

# KAT I (L-14): sc-54014

## 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-tryptophan 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.
3. Milart, P., et al. 2001. Kynurenine aminotransferase I activity in human placenta. *Placenta* 22: 259-261.
4. Kwok, J.B., et al. 2002. A missense mutation in kynurenine aminotransferase-1 in spontaneously hypertensive rats. *J. Biol. Chem.* 277: 35779-35782.
5. Rejdak, R., et al. 2003. Ontogenic changes of kynurenine aminotransferase I activity and its expression in the chicken retina. *Vision Res.* 43: 1513-1517.
6. Knyihár-Csillik, E., et al. 2004. Decreased expression of kynurenine aminotransferase-I (KAT I) in the substantia nigra of mice after 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) treatment. *Neuroscience* 126: 899-914.
7. Rossi, F., et al. 2004. Crystal structure of human kynurenine aminotransferase I. *J. Biol. Chem.* 279: 50214-50220.
8. Han, Q., et al. 2004. pH dependence, substrate specificity and inhibition of human kynurenine aminotransferase I. *Eur. J. Biochem.* 271: 4804-4814.
9. Knyihár-Csillik, E., et al. 2006. Effect of 6-hydroxydopamine treatment on kynurenine aminotransferase-I (KAT I) immunoreactivity of neurons and glial cells in the rat substantia nigra. *Acta Neuropathol.* 112: 127-137.

## CHROMOSOMAL LOCATION

Genetic locus: Ccbl1 (mouse) mapping to 2 B.

## SOURCE

KAT I (L-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of KAT I of mouse origin.

## RESEARCH USE

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

## 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-54014 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

KAT I (L-14) is recommended for detection of KAT I of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

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

Molecular Weight of KAT I: 48 kDa.

## 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) 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.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.