

## BACKGROUND

Synucleins are small, soluble proteins expressed primarily in neural tissue and in certain tumors. The family includes three known proteins: alpha-Synuclein, beta-Synuclein, and gamma-Synuclein.<sup>1</sup> All Synucleins have in common a highly conserved alpha-helical lipid-binding motif with similarity to the class-A2 lipid-binding domains of the exchangeable apolipoproteins. Synuclein family members are not found outside vertebrates, although they have some conserved structural similarity with plant late-embryo-abundant proteins. The alpha- and beta-Synuclein proteins are found primarily in brain tissue, where they are seen mainly in presynaptic terminals. The gamma-Synuclein protein is found primarily in the peripheral nervous system and retina, but its expression in breast tumors is a marker for tumor progression.<sup>2</sup> Normal cellular functions have not been determined for any of the Synuclein proteins, although some data suggest a role in the regulation of membrane stability and/or turnover.<sup>3</sup> Mutations in alpha-Synuclein are associated with rare familial cases of early-onset Parkinson's disease, and the protein accumulates abnormally in Parkinson's disease, Alzheimer's disease, and several other neurodegenerative illnesses.<sup>4</sup> Phosphorylation of alpha-Synuclein at Ser 129 promoted fibril formation *in vitro* and these results highlight the importance of phosphorylation of filamentous proteins in the pathogenesis of neurodegenerative disorders.<sup>5</sup>

### References:

1. George, J.M.: Genome Biol. 3:3002.1-6, 2001
2. Maries, E. et al: Nature Rev. Neurosci. 4:727-38, 2003
3. Galvin, J.E. et al: Arch. Neurol. 58:186-190, 2001
4. Lucking, C.B. & Brice, A.: Cell. Mol. Life Sci. 57:1894-1908, 2000
5. Fujiwara, H. et al: Nature Cell Biol. 4:160-4, 2002

## TECHNICAL INFORMATION

### Source:

Phospho-alpha-Synuclein (Ser129) Antibody is a rabbit antibody raised against a short peptide from human alpha-Synuclein sequence surrounding and containing phospho-Ser129.

### Specificity and Sensitivity:

This antibody detects endogenous phosphorylated alpha-Synuclein (Ser129) proteins without cross-reactivity with other family members.

**Storage Buffer:** Rabbit IgG in phosphate buffered saline (without Mg<sup>2+</sup> and Ca<sup>2+</sup>), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.

### Storage:

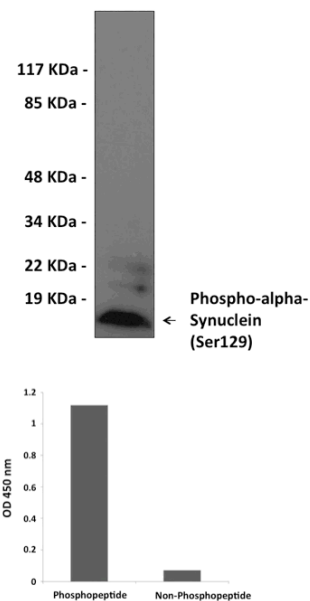
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

## APPLICATIONS

Application:	*Dilution:
WB	1:500-1:1000
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d
ELISA	1:1000

*\*Optimal dilutions must be determined by end user.*

## QUALITY CONTROL DATA



**Top:** Western blot analysis of extracts from Mouse brain.

**Bottom:** ELISA for Immunogen Phosphopeptide (left) and Non-Phosphopeptide (right).

