

Product Specification Sheet

**Gamma Synuclein ( $\gamma$ -synuclein, BCSG1) Antibodies**

<b>Cat. # SYN14-S</b>	Rabbit Anti-Rat $\gamma$ -synuclein antiserum # 1	<b>SIZE:</b> 100 ul
<b>Cat. # SYN14-A</b>	Rabbit Anti- Rat $\gamma$ -synuclein affinity pure # 1	<b>SIZE:</b> 100 ug
<b>Cat. # SYN14-P</b>	Rat $\gamma$ -synuclein control/blocking peptide # 1	<b>SIZE:</b> 100 ug

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.

Parkin gene, mutations in this gene are reported in early autosomal-recessive form of PD, however these mutations do not degenerate **Lewy bodies**. The Parkin gene product (**Parkin**) is involved in protein degradation as a ubiquitin protein ligase, the known substrates of Parkin include Pael-R (Parkin-associated endothelin receptor-like receptor), Ubiquitination of Pael-R by Parkin leads to its degradation in the proteasome, however failure to ubiquitinate it leads to death of neuron.

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 phosphonucleoprotein 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>	18aa peptide of Rat Gamma SYN1; <b>Designated (SYN14-P or control peptide)</b> . conjugated to KLH; Epitope location ~ C-terminal
<b>Ab Host/type</b>	Rabbit, polyclonal Aff pure IgG ( <b>cat #SYN14-A</b> ) purified over the antigen column
<b>Ab Format</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available
<b>-ve control</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

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

**Antiserum (unpurified)**

100ul solution lyophilized powder  
Supplied in Buffer: 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 20°C and powder at 4°C or -20°C..

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

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

**Shipping:** 4°C for solutions and room temp for powder

**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 rat SYN14-P peptide sequence is 100% conserved in mouse  $\gamma$ -synuclein. No significant sequence homology is seen with either human  $\gamma$ -synuclein or synuclein-alpha or beta) or other proteins. We recommend the use of another antibody for human  $\gamma$ -synuclein (SYN15-S) that is made using the human sequence. Antibody cross reactivity in various species is not studied. 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

**General References:**

Ji H et al (1997) cancer Res. 57, 759-764; ibid (1998) Human Genet. 103, 106-112; Jia T et al (199) Cancer Res. 59, 742-747; Akopian AN et al (1995) J Biol. Chem. 270, 21264-21270; Alimova-Kost MV et al (1999) Genomics 56, 224-227; Ninkina NN et al (1998) Hum. Mol. Genet. 7, 1417-1424.

\*This product is for *in vitro* research use only.

SYN14-S-A-P 709120J

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