

# DJ-1 ( $\alpha$ DJ-1/E2-29): sc-33665

## 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 PIAS $\alpha$ , 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 a ubiquitously expressed protein that is induced in response to growth stimuli and trans-locates from the cytoplasm to the nucleus during the S phase of the cell cycle.

## REFERENCES

1. Nagakubo, D., et al. 1997. DJ-1, a novel oncogene which transforms mouse NIH/3T3 cells in cooperation with Ras. *Biochem. Biophys. Res. Commun.* 231: 509-513.
2. Taira, T., et al. 2001. Molecular cloning of human and mouse DJ-1 genes and identification of Sp1-dependent activation of the human DJ-1 promoter. *Gene* 263: 285-292.
3. Takahashi, K., et al. 2001. DJ-1 positively regulates the androgen receptor by impairing the binding of PIAS $\alpha$  to the receptor. *J. Biol. Chem.* 276: 37556-37563.
4. Bonifati, V., et al. 2003. Mutations in the DJ-1 gene associated with autosomal recessive early-onset Parkinsonism. *Science* 299: 256-259.
5. Niki, T., et al. 2003. DJBP: a novel DJ-1-binding protein, negatively regulates the androgen receptor by recruiting histone deacetylase complex, and DJ-1 antagonizes this inhibition by abrogation of this complex. *Mol. Cancer Res.* 1: 247-261.
6. Cookson, M.R. 2003. Pathways to parkinsonism. *Neuron* 37: 7-10.

## CHROMOSOMAL LOCATION

Genetic locus: PARK7 (human) mapping to 1p36.23.

## SOURCE

DJ-1 ( $\alpha$ DJ-1/E2-29) is a mouse monoclonal antibody raised against DJ-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

DJ-1 ( $\alpha$ DJ-1/E2-29) is recommended for detection of DJ-1 of human origin by Western Blotting (starting dilution 1:100, dilution range ), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for DJ-1 siRNA (h): sc-37080, DJ-1 shRNA Plasmid (h): sc-37080-SH and DJ-1 shRNA (h) Lentiviral Particles: sc-37080-V.

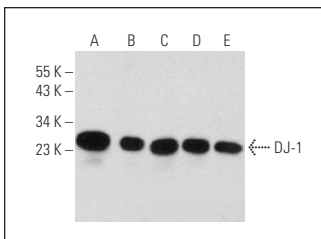
Molecular Weight of DJ-1: 23 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Raji whole cell lysate: sc-364236 or ZR-75-1 cell lysate: sc-2241.

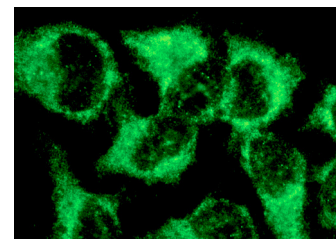
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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



DJ-1 ( $\alpha$ DJ-1/E2-29): sc-33665. Western blot analysis of DJ-1 expression in Raji (A), MCF7 (B), ZR-75-1 (C), OVCAR-3 (D) and TF-1 (E) whole cell lysates.



DJ-1 ( $\alpha$ DJ-1/E2-29): sc-33665. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Hintsala, H.R., et al. 2015. Dysregulation of redox-state-regulating enzymes in melanocytic skin tumours and the surrounding microenvironment. *Histopathology* 67: 348-357.

## RESEARCH USE

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



See **DJ-1 (D-4): sc-55572** for DJ-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.