

ABAT (B-12): sc-393769

BACKGROUND

In the central nervous system GABA (γ -aminobutyric acid) functions as the main inhibitory transmitter by increasing a Cl^- conductance that inhibits neuronal firing. ABAT (4-aminobutyrate aminotransferase), also known as GABAT (GABA aminotransferase), L-AIBAT or (S)-3-amino-2-methylpropionate transaminase, is a 500 amino acid mitochondrial matrix protein belonging to the class-III pyridoxal-phosphate-dependent aminotransferase family, which catabolizes GABA into succinic semialdehyde. Existing as a homodimer, ABAT binds pyridoxal phosphate as a cofactor and is expressed in liver, brain, pancreas, kidney, placenta and heart. The gene encoding ABAT maps to human chromosome 16p13.2, and defects in ABAT are the cause of GABA-AT deficiency, which is characterized by hypotonia, hyperreflexia, psychomotor retardation, lethargy, EEG abnormalities and refractory seizures.

REFERENCES

- Jeremiah, S. and Povey, S. 1981. The biochemical genetics of human γ -aminobutyric acid transaminase. *Ann. Hum. Genet.* 45: 231-236.
- Jaeken, J., et al. 1984. γ -aminobutyric acid-transaminase deficiency: a newly recognized inborn error of neurotransmitter metabolism. *Neuropediatrics* 15: 165-169.

CHROMOSOMAL LOCATION

Genetic locus: ABAT (human) mapping to 16p13.2; Abat (mouse) mapping to 16 A1.

SOURCE

ABAT (B-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 357-391 within an internal region of ABAT of human origin.

PRODUCT

Each vial contains 200 μg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ABAT (B-12) is available conjugated to agarose (sc-393769 AC), 500 μg /0.25 ml agarose in 1 ml, for IP; to HRP (sc-393769 HRP), 200 μg /ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393769 PE), fluorescein (sc-393769 FITC), Alexa Fluor® 488 (sc-393769 AF488), Alexa Fluor® 546 (sc-393769 AF546), Alexa Fluor® 594 (sc-393769 AF594) or Alexa Fluor® 647 (sc-393769 AF647), 200 μg /ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393769 AF680) or Alexa Fluor® 790 (sc-393769 AF790), 200 μg /ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393769 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

ABAT (B-12) is recommended for detection of ABAT 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ABAT (B-12) is also recommended for detection of ABAT in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for ABAT siRNA (h): sc-93288, ABAT siRNA (m): sc-140745, ABAT shRNA Plasmid (h): sc-93288-SH, ABAT shRNA Plasmid (m): sc-140745-SH, ABAT shRNA (h) Lentiviral Particles: sc-93288-V and ABAT shRNA (m) Lentiviral Particles: sc-140745-V.

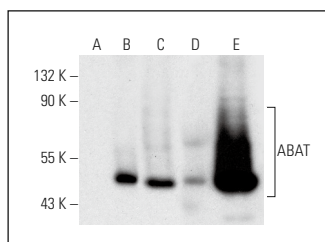
Molecular Weight of ABAT: 56 kDa.

Positive Controls: ABAT (h3): 293T Lysate: sc-159887, Hep G2 cell lysate: sc-2227 or human placenta extract: sc-363772.

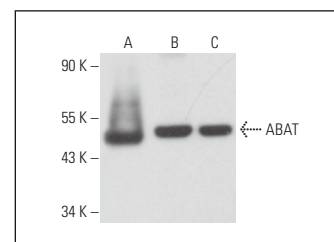
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ABAT (B-12): sc-393769. Western blot analysis of ABAT expression in non-transfected 293T: sc-117752 (A), human ABAT transfected 293T: sc-159887 (B) and Hep G2 (C) whole cell lysates and human placenta (D) and human liver (E) tissue extracts.



ABAT (B-12): sc-393769. Western blot analysis of ABAT expression in Hep G2 whole cell lysate (A) and mouse brain (B) and rat brain (C) tissue extracts.

SELECT PRODUCT CITATIONS

- Kamenaga, T., et al. 2023. Epigenetic dysregulation of articular cartilage during progression of hip femoroacetabular impingement disease. *J. Orthop. Res.* 41: 1678-1686.

RESEARCH USE

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