SANTA CRUZ BIOTECHNOLOGY, INC.

SIR2 (d-300): sc-98262

BACKGROUND

Control of chromosome structure plays a role in the regulation of gene expression, recombination, DNA repair and chromosome stability. *Drosophila* SIR2, a NAD^+-dependent histone deacetylase, influences euchromatic repression and heterochromatic silencing at telomeres, rDNA and mating-type loci mediated by the Polycomb group of proteins and by physically associating with a complex containing the E(z) histone methyltransferase. Deacetylation by SIR2 causes rearrangement of histones into a transcriptionally repressive chromatin structure. SIR2 has also been shown to be directly involved in the calorie-restriction life-span-extending pathway in *Drosophila*.

REFERENCES

1. Rosenberg, M.I. and Parkhurst, S.M. 2002. *Drosophila* SIR2 is required for heterochromatic silencing and by euchromatic Hairy/E(Spl) bHLH repressors in segmentation and sex determination. Cell 109: 447-458.
2. Parsons, X.H., Garcia, S.N., Pillus, L. and Kadonaga, J.T. 2003. Histone deacetylation by SIR2 generates a transcriptionally repressed nucleoprotein complex. Proc. Natl. Acad. Sci. USA 100: 1609-1614.
3. Furuyama, T., Banerjee, R., Breen, T.R. and Harte, P.J. 2004. SIR2 is required for polycomb silencing and is associated with an E(z) histone methyltransferase complex. Curr. Biol 14: 1812-1821.
4. Rogina, B. and Helfand, S.L. 2004. SIR2 mediates longevity in the fly through a pathway related to calorie restriction. Proc. Natl. Acad. Sci. USA 101: 15998-16003.
5. Chopra, V.S. and Mishra, R.K. 2005. To SIR with Polycomb: linking silencing mechanisms. Bioessays 27:119-121.
6. Guarente, L. and Picard, F. 2005. Calorie restriction—the SIR2 connection. Cell 120: 473-482.
7. LocusLink Report (LocusID: 34708). http://www.ncbi.nlm.nih.gov/LocusLink/

SOURCE

SIR2 (d-300) is a rabbit polyclonal antibody raised against amino acids 524-823 mapping at the C-terminus of SIR2 of *Drosophila melanogaster* origin.

PRODUCT

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

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 or our catalog for detailed protocols and support products.

APPLICATIONS

SIR2 (d-300) is recommended for detection of SIR2 of *Drosophila melanogaster* 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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 A Blocking Reagent: sc-2333 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.

RESEARCH USE

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