

Product Specification Sheet

**Beta-Synuclein (phosphoneuroprotein 14 or PNP14) Antibodies**

<b>Cat. # SYN13-S</b>	Rabbit Anti-Human synuclein-beta antiserum #3	<b>SIZE:</b> 100 ul
<b>Cat. # SYN13-A</b>	Rabbit Anti- Human synuclein-beta, Ig G #3, aff pure	<b>SIZE:</b> 100 ug
<b>Cat. # SYN13-P</b>	Human synuclein-beta Control peptide #3	<b>SIZE:</b> 100 ug
<b>Cat. # SYN13-C</b>	Human beta synuclein-beta protein W.blot +ve Control	<b>SIZE:</b> 100 ul

Parkinson's disease (PD) is a common neurodegenerative disorder with a lifetime incidence of approximately 2 percent; the clinical manifestations of this neurodegenerative disorder include resting tremor, muscular rigidity, bradykinesia, and postural instability. A relatively specific pathological feature accompanying the neuronal degeneration is an intracytoplasmic inclusion body, known as the **Lewy body**. A mutation was identified in the  $\alpha$ -synuclein gene, which codes for a presynaptic protein thought to be involved in neuronal plasticity, this mutation may cause a conformational change that renders  $\alpha$ -synuclein more prone to self aggregation and deposition in Lewy bodies, which finally leads to oxidative stress and misfolding of  $\alpha$ -synuclein.

The synuclein exists in 3 isoform  $\alpha$ -syn (chr4 4q21), a 140aa protein, implicated in pathogenesis of PD and related neurodegenerative disorders, it is mainly expressed in brain specifically in neuronal cell bodies and synapses. The 134 aa  $\beta$ -syn (chr5 5q35) is homologous to 14 kDa bovine phosphoneuroprotein 14; SCNB has been shown to be highly expressed in the substantia nigra of the brain. Recently a new isoform termed  $\gamma$ -synuclein (SNCG) or breast cancer gene 1 (BCG1) has been cloned (human 127 aa (chr10 10q23), rat/mouse 123 aa). Higher levels of expression of SNCG have been reported in advanced breast carcinomas. All three synuclein show ~40% identity.

**Source of Antigen and Antibodies**

<b>Antigen</b>	15-aa peptide of Human beta SYN1; <b>Designated (SYN13-P or control peptide). conjugated to KLH, epitope location ~ C-terminus</b>
<b>Ab Host/type</b>	Rabbit, polyclonal Unpurified antiserum (cat #SYN13-S) Aff pure IgG (cat #SYN13-A) purified over antigen-agarose column
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control IgG</b>	<b># 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control</b>

Human beta synuclein recombinant protein (134-aa protein, 14.28 Kda) was expressed and in E. coli and purified (>95% by SDS-PAGE). For Western blot +ve control (Cat # SYN13-C) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of SYN13-C for good visibility with antibody Cat # SYN13-S. Store at -20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the RELMG31-C solution prior to heating and loading on gels. This preparation is not

biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly

**Form & Storage of Antibodies/Peptide Control**

**Antiserum (unpurified)**

100ul solution lyophilized powder  
Supplied 0.05% azide, **Reconstitute** powder in 100 ul PBS

**Affinity pure IgG**

100 ug/100ul solution lyophilized powder  
Supplied in **Buffer:** PBS+0.1% BSA  
**Reconstitute powder** in PBS at 1mg/ml

**Control/blocking peptide**

100 ug/100 ul solution lyophilized powder  
Supplied in **Buffer:** PBS pH 7.5,  
**Reconstitute powder in PBS at 1 mg/ml.**

**Storage**

**Short-term:** unopened, undiluted liquid vials at -20oC and powder at 4oC or -20oC..

**Long-term:** at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at -20oC or below.

**Recommended Usage**

**Western Blotting** (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique).

**ELISA** (1:10K-1:100K; using 50-100 ng of control peptide/well).

**Immunoprecipitations:** We recommend 5-10 ul neat serum or 1-10 ug affinity pure antibody per 100 ug of tissue..

**Histochemistry & Immunofluorescence:** We recommend the use of affinity purified antibody at 2-20 ug/ml.

**Specificity & Cross-reactivity**

The SYN13 peptide sequence is 100% identical in rat beta-synuclein (137 aa) bovine PNP14 (134 aa) and 86% in chicken. It has no appreciable homology with synuclein-alpha or other proteins. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at the web site).

**General References:** Jakes et al (1994) FEBS Lett. 345, 27-32; Ueda K et al (1993) PNAS 0, 11282-11286; Maroteaux L. et al (1988) J Neurosci. 8, 2804-2815; Maroteaux L et al (1991) Mol. Brain Res. 11, 335-343; Tobe T et al (1992) J Neurochem. 59, 1624-  
\*This product is for *in vitro* research use only.

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