SANTA CRUZ BIOTECHNOLOGY, INC.

DJ-1 (D-4): sc-55572

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The DJ-1 gene encodes a highly-conserved protein which is implicated in a number of cell processes. DJ-1 was first identified as a novel oncogene that transformed mouse NIH/3T3 cells in cooperation with activated Ras. Additionally, DJ-1 was cloned in rat as SP22 or CAP-1 and found to be an infertility-related sperm protein, whose expression is reduced in sperm treated with toxicants. DJ-1 also positively regulates the androgen receptor (AR) by forming a complex with PIASxα, a negative regulator of AR. The gene encoding human DJ-1 maps to chromosome 1p36.23, a region identified as a hot spot of chromosome abnormalities in several tumor cells. Subsequently, mutations in the DJ-1 gene have been implicated in Parkinson's disease, and loss of DJ-1 function leads to neurodegeneration. DJ-1 is an ubiquitously expressed protein that is induced in response to growth stimuli and translocates from the cytoplasm to the nucleus during the S phase of the cell cycle.

CHROMOSOMAL LOCATION

Genetic locus: PARK7 (human) mapping to 1p36.23; Park7 (mouse) mapping to 4 E2.

SOURCE

DJ-1 (D-4) is a mouse monoclonal antibody raised against amino acids 1-189 representing full length DJ-1 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.

DJ-1 (D-4) is available conjugated to agarose (sc-55572 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55572 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55572 PE), fluorescein (sc-55572 FITC), Alexa Fluor® 488 (sc-55572 AF488), Alexa Fluor® 546 (sc-55572 AF546), Alexa Fluor® 594 (sc-55572 AF594) or Alexa Fluor® 647 (sc-55572 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55572 AF680) or Alexa Fluor® 790 (sc-55572 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

DJ-1 (D-4) is recommended for detection of DJ-1 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 DJ-1 siRNA (h): sc-37080, DJ-1 siRNA (m): sc-37081, DJ-1 shRNA Plasmid (h): sc-37080-SH, DJ-1 shRNA Plasmid (m): sc-37081-SH, DJ-1 shRNA (h) Lentiviral Particles: sc-37080-V and DJ-1 shRNA (m) Lentiviral Particles: sc-37081-V.

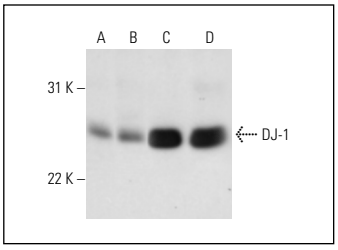
Molecular Weight of DJ-1: 23 kDa.

Positive Controls: F9 cell lysate: sc-2245, mouse testis extract: sc-2405 or rat testis extract: sc-2400.

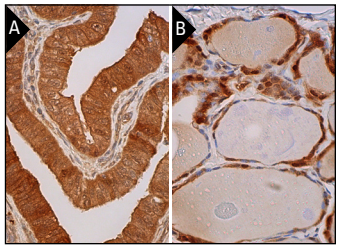
STORAGE

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

DATA



DJ-1 (D-4): sc-55572. Western blot analysis of DJ-1 expression in F9 whole cell lysate (**A**) and mouse testis (**B**), rat testis (**C**) and rat brain (**D**) tissue extracts.



DJ-1 (D-4): sc-55572. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube (**A**) and human thyroid gland (**B**) tissue showing nuclear and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Sakurai, M., et al. 2009. Induction of Parkinson disease-related proteins in motor neurons after transient spinal cord ischemia in rabbits. J. Cereb. Blood Flow Metab. 29: 752-758.
2. Morimoto, N., et al. 2010. Induction of parkinsonism-related proteins in the spinal motor neurons of transgenic mouse carrying a mutant SOD1 gene. J. Neurosci. Res. 88: 1804-1811.
3. Huang, Z., et al. 2011. Proteomic analysis of hippocampal proteins of F344 rats exposed to 1-bromopropane. Toxicol. Appl. Pharmacol. 257: 93-101.
4. Repici, M., et al. 2013. Parkinson's disease-associated mutations in DJ-1 modulate its dimerization in living cells. J. Mol. Med. 91: 599-611.
5. Li, X., et al. 2014. Quantitative profiling of the rat heart myoblast secretome reveals differential responses to hypoxia and re-oxygenation stress. J. Proteomics 98: 138-149.
6. Shi, S.Y., et al. 2015. DJ-1 links muscle ROS production with metabolic reprogramming and systemic energy homeostasis in mice. Nat. Commun. 6: 7415.
7. Lee, D.H., et al. 2018. PARK7 modulates autophagic proteolysis through binding to the N-terminally arginylated form of the molecular chaperone HSPA5. Autophagy 14: 1870-1885.
8. Gatz, C., et al. 2019. Identification of cellular pathogenicity markers for SIL1 mutations linked to Marinesco-Sjögren syndrome. Front. Neurol. 10: 562.
9. Jin, F., et al. 2020. DJ-1 promotes cell proliferation and tumor metastasis in esophageal squamous cell carcinoma via the Wnt/β-catenin signaling pathway. Int. J. Oncol. E-published.

RESEARCH USE

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