SANTA CRUZ BIOTECHNOLOGY, INC.

Clock (M-20): sc-6928

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Biological timepieces called circadian clocks are responsible for the regulation of hormonal rhythms, sleep cycles and other behaviors. The superchiasmatic 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.

REFERENCES

1. Morell, V. 1995. A 24-hour circadian clock is found in the mammalian retina. Science 272: 349.
2. Reppert, S.M., et al. 1997. Forward genetic approach strikes gold: cloning of a mammalian clock gene. Cell 89: 487-490.
3. King, D.P., et al. 1997. Positional cloning of the mouse circadian clock gene. Cell 89: 641-653.
4. Antoch, M.P., et al. 1997. Functional identification of the mouse circadian Clock gene by transgenic BAC rescue. Cell 89: 655-667.
5. King, D.P., et al. 1997. The mouse Clock mutation behaves as an antimorph and maps within the W19H deletion, distal of Kit. Genetics 146: 1049-1060.
6. Tei, H., et al. 1997. Circadian oscillation of a mammalian homologue of the *Drosophila* period gene. Nature 389: 512-516.

CHROMOSOMAL LOCATION

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

SOURCE

Clock (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-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-6928 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-6928 X, 200 µg/0.1 ml.

STORAGE

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

APPLICATIONS

Clock (M-20) is recommended for detection of Clock of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 Clock siRNA (h): sc-35074, Clock siRNA (m): sc-35075, Clock siRNA (r): sc-270115, Clock shRNA Plasmid (h): sc-35074-SH, Clock shRNA Plasmid (m): sc-35075-SH, Clock shRNA Plasmid (r): sc-270115-SH, Clock shRNA (h) Lentiviral Particles: sc-35074-V, Clock shRNA (m) Lentiviral Particles: sc-35075-V and Clock shRNA (r) Lentiviral Particles: sc-270115-V.

Clock (M-20) 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.

Positive Controls: rat brain extract: sc-2392.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Terme, J.M., et al. 2009. Inhibition of the hTERT promoter by the proto-oncogenic protein TAL1. Leukemia 23: 2081-2089.
2. O'Keeffe, S.M., et al. 2012. The noradrenaline reuptake inhibitor atomoxetine phase-shifts the circadian clock in mice. Neuroscience 201: 219-230.

RESEARCH USE

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

PROTOCOLS

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