SANTA CRUZ BIOTECHNOLOGY, INC.

KAT I (C-7): sc-374531

BACKGROUND

Kynurenine aminotransferases KAT I, KAT II, and KAT III belong to the class-I pyridoxal-phosphate-dependent aminotransferase family. KAT I is a cytoplasmic protein involved in glutamine catabolism. KAT I functions in the catalysis of the transamination of L-kinurenine to form kynurenic acid, a neuroprotective and anticonvulsant metabolite of tryptophan. Kynurenic acid is involved in synaptic transmission and has been implicated in a number of neurological disorders including schizophrenia and Huntington's disease. KAT I also functions in the metabolism of cysteine conjugates in some halogenated alkenes and alkanes to form reactive metabolites. KAT I has three isoforms. Isoform 1 is the full length protein, isoform 2 lacks amino acids 68-117 and isoform 3 lacks amino acids 251-422. Based on sequence similarity, KAT I is thought to function as a homodimer.

REFERENCES

1. Baran, H., et al. 1996. Increased kynurenic acid levels and decreased brain kynurenine aminotransferase I in patients with Down syndrome. Life Sci. 58: 1891-1899.
2. Tamburin, M., et al. 1999. Kynurenine aminotransferase I (KAT I) isoform gene expression in the rat brain: an *in situ* hybridization study. Neuroreport 10: 61-65.

CHROMOSOMAL LOCATION

Genetic locus: CCBL1 (human) mapping to 9q34.11; Ccbl1 (mouse) mapping to 2 B.

SOURCE

KAT I (C-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 6-29 at the N-terminus of KAT I 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.

KAT I (C-7) is available conjugated to agarose (sc-374531 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374531 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374531 PE), fluorescein (sc-374531 FITC), Alexa Fluor® 488 (sc-374531 AF488), Alexa Fluor® 546 (sc-374531 AF546), Alexa Fluor® 594 (sc-374531 AF594) or Alexa Fluor® 647 (sc-374531 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374531 AF680) or Alexa Fluor® 790 (sc-374531 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374531 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

KAT I (C-7) is recommended for detection of KAT I isoforms 1, 2 and 3 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).

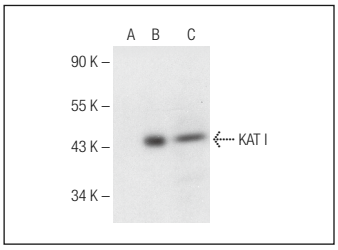
KAT I (C-7) is also recommended for detection of KAT I isoforms 1, 2 and 3 in additional species, including equine.

Suitable for use as control antibody for KAT I siRNA (h): sc-105587, KAT I siRNA (m): sc-77396, KAT I shRNA Plasmid (h): sc-105587-SH, KAT I shRNA Plasmid (m): sc-77396-SH, KAT I shRNA (h) Lentiviral Particles: sc-105587-V and KAT I shRNA (m) Lentiviral Particles: sc-77396-V.

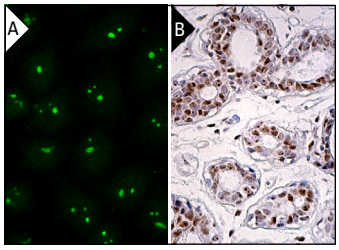
Molecular Weight of KAT I: 48 kDa.

Positive Controls: KAT I (m): 293T Lysate: sc-127032 or HeLa whole cell lysate: sc-2200.

DATA



KAT I (C-7): sc-374531. Western blot analysis of KAT I expression in non-transfected 293T: sc-117752 (**A**), mouse KAT I transfected 293T: sc-127032 (**B**) and HeLa (**C**) whole cell lysates.



KAT I (C-7): sc-374531. Immunofluorescence staining of methanol-fixed HeLa cells showing nucleolar localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing nucleolar and nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Pham, K., et al. 2022. Comprehensive metabolic profiling of Myc-amplified medulloblastoma tumors reveals key dependencies on amino acid, tricarboxylic acid and hexosamine pathways. Cancers 14: 1311.
2. Nguyen, D.T., et al. 2023. The tryptophan-metabolizing enzyme indoleamine 2,3-dioxygenase 1 regulates polycystic kidney disease progression. JCI Insight 8: e154773.

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.