

# nitrate $\alpha$ -synuclein (Syn514): sc-32279

## BACKGROUND

The synuclein family members, including  $\alpha$ -synuclein (also designated NACP for non- $\beta$ -Amyloid component) and  $\beta$ -synuclein, are predominantly expressed in the brain and are speculated to be involved in synaptic regulation and neuronal plasticity.  $\alpha$ -synuclein is localized to neuronal cell bodies and synapses.  $\alpha$ -synuclein was first identified as a component of Alzheimer's disease amyloid plaques. Abnormal platelet function in Alzheimer's disease has been demonstrated. During megakaryocytic differentiation,  $\alpha$ -synuclein was found to be upregulated, while  $\beta$ -synuclein was downregulated, indicating that coordinate expression of synucleins may be important during hematopoietic cell differentiation. A mutant form of  $\alpha$ -synuclein has been found in patients with early onset Parkinson's disease.

## REFERENCES

1. Ueda, K., et al. 1993. Molecular cloning of cDNA encoding an unrecognized component of Amyloid in Alzheimer's disease. Proc. Natl. Acad. Sci. USA 90: 11282-11286.
2. Jakes, R., et al. 1994. Identification of two distinct synucleins from human brain. FEBS Lett. 345: 27-32.
3. Iwai, A., et al. 1995. The precursor protein of non-A  $\beta$  component of Alzheimer's disease Amyloid is a presynaptic protein of the central nervous system. Neuron 14: 467-475.
4. Polymeropoulos, M.H., et al. 1997. Mutation in the  $\alpha$ -synuclein gene identified in families with Parkinson's disease. Science 276: 2045-2047.

## CHROMOSOMAL LOCATION

Genetic locus: SNCA (human) mapping to 4q22.1; Snca (mouse) mapping to 6 B3.

## SOURCE

nitrate $\alpha$ -synuclein (Syn514) is a mouse monoclonal antibody raised against oxidized  $\alpha$ -synuclein of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

nitrate $\alpha$ -synuclein (Syn514) is recommended for detection of nitrate $\alpha$ -synuclein of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

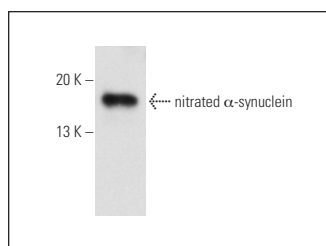
Suitable for use as control antibody for  $\alpha$ -synuclein siRNA (h): sc-29619,  $\alpha$ -synuclein siRNA (m): sc-42286,  $\alpha$ -synuclein shRNA Plasmid (h): sc-29619-SH,  $\alpha$ -synuclein shRNA Plasmid (m): sc-42286-SH,  $\alpha$ -synuclein shRNA (h) Lentiviral Particles: sc-29619-V and  $\alpha$ -synuclein shRNA (m) Lentiviral Particles: sc-42286-V.

Molecular Weight of nitrate $\alpha$ -synuclein: 14 kDa.

## 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<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



nitrate $\alpha$ -synuclein (Syn514): sc-32279. Western blot analysis of human recombinant nitrate $\alpha$ -synuclein.

## SELECT PRODUCT CITATIONS

1. Sekigawa, A., et al. 2012. Distinct mechanisms of axonal globule formation in mice expressing human wild type  $\alpha$ -synuclein or dementia with Lewy bodies-linked P123H  $\beta$ -synuclein. Mol. Brain 5: 34.
2. Xuan, Q., et al. 2016. Post-translational modifications of  $\alpha$ -synuclein contribute to neurodegeneration in the colon of elderly individuals. Mol. Med. Rep. 13: 5077-5083.
3. Uemura, N., et al. 2018. Inoculation of  $\alpha$ -synuclein preformed fibrils into the mouse gastrointestinal tract induces Lewy body-like aggregates in the brainstem via the vagus nerve. Mol. Neurodegener. 13: 21.
4. Uemura, N., et al. 2019. Limited spread of pathology within the brainstem of  $\alpha$ -synuclein BAC transgenic mice inoculated with preformed fibrils into the gastrointestinal tract. Neurosci. Lett. 26: 134651.
5. Ma, L.Y., et al. 2019. Nitrate $\alpha$ -synuclein in minor salivary gland biopsies in Parkinson's disease. Neurosci. Lett. 704: 45-49.

## STORAGE

Store at 4 $^{\circ}$  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.

## PROTOCOLS

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