SANTA CRUZ BIOTECHNOLOGY, INC.

ATP13A2 (4B7): sc-293367

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BBACKGROUND

ATP13A2 (ATPase type 13A2), also known as KRPPD, PARK9 or HSA9947, is an 1,180 amino acid multi-pass membrane protein that belongs to the P5 subfamily of ATPases which play an important role in the transportation of inorganic cations. Expressed as multiple alternative spliced isoforms, ATP13A2 functions to catalyze the conversion of ATP to ADP and a free phosphate, thereby participating in the active transport of ions across cellular membranes. Defects in the gene encoding ATP13A2 are the cause of Kufor-Rakeb syndrome (KRS), a rare hereditary type of Parkinson's disease that exhibits juvenile onset and is characterized by neurodegeneration and dementia. The ATP13A2 gene maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes, and comprises nearly 8% of the human genome.

REFERENCES

1. Hampshire, D.J., et al. 2001. Kufor-Rakeb syndrome, pallido-pyramidal degeneration with supranuclear upgaze paresis and dementia, maps to 1p36. J. Med. Genet. 38: 680-682.
2. Schultheis, P.J., et al. 2004. Characterization of the P5 subfamily of P-type transport ATPases in mice. Biochem. Biophys. Res. Commun. 323: 731-738.
3. Ramirez, A., et al. 2006. Hereditary parkinsonism with dementia is caused by mutations in ATP13A2, encoding a lysosomal type 5 P-type ATPase. Nat. Genet. 38: 1184-1191.
4. Di Fonzo, A., et al. 2007. ATP13A2 missense mutations in juvenile parkinsonism and young onset Parkinson disease. Neurology 68: 1557-1562.
5. Ning, Y.P., et al. 2008. PARK9-linked parkinsonism in eastern Asia: mutation detection in ATP13A2 and clinical phenotype. Neurology 70: 1491-1493.
6. Lin, C.H., et al. 2008. Novel ATP13A2 variant associated with Parkinson disease in Taiwan and Singapore. Neurology 71: 1727-1732.
7. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 610513. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
8. Vilariño-Güell, C., et al. 2009. ATP13A2 variability in Parkinson disease. Hum. Mutat. 30: 406-410.
9. Rakovic, A., et al. 2009. Genetic association study of the P-type ATPase ATP13A2 in late-onset Parkinson's disease. Mov. Disord. 24: 429-433.

CHROMOSOMAL LOCATION

Genetic locus: ATP13A2 (human) mapping to 1p36.13; Atp13a2 (mouse) mapping to 4 D3.

SOURCE

ATP13A2 (4B7) is a mouse monoclonal antibody raised against amino acids 68-154 of ATP13A2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ATP13A2 (4B7) is recommended for detection of ATP13A2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ATP13A2 siRNA (h): sc-88587, ATP13A2 siRNA (m): sc-141339, ATP13A2 shRNA Plasmid (h): sc-88587-SH, ATP13A2 shRNA Plasmid (m): sc-141339-SH, ATP13A2 shRNA (h) Lentiviral Particles: sc-88587-V and ATP13A2 shRNA (m) Lentiviral Particles: sc-141339-V.

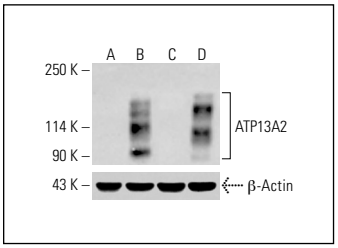
Molecular Weight of ATP13A2: 129 kDa.

Positive Controls: mouse brain extract: sc-2253 or U-251-MG whole cell lysate: sc-364176.

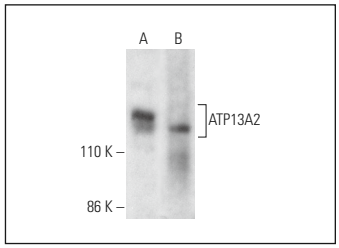
RECOMMENDED SUPPORT REAGENTS

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).

DATA



ATP13A2 (4B7): sc-293367. Western blot analysis of ATP13A2 expression in untreated K-562 (**A**), chemically-treated K-562 (**B**), untreated HCT-116 (**C**) and chemically-treated HCT-116 (**D**) whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



ATP13A2 (4B7): sc-293367. Western blot analysis of ATP13A2 expression in U-251 MG whole cell lysate (**A**) and mouse brain tissue extract (**B**).

SELECT PRODUCT CITATIONS

1. Fernández-Espejo, E., et al. 2022. Salivary ATP13A2 is a potential marker of therapy-induced motor complications and is expressed by inclusions in submandibulary glands in Parkinson's disease. Clin. Park. Relat. Disord. 7: 100163.

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.