

DESCRIPTION

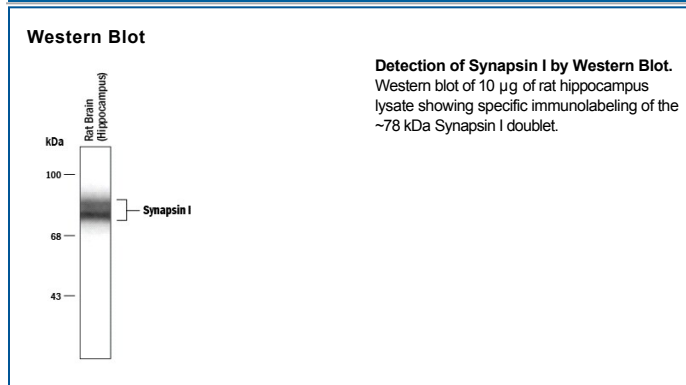
| | |
|---------------------------|---|
| Species Reactivity | Human/Mouse/Rat/Bovine |
| Specificity | This antibody is specific for the ~78 kDa Synapsin I doublet in Western blots of rat brain lysates. Immunolabeling is blocked by preadsorption of the antibody with the native protein immunogen. |
| Source | Polyclonal Rabbit IgG |
| Purification | Antigen Affinity-purified |
| Immunogen | Synapsin I |
| Formulation | 10 µg per vial; lyophilized in 5 mM ammonium bicarbonate. See Certificate of Analysis for details. |

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

| | Recommended Concentration | Sample |
|-----------------------------|----------------------------------|----------------|
| Western Blot | 1:1000 dilution | See Below |
| Immunofluorescence | 1:2000 dilution | No Sample Info |
| Immunohistochemistry | 1:2000 dilution | No Sample Info |
| Immunoprecipitation | 0.5 µg/100 µg cell lysate | No Sample Info |

DATA



PREPARATION AND STORAGE

| | |
|--------------------------------|--|
| Shipping | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| Stability & Storage | The lyophilized product is stable at ≤ -20° C for at least one year. After reconstitution the antibody should be stored at ≤ -20° C. |

BACKGROUND

Synapsin I is an 85 kDa neuron-specific, O-GlcNAcylated phosphoprotein that interacts with synaptic vesicles and regulates neurotransmitter release. It is concentrated in pre-synaptic terminals where it anchors synaptic vesicles to the underlying cytoskeleton. Phosphorylation at various sites reduces Synapsin I binding to neurosecretory vesicles, making them available for neurotransmitter release. Rat Synapsin I is 704 amino acids (aa) in length and contains five domains, named A-E/F. Domains A-D lie between amino acids 1-655, while E and F are alternate splice forms. Domain A (28 aa) regulates neurotransmitter release in a phosphorylation-dependent manner. Domains C (328 aa) and E (49 aa) anchor to actin in the synaptic region. Domains B (84 aa) and D (235 aa) promote actin and secretory vesicle interaction, and actin nucleation. Phosphorylation of S603 and S566 in domain D, and S9 in domain A, reduces the affinity of Synapsin I for actin and secretory vesicles.

References:

1. Yamagata, Y. (2003) J. Pharmacol. Sci. **93**:22.
2. Sakurada, K. *et al.* (2002) J. Biol. Chem. **277**:45473.
3. Hilfiker, S. *et al.* (2005) J. Neurosci. **25**:2658.
4. McCaffery, C.A. and L.J. DeGennaro (1986) EMBO J. **5**:3167.
5. Cole, R.N. and G.W. Hart (1999) J. Neurochem. **73**:418.