SANTA CRUZ BIOTECHNOLOGY, INC.

CRY1 (A-20): sc-5953

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Circadian clocks are biological timepieces that regulate hormonal rhythms, sleep cycles and feeding behaviors. These rhythms are generated in the super-chiasmatic nucleus (SCN), a cell-autonomous circadian oscillator located within the brain that is synchronized with the environment by light. A number of transcription factors, including Clock and BMAL1, are molecular components of the SCN that induce the expression of proteins involved in light/dark cycle entrainment, which include Per1 and Per2. Tim, for timeless, generates a negative feedback loop that regulates the activity of Clock by suppressing the expression of Clock target genes. Tim forms heterodimers with Per1 and Per2 that bind Clock and block the activation of Clock-BMAL1 dimers to repress Per gene expression. Additionally, the CRY proteins, which are cryptochrome photoreceptors for the circadian clock, function as light-independent inhibitors of the circadian clock. CRY1 and CRY2 negatively regulate SCN components by associating with the activators Clock-BMAL1 and also with the various feedback inhibitors Per1, Per2 and Tim.

CHROMOSOMAL LOCATION

Genetic locus: CRY1 (human) mapping to 12q23.3; Cry1 (mouse) mapping to 10 C.

SOURCE

CRY1 (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CRY1 of mouse 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-5953 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CRY1 (A-20) is recommended for detection of CRY1 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CRY1 siRNA (h): sc-43706, CRY1 siRNA (m): sc-44835, CRY1 siRNA (r): sc-108035, CRY1 shRNA Plasmid (h): sc-43706-SH, CRY1 shRNA Plasmid (m): sc-44835-SH, CRY1 shRNA Plasmid (r): sc-108035-SH, CRY1 shRNA (h) Lentiviral Particles: sc-43706-V, CRY1 shRNA (m) Lentiviral Particles: sc-44835-V and CRY1 shRNA (r) Lentiviral Particles: sc-108035-V.

Molecular Weight of CRY1: 75 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, CRY1 (h): 293T Lysate: sc-114880 or HeLa whole cell lysate: sc-2200.

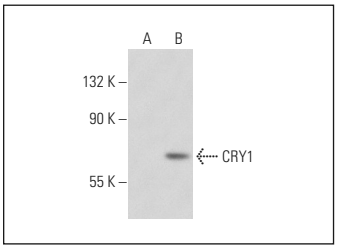
RESEARCH USE

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

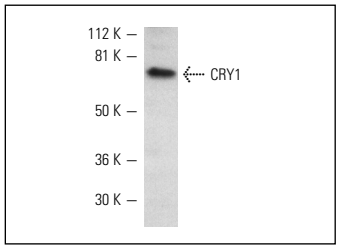
STORAGE

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

DATA



CRY1 (A-20): sc-5953. Western blot analysis of CRY1 expression in non-transfected: sc-117752 (**A**) and human CRY1 transfected: sc-114880 (**B**) 293T whole cell lysates.



CRY1 (A-20): sc-5953. Western blot analysis of CRY1 expression in Caki-1 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Naruse, Y., et al. 2004. Circadian and light-induced transcription of clock gene Per1 depends on histone acetylation and deacetylation. Mol. Cell. Biol. 24: 6278-6287.
2. Mouritsen, H., et al. 2004. Cryptochromes and neuronal-activity markers colocalize in the retina of migratory birds during magnetic orientation. Proc. Natl. Acad. Sci. USA 39: 14294-14299.
3. Liedvogel, M., et al. 2007. Chemical magnetoreception: bird cryptochrome 1a is excited by blue light and forms long-lived radical-pairs. PLoS ONE 2: e1106.
4. Amano, T., et al. 2009. Expression and functional analyses of circadian genes in mouse oocytes and preimplantation embryos: CRY1 is involved in the meiotic process independently of circadian clock regulation. Biol. Reprod. 80: 473-483.
5. Bose, S., et al. 2010. Episodes of prolactin gene expression in GH3 cells are dependent on selective promoter binding of multiple circadian elements. Endocrinology 151: 2287-2296.
6. Lacruz, R.S., et al. 2012. The circadian clock modulates enamel development. J. Biol. Rhythms. 27: 237-245.
7. Gupta, S., et al. 2013. Daily variations in plasma melatonin and melatonin receptor (MT1), PER1 and CRY1 expression in suprachiasmatic nuclei of tropical squirrel, *Funambulus pennanti*. J. Comp. Physiol. A Neuroethol. Sens. Neural Behav. Physiol. 199: 763-773.