

# Psf1 (N-20): sc-85853

## BACKGROUND

The GINS complex is a heterotetramer consisting of Psf1, Psf2, Psf3 and SLD5. This complex plays an important role in the initiation of DNA replication and progression of DNA replication forks. Psf1 (partner of sld five-1), also known as DNA replication complex GINS protein PSF1 and GINS complex subunit 1, is a 196 protein that localizes to the nucleus and exists as a mammalian homolog of yeast Psf1. Functioning as a component of the heterotrimeric GINS complex, Psf1 binds to single-stranded DNA and plays a crucial role in complex function. In aggressive melanomas, the gene encoding Psf1 is upregulated, suggesting a possible role as a tumor biomarker in this particular form of cancer. Since Psf1 deletion causes embryonic lethality in mice around the implantation stage, it is likely that Psf1 is required for early embryogenesis. Psf1 is highly expressed in reproductive organs and lymph tissue.

## REFERENCES

1. Takayama, Y., Kamimura, Y., Okawa, M., Muramatsu, S., Sugino, A. and Araki, H. 2003. GINS, a novel multiprotein complex required for chromosomal DNA replication in budding yeast. *Genes Dev.* 17: 1153-1165.
2. Ueno, M., Itoh, M., Kong, L., Sugihara, K., Asano, M. and Takakura, N. 2005. PSF1 is essential for early embryogenesis in mice. *Mol. Cell. Biol.* 25: 10528-10532.
3. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610608. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Boskovic, J., Coloma, J., Aparicio, T., Zhou, M., Robinson, C.V., Mendez, J. and Montoya, G. 2007. Molecular architecture of the human GINS complex. *EMBO Rep.* 8: 678-684.
5. Choi, J.M., Lim, H.S., Kim, J.J., Song, O.K. and Cho, Y. 2007. Crystal structure of the human GINS complex. *Genes Dev.* 21: 1316-1321.
6. Kamada, K., Kubota, Y., Arata, T., Shindo, Y. and Hanaoka, F. 2007. Structure of the human GINS complex and its assembly and functional interface in replication initiation. *Nat. Struct. Mol. Biol.* 14: 388-396.
7. Ryu, B., Kim, D.S., Deluca, A.M. and Alani, R.M. 2007. Comprehensive expression profiling of tumor cell lines identifies molecular signatures of melanoma progression. *PLoS One* 2: 594.
8. Chang, Y.P., Wang, G., Bermudez, V., Hurwitz, J. and Chen, X.S. 2007. Crystal structure of the GINS complex and functional insights into its role in DNA replication. *Proc. Natl. Acad. Sci. USA* 104: 12685-12690.
9. Barkley, L.R., Song, I.Y., Zou, Y. and Vaziri, C. 2009. Reduced expression of GINS complex members induces hallmarks of pre-malignancy in primary untransformed human cells. *Cell Cycle* 8: 1577-1588.

## CHROMOSOMAL LOCATION

Genetic locus: GINS1 (human) mapping to 20p11.21; Gins1 (mouse) mapping to 2 G3.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## SOURCE

Psf1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Psf1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-85853 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Psf1 (N-20) is recommended for detection of Psf1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with Psf2.

Psf1 (N-20) is also recommended for detection of Psf1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Psf1 siRNA (h): sc-76262, Psf1 siRNA (m): sc-152540, Psf1 shRNA Plasmid (h): sc-76262-SH, Psf1 shRNA Plasmid (m): sc-152540-SH, Psf1 shRNA (h) Lentiviral Particles: sc-76262-V and Psf1 shRNA (m) Lentiviral Particles: sc-152540-V.

Molecular Weight of Psf1: 23 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.