

Nuclear Envelope and Nuclear Pore Marker (39C7): sc-57946

BACKGROUND

Yeast cells all have a double membrane surrounding the nucleus that functions to protect their genetic material. The nuclear envelope may also play a role in the disposition of chromatin inside the nucleus. There are multiple nuclear pores on the nuclear envelope that facilitate and regulate the exchange of materials between the nucleus and the cytoplasm. There are many unique proteins associated with the nuclear envelope and/or nuclear pores including (POM152) type II membrane glycoprotein that coenriches with isolated yeast nuclear pore complexes, NSP1, a nuclear envelope protein that is essential for cell growth, or p110 and p95 which localize to the yeast nuclear envelope and may be components of the nuclear pore complex. These types of proteins act as important markers in applications used to study yeast function and behavior.

REFERENCES

1. Aris, J.P. and Blobel, G. 1989. Yeast nuclear envelope proteins cross react with an antibody against mammalian pore complex proteins. *J. Cell Biol.* 108: 2059-2067.
2. Kalinich, J.F. and Douglas, M.G. 1989. *In vitro* translocation through the yeast nuclear envelope. Signal-dependent transport requires ATP and calcium. *J. Biol. Chem.* 264: 17979-17989.
3. Nehrbass, U., Kern, H., Mutvei, A., Horstmann, H., Marshallsay, B. and Hurt, E.C. 1990. NSP1: a yeast nuclear envelope protein localized at the nuclear pores exerts its essential function by its carboxy-terminal domain. *Cell* 61: 979-989.
4. Wozniak, R.W., Blobel, G. and Rout, M.P. 1994. POM152 is an integral protein of the pore membrane domain of the yeast nuclear envelope. *J. Cell Biol.* 125: 31-42.
5. Iouk, T., Kerscher, O., Scott, R.J., Basrai, M.A. and Wozniak, R.W. 2002. The yeast nuclear pore complex functionally interacts with components of the spindle assembly checkpoint. *J. Cell Biol.* 159: 807-819.
7. Ryan, K.J., McCaffery, J.M. and Wentz, S.R. 2003. The Ran GTPase cycle is required for yeast nuclear pore complex assembly. *J. Cell Biol.* 160: 1041-1053.
6. Kiseleva, E., Allen, T.D., Rutherford, S., Bucci, M., Wentz, S.R. and Goldberg, M.W. 2004. Yeast nuclear pore complexes have a cytoplasmic ring and internal filaments. *J. Struct. Biol.* 145: 272-288.
8. Robinson, M.A., Park, S., Sun, Z.Y., Silver, P.A., Wagner, G. and Hogle, J.M. 2005. Multiple conformations in the ligand-binding site of the yeast nuclear pore-targeting domain of Nup116p. *J. Biol. Chem.* 280: 35723-35732.
9. Campbell, J.L., Lorenz, A., Witkin, K.L., Hays, T., Loidl, J. and Cohen-Fix, O. 2006. Yeast nuclear envelope subdomains with distinct abilities to resist membrane expansion. *Mol. Biol. Cell* 17: 1768-1778.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

SOURCE

Nuclear Envelope and Nuclear Pore Marker (39C7) is a mouse monoclonal antibody raised against yeast nuclear preparations.

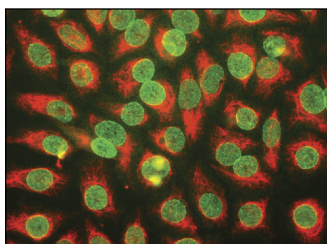
PRODUCT

Each vial contains 250 µl culture supernatant containing IgG₁ in PBS with < 0.1% sodium azide.

APPLICATIONS

Nuclear Envelope and Nuclear Pore Marker (39C7) is recommended for detection of Nuclear Envelope and Nuclear Pore Marker of mouse, rat, human and yeast origin by immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200).

DATA



Nuclear Envelope and Nuclear Pore Marker (39C7): sc-57946. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (green).

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.