

## DESCRIPTION

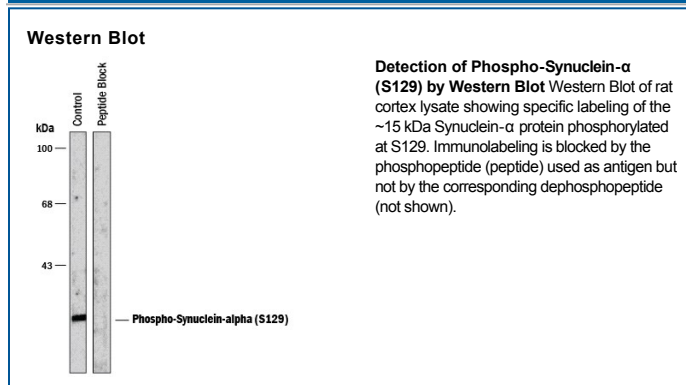
<b>Species Reactivity</b>	Human/Mouse/Rat/Bovine/Canine/Primate
<b>Specificity</b>	Human, mouse, rat, bovine, canine, and non-human primate Synuclein- $\alpha$ phosphorylated at S129
<b>Source</b>	Polyclonal Rabbit IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Phosphopeptide corresponding to amino acid residues surrounding the phospho-S129 of Synuclein- $\alpha$
<b>Formulation</b>	100 $\mu$ L in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 $\mu$ g/mL BSA, and 50% glycerol. 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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1:1000 dilution	See Below

## DATA



## PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	For long-term storage, $\leq -20^\circ$ C is recommended. Product is stable at $\leq -20^\circ$ C for at least 1 year.

## BACKGROUND

Synuclein- $\alpha$  is a 14 kDa member of the synuclein family. It is found in both the neuron nucleus and the cytosol of presynaptic nerve terminals in the brain. Synuclein- $\alpha$  is 140 amino acids in length and runs anomalously at 19 kDa in SDS-page. It contains three domains; an N-terminal lipid-binding domain, a central amyloid-binding region, and a C-terminal acidic tail. The N-terminal area (aa 1 - 100) is involved with lipid (membrane) and protein binding. The C-terminus may be regulatory. There is a NAC (non-A $\beta$  component of AD amyloid) segment between aa 61 - 95. This has been thought to mediate synuclein- $\alpha$  filament formation and microtubular stabilization. Whether it exists as a stand-alone normal cleavage product of synuclein- $\alpha$  is unclear. Synuclein- $\alpha$  is phosphorylated on multiple sites. S129 undergoes constitutive phosphorylation and dephosphorylation. When phosphorylated, filament formation (and perhaps oligomerization) is promoted. Uncontrolled filament/fibril formation is suggested to be involved in Parkinson's disease Lewy body formation. Tyrosine phosphorylation also occurs at Y125. Synuclein- $\alpha$  is known to bind to, and inhibit, PLD-1 and -2. When phosphorylated at Y125, synuclein- $\alpha$  activity is decreased and PLD activity is increased.

### References:

1. da Costa, C.A. (2003) *Curr. Mol. Med.* 3:17.
2. Ueda, K. et al. (1993) *Proc. Natl. Acad. Sci. USA* 90:11282.
3. Okochi, M. et al. (2000) *J. Biol. Chem.* 275:390.
4. Goers, J. et al. (2003) *Biochemistry* 42:8465.
5. Ahn, B-H. et al. (2002) *J. Biol. Chem.* 277:12334.