BACKGROUND

Complexin 1 and Complexin 2, also designated Synaphin 1 and Synaphin 2, contain an α-helical middle domain of approximately 58 amino acids. Complexin 1 and Complexin 2 are expressed in presynaptic terminals of inhibitory and excitatory hippocampal neurons, respectively, and in cytoplasmic pools during early stages of development. Complexins promote SNARE (soluble N-ethylmaleimide-sensitive factor attachment protein receptors) precomplex formation by binding to synaxin with its α-helical domain. Complexins are important regulators of neurotransmitter release at a late step in calcium-dependent neurotransmitter release or immediately after the calcium-triggering step of fast synchronous transmitter release and preceding vesicle fusion. Neurons lacking complexins show reduced neurotransmitter release efficiency due to decreased calcium sensitivity of the synaptic secretion process. Complexin 2 may play a role in LTP (long-term potentiation) following tetanic stimulation. A progressive loss of Complexin 2 occurs in the brains of mice carrying the Huntington disease mutation, an autosomal dominant neurodegenerative disorder. Changes in the neurotransmitter release might contribute to the motor, emotional and cognitive dysfunctions seen in these mice.

REFERENCES


CHROMOSOMAL LOCATION

Genetic locus: CPLX1 (human) mapping to 4p16.3, CPLX2 (human) mapping to 5q35.2; Cplx1 (mouse) mapping to 5 F, Cplx2 (mouse) mapping to 13 B1.

SOURCE

Complexin-1/2 (D-9) is a mouse monoclonal antibody raised against amino acids 1-134 representing full length Complexin-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Complexin-1/2 (D-9) is recommended for detection of Complexin-1 and Complexin-2 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), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:1500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Complexin-1/2: 15 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or human hippocampus tissue extract.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG<sub>κ</sub> BP-HRP: sc-516102 or m-IgG<sub>κ</sub> BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-516140 or m-IgG<sub>κ</sub> 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

Complexin-1/2 (D-9): sc-365152. Western blot analysis of Complexin-1/2 expression in IMR-32 whole cell lysate (A) and human hippocampus tissue extract (B).

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.