BACKGROUND

Cysteine string proteins (CSPs) are synaptic vesicle-associated, secretory vesicle proteins that are involved in Ca\(^{2+}\)-regulated exocytosis of synaptic vesicles and modulation of presynaptic transmembrane calcium fluxes in neuroendocrine and endocrine cell types. CSP contains a J-domain that binds HSP 70/HSC 70 chaperone ATPases and a membrane-targeting, palmitoylated cysteine-rich string region. CSPs may act as molecular chaperones in synapses, and mediate conformational folding of components of the vesicular exocytotic machinery. CSP is involved in the fine tuning of neurotransmission through its interaction with receptor-coupled trimeric GTP binding proteins (G proteins) and N-type Ca\(^{2+}\) channels. Two variants of CSP have been described: CSP1; and the 31 amino acid, C-terminally truncated isoform, CSP2. Subcellular fractionation of Insulinoma cells shows CSP1 in granular fractions, while the membrane and cytosol fractions contain predominantly CSP2. The fractions also contain additional proteins, presumably CSP dimers. Furthermore, in various mammalian cell lines (including rat brain) CSP1 expression predominates CSP2 expression.

APPLICATIONS

CSP (H-3) is recommended for detection of CSP isoforms 1 and 2 and \(\beta\)-CSP of human and rat 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).

CSP (H-3) is also recommended for detection of CSP isoforms 1 and 2 and \(\beta\)-CSP in additional species, including equine. Suitable for use as control antibody for CSP siRNA (h): sc-43709, CSP shRNA Plasmid (h): sc-43709-SH and CSP shRNA Lentiviral Particles: sc-43709-V.

Molecular Weight of CSP: 30 kDa.

Positive Controls: rat cerebellum extract: sc-2398 or rat brain extract: sc-2392.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use ProteinA/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

REFERENCE


CHROMOSOMAL LOCATION

Genetic locus: DNAJC5 (human) mapping to 20q13.33; Dnajc5 (mouse) mapping to 2 H4.

SOURCE

CSP (H-3) is a mouse monoclonal antibody raised against amino acids 71-198 mapping at the C-terminus of CSP of human origin.

PRODUCT

Each vial contains 200 µg IgG\(_1\) in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DATA

CSP (H-3) sc-137128. Western blot analysis of CSP expression in rat cerebellum (A) and rat brain (B) tissue extracts.

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 or our catalog for detailed protocols and support products.