

Synaptogyrin-3 (E-11): sc-271046



The Power to Question

BACKGROUND

The synaptogyrin family of proteins are integral membrane proteins containing four transmembrane regions. Synaptogyrins are tyrosine-phosphorylated proteins with two neuronal (Synaptogyrins-1 and -3) and one ubiquitous (Synaptogyrin-2) isoform. Synaptophysin and synaptogyrin represent the major constituents of synaptic vesicles. Synaptogyrin-1 is associated with presynaptic vesicles in neuronal cells. Synaptogyrin-2, also known as Cellugyrin, has a tyrosine phosphorylated C-terminal cytoplasmic tail and is involved in the regulation of membrane traffic in non-neuronal cells. Synaptogyrin-3 is expressed mainly in brain and placenta. The SYNGR4 gene encodes for the 234 amino acid protein Synaptogyrin-4.

CHROMOSOMAL LOCATION

Genetic locus: SYNGR3 (human) mapping to 16p13.3; Syng3 (mouse) mapping to 17 A3.3.

SOURCE

Synaptogyrin-3 (E-11) is a mouse monoclonal antibody raised against amino acids 160-229 mapping at the C-terminus of Synaptogyrin-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Synaptogyrin-3 (E-11) is available conjugated to agarose (sc-271046 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271046 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271046 PE), fluorescein (sc-271046 FITC), Alexa Fluor® 488 (sc-271046 AF488), Alexa Fluor® 546 (sc-271046 AF546), Alexa Fluor® 594 (sc-271046 AF594) or Alexa Fluor® 647 (sc-271046 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271046 AF680) or Alexa Fluor® 790 (sc-271046 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Synaptogyrin-3 (E-11) is recommended for detection of Synaptogyrin-3 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).

Suitable for use as control antibody for Synaptogyrin-3 siRNA (h): sc-45555, Synaptogyrin-3 siRNA (m): sc-45556, Synaptogyrin-3 siRNA (r): sc-270607, Synaptogyrin-3 shRNA Plasmid (h): sc-45555-SH, Synaptogyrin-3 shRNA Plasmid (m): sc-45556-SH, Synaptogyrin-3 shRNA Plasmid (r): sc-270607-SH, Synaptogyrin-3 shRNA (h) Lentiviral Particles: sc-45555-V, Synaptogyrin-3 shRNA (m) Lentiviral Particles: sc-45556-V and Synaptogyrin-3 shRNA (r) Lentiviral Particles: sc-270607-V.

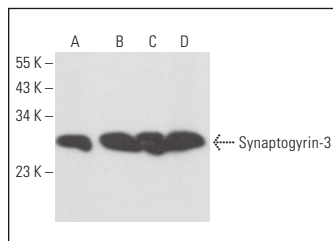
Molecular Weight of Synaptogyrin-3: 25 kDa.

Positive Controls: mouse brain extract: sc-2253, human cerebral cortex extract: sc-516707 or rat brain extract: sc-2392.

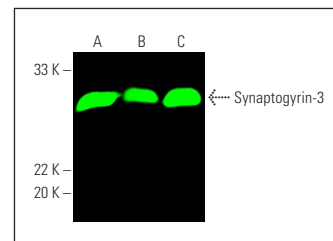
STORAGE

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

DATA



Synaptogyrin-3 (E-11): sc-271046. Western blot analysis of Synaptogyrin-3 expression in mouse brain (A), rat brain (B), rat hippocampus (C) and rat hypothalamus (D) tissue extracts.



Synaptogyrin-3 (E-11): sc-271046. Near-infrared western blot analysis of Synaptogyrin-3 expression in rat brain (A), human cerebral cortex (B) and mouse brain (C) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ-BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

- Schmitt, M., et al. 2016. Harnessing the trophic and modulatory potential of statins in a dopaminergic cell line. *Synapse* 70: 71-86.
- Schmitt, M., et al. 2017. U18666A, an activator of sterol regulatory element binding protein pathway, modulates presynaptic dopaminergic phenotype of SH-SY5Y neuroblastoma cells. *Synapse*. E-published.
- McInnes, J., et al. 2018. Synaptogyrin-3 mediates presynaptic dysfunction induced by Tau. *Neuron* 97: 823-835.e8.
- Koller, E.J., et al. 2020. Intracerebral expression of AAV-APOE4 is not sufficient to alter Tau burden in two distinct models of tauopathy. *Mol. Neurobiol.* 57: 1986-2001.
- Largo-Barrientos, P., et al. 2021. Lowering Synaptogyrin-3 expression rescues Tau-induced memory defects and synaptic loss in the presence of microglial activation. *Neuron* 109: 767-777.e5.
- Li, L., et al. 2022. Transcriptional regulation of the synaptic vesicle protein Synaptogyrin-3 (SYNGR3) gene: the effects of NURR1 on its expression. *Int. J. Mol. Sci.* 23: 3646.
- Murphy, R.M., et al. 2022. Tumor cell extrinsic Synaptogyrin-3 expression as a diagnostic and prognostic biomarker in head and neck cancer. *Cancer Res. Commun.* 2: 987-1004.
- Ho, P.W., et al. 2023. *In vivo* overexpression of Synaptogyrin-3 promotes striatal synaptic dopamine uptake in LRRK2R1441G mutant mouse model of Parkinson's disease. *Brain Behav.* 13: e2886.
- Zhou, X., et al. 2024. Integrated proteomics reveals autophagy landscape and an autophagy receptor controlling PKA-R1 complex homeostasis in neurons. *Nat. Commun.* 15: 3113.

RESEARCH USE

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