

# Nocturnin (P-16): sc-65154

## BACKGROUND

Nocturnin, also known as CCRN4L or NOC, is a 431 amino acid circadian deadenylase protein that is expressed in a broad range of tissues with the greatest abundance in the liver, kidney and testis. Nocturnin plays a role in circadian regulation as well as diet-induced obesity. The mRNA abundance of Nocturnin exhibits circadian rhythmicity, peaking after dusk in photoreceptors, spleen, heart, kidney and liver. Nocturnin is thought to be responsible for turning off genes that are involved in circadian regulation. In *Xenopus* retinal photoreceptor cells, the rhythmic regulation of Nocturnin is thought to be controlled by phosphorylated CREB. Mice lacking Nocturnin remain lean on high fat diets with a reduction in visceral fat, which suggests that this protein may also be responsible for lipid metabolism and fat storage.

## REFERENCES

- Green, C.B., et al. 1996. Identification of a novel vertebrate circadian clock-regulated gene encoding the protein Nocturnin. *Proc. Natl. Acad. Sci. USA* 93: 14884-14888.
- Liu, X., et al. 2001. A novel promoter element, photoreceptor conserved element II, directs photoreceptor-specific expression of nocturnin in *Xenopus laevis*. *J. Biol. Chem.* 276: 15146-15154.
- Liu, X., et al. 2002. Circadian regulation of nocturnin transcription by phosphorylated CREB in *Xenopus* retinal photoreceptor cells. *Mol. Cell. Biol.* 22: 7501-7511.
- Baggs, J.E., et al. 2003. Nocturnin, a deadenylase in *Xenopus laevis* retina: a mechanism for posttranscriptional control of circadian-related mRNA. *Curr. Biol.* 13: 189-198.
- Oishi, K., et al. 2003. Genome-wide expression analysis of mouse liver reveals clock-regulated circadian output genes. *J. Biol. Chem.* 278: 41519-41527.
- Baggs, J.E., et al. 2006. Functional analysis of nocturnin: a circadian clock-regulated gene identified by differential display. *Methods Mol. Biol.* 317: 243-254.
- Garbarino-Pico, E., et al. 2007. Immediate early response of the circadian polyA ribonuclease nocturnin to two extracellular stimuli. *RNA* 13: 745-755.
- Ramsey, K.M., et al. 2007. Lean gene and the clock machine. *Proc. Natl. Acad. Sci. USA* 104: 9553-9554.
- Green, C.B., et al. 2007. Loss of Nocturnin, a circadian deadenylase, confers resistance to hepatic steatosis and diet-induced obesity. *Proc. Natl. Acad. Sci. USA* 104: 9888-9893.

## CHROMOSOMAL LOCATION

Genetic locus: CCRN4L (human) mapping to 4q31.1; Ccrn4l (mouse) mapping to 3 C.

## SOURCE

Nocturnin (P-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Nocturnin of human 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-65154 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Nocturnin (P-16) is recommended for detection of Nocturnin 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).

Nocturnin (P-16) is also recommended for detection of Nocturnin in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Nocturnin siRNA (h): sc-62697, Nocturnin siRNA (m): sc-62698, Nocturnin shRNA Plasmid (h): sc-62697-SH, Nocturnin shRNA Plasmid (m): sc-62698-SH, Nocturnin shRNA (h) Lentiviral Particles: sc-62697-V and Nocturnin shRNA (m) Lentiviral Particles: sc-62698-V.

Molecular Weight of Nocturnin: 48 kDa.

Positive Controls: Y79 cell lysate: sc-2240.

## 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.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.