

Clock (S-19): sc-6927

BACKGROUND

Biological timepieces called circadian clocks are responsible for the regulation of hormonal rhythms, sleep cycles and other behaviors. The suprachiasmatic nucleus (SCN), which is located in the brain, was the first mammalian circadian clock to be discovered. Clock, a member of the basic-helix-loop-helix-PAS (bHLH-PAS) family of transcription factors, has also been identified as having circadian function. Mutations within the Clock gene have been shown to increase the length of the endogenous period and to cause a loss of rhythmicity of circadian oscillations. Clock contains a DNA-binding domain, a protein dimerization domain and a glutamine-rich C-terminal region, which indicates transactivation capabilities. It has been speculated that Clock may regulate circadian rhythmicity in combination with other proteins such as Per. Per is also a PAS-domain containing protein that exhibits circadian function. Highest expression of Clock is seen in the hypothalamus and the eye.

CHROMOSOMAL LOCATION

Genetic locus: CLOCK (human) mapping to 4q12; Clock (mouse) mapping to 5 C3.3.

SOURCE

Clock (S-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Clock 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-6927 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-6927 X, 200 µg/0.1 ml.

APPLICATIONS

Clock (S-19) is recommended for detection of Clock of mouse, rat, human, zebrafish and *Xenopus laevis* 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).

Clock (S-19) is also recommended for detection of Clock in additional species, including bovine and porcine.

Suitable for use as control antibody for Clock siRNA (h): sc-35074, Clock siRNA (m): sc-35075, Clock shRNA Plasmid (h): sc-35074-SH, Clock shRNA Plasmid (m): sc-35075-SH, Clock shRNA (h) Lentiviral Particles: sc-35074-V and Clock shRNA (m) Lentiviral Particles: sc-35075-V.

Clock (S-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

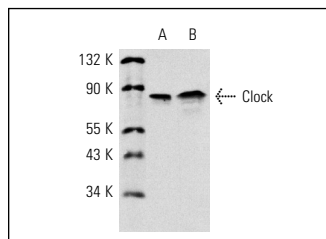
Molecular Weight (predicted) of Clock: 95 kDa.

Molecular Weight (observed) of Clock: 90-110 kDa.

STORAGE

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

DATA



Clock (S-19): sc-6927. Western blot analysis of Clock expression in rat hypothalamus (A) and rat brain (B) tissue extracts.

SELECT PRODUCT CITATIONS

1. Leclerc, G.M., et al. 2005. Pulses of prolactin promoter activity depend on a noncanonical E-box that can bind the circadian proteins CLOCK and BMAL1. *Endocrinology* 146: 2782-2790.
2. Oishi, K., et al. 2005. Clock is involved in the circadian transactivation of peroxisome-proliferator-activated receptor α (PPAR α) in mice. *Biochem. J.* 386: 575-581.
3. Leclerc, G.M., et al. 2005. Pulses of prolactin promoter activity depend on a noncanonical E-box that can bind the circadian proteins CLOCK and BMAL1. *Endocrinology* 146: 2782-2790.
4. Miyamoto, N., et al. 2008. Tip60 is regulated by circadian transcription factor clock and is involved in cisplatin resistance. *J. Biol. Chem.* 283: 18218-18226.
5. Nakashima, A., et al. 2008. DEC1 modulates the circadian phase of clock gene expression. *Mol. Cell. Biol.* 28: 4080-4092.
6. Nakahata, Y., et al. 2008. A direct repeat of E-box-like elements is required for cell-autonomous circadian rhythm of Clock genes. *BMC Mol. Biol.* 9: 1.
7. Lee, Y., et al. 2010. Coactivation of the CLOCK-BMAL1 complex by CBP mediates resetting of the circadian clock. *J. Cell Sci.* 123: 3547-3557.
8. Takeda, Y., et al. 2012. ROR γ directly regulates the circadian expression of clock genes and downstream targets *in vivo*. *Nucleic Acids Res.* 40: 8519-8535.

RESEARCH USE

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

MONOS
Satisfaction
Guaranteed

Try **Clock (C-8): sc-271603**, our highly recommended monoclonal alternative to Clock (S-19).