SANTA CRUZ BIOTECHNOLOGY, INC.

p-Separase (Ser 1073): sc-130217

BACKGROUND

Separase is a cysteine protease that triggers anaphase in all eukaryotes by participating in separation of sister chromatids during mitosis. Once activated, Separase hydrolyzes the SCC1 subunit of cohesin, the chromosomal protein complex responsible for sister chromatid cohesion. Separase and cohesin are highly conserved from yeasts to humans. When the cell is not dividing, Separase is prevented from cleaving cohesin through its association with another protein, securin. When anaphase is signaled, the securin is ubiquitinated and hydrolyzed by APC/cyclosome, releasing the active Separase. Separase is transiently activated between the two meioses and may also be involved in homolog separation. Human Separase is subject to phosphorylation at 8 sites, one of which is Ser 1073.

REFERENCES

1. Agarwal, R., et al. 2002. Mitotic regulation: the fine tuning of Separase activity. Cell Cycle 1: 255-257.
2. Zou, H., et al. 2002. Anaphase specific auto-cleavage of Separase. FEBS Lett. 528: 246-250.
3. Waizenegger, I., et al. 2002. Regulation of human Separase by securin binding and autocleavage. Curr. Biol. 12: 1368-1378.
4. Sullivan, M., et al. 2003. A non-proteolytic function of Separase links the onset of anaphase to mitotic exit. Nat. Cell Biol. 5: 249-254.
5. Chestukhin, A., et al. 2003. Processing, localization, and requirement of human Separase for normal anaphase progression. Proc. Natl. Acad. Sci. USA 100: 4574-4579.
6. Chestukhin, A., et al. 2003. Western blot screening for monoclonal antibodies against human Separase. J. Immunol. Methods 274: 105-113.
7. Giménez-Abián, J.F., et al. 2005. Separase is required at multiple pre-anaphase cell cycle stages in human cells. Cell Cycle 4: 1576-1584.
8. Nakajima, M., et al. 2007. The complete removal of cohesin from chromosome arms depends on Separase. J. Cell Sci. 120: 4188-4196.
9. Boos, D., et al. 2008. Phosphorylation-dependent binding of cyclin B1 to a Cdc6-like domain of human Separase. J. Biol. Chem. 283: 816-823.

CHROMOSOMAL LOCATION

Genetic locus: ESPL1 (human) mapping to 12q13.13.

SOURCE

p-Separase (Ser 1073) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 1073 of Separase of human origin.

STORAGE

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

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Separase (Ser 1073) is recommended for detection of Ser 1073 phosphorylated Separase of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

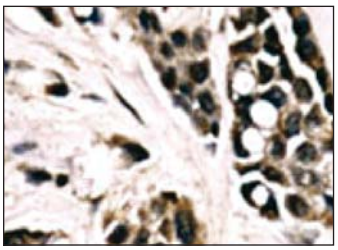
Suitable for use as control antibody for Separase siRNA (h): sc-72040, Separase shRNA Plasmid (h): sc-72040-SH and Separase shRNA (h) Lentiviral Particles: sc-72040-V.

Molecular Weight of p-Separase: 230 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-Separase (Ser 1073): sc-130217. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cancer tissue showing cytoplasmic staining.

PROTOCOLS

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