 2004. AICA-ribosiduria: a novel, neurologically devastating inborn error of purine biosynthesis caused by mutation of ATIC. Am. J. Hum. Genet. 74: 1276-1281.
2. Sekizaki, T., et al. 2005. Different foreign genes incidentally integrated into the same locus of the *Streptococcus suis* genome. J. Bacteriol. 187: 872-883.

CHROMOSOMAL LOCATION

Genetic locus: ATIC (human) mapping to 2q35; Atic (mouse) mapping to 1 C3.

SOURCE

AICAR transformylase (H-3) is a mouse monoclonal antibody raised against amino acids 1-270 mapping at the N-terminus of AICAR transformylase 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

AICAR transformylase (H-3) is recommended for detection of AICAR transformylase 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).

Suitable for use as control antibody for AICAR transformylase siRNA (h): sc-60139, AICAR transformylase siRNA (m): sc-60140, AICAR transformylase shRNA Plasmid (h): sc-60139-SH, AICAR transformylase shRNA Plasmid (m): sc-60140-SH, AICAR transformylase shRNA (h) Lentiviral Particles: sc-60139-V and AICAR transformylase shRNA (m) Lentiviral Particles: sc-60140-V.

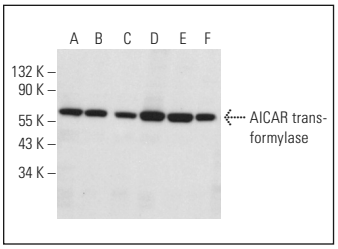
Molecular Weight of AICAR transformylase: 65 kDa.

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

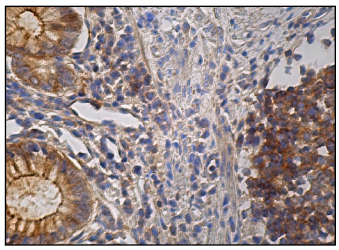
RECOMMENDED SUPPORT REAGENTS

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



AICAR transformylase (H-3): sc-365402. Western blot analysis of AICAR transformylase expression in HCT-116 (**A**), HeLa (**B**), A-431 (**C**), Hep G2 (**D**), CCRF-CEM (**E**) and Neuro-2A (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



AICAR transformylase: sc-365402. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular and lymphoid cells.

SELECT PRODUCT CITATIONS

1. Wang, L., et al. 2020. SET and MYND domain-containing protein 3 inhibits tumor cell sensitivity to cisplatin. Oncol. Lett. 19: 3469-3476.
2. Zhang, W.C., et al. 2022. MicroRNA-21 guide and passenger strand regulation of adenylosuccinate lyase-mediated purine metabolism promotes transition to an EGFR-TKI-tolerant persister state. Cancer Gene Ther. 29: 1878-1894.
3. Aftab, F., et al. 2023. An intrinsic purine metabolite AICAR blocks lung tumour growth by targeting oncoprotein mucin 1. Br. J. Cancer. E-published.

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.