SANTA CRUZ BIOTECHNOLOGY, INC.

Nocturnin (F-4): sc-376584

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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 responisble 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

1. 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.
2. 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.
3. Liu, X., et al. 2002. Circadian regulation of Nocturnin transcription by phosphorylated CREB in *Xenopus* retinal photoreceptor cells. Mol. Cell. Biol. 22: 7501-7511.
4. 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.
5. Oishi, K., et al. 2003. Genome-wide expression analysis of mouse liver reveals clock-regulated circadian output genes. J. Biol. Chem. 278: 41519-41527.
6. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Nocturnin (F-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 185-219 within an internal region of Nocturnin of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376584 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Nocturnin (F-4) is recommended for detection of Nocturnin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Nocturnin (F-4) is also recommended for detection of Nocturnin in additional species, including equine, canine and bovine.

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.

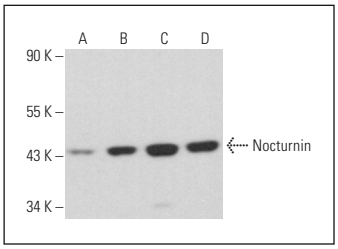
Molecular Weight of Nocturnin: 48 kDa.

Positive Controls: Y79 cell lysate: sc-2240, Jurkat whole cell lysate: sc-2204 or ARPE-19 whole cell lysate: sc-364357.

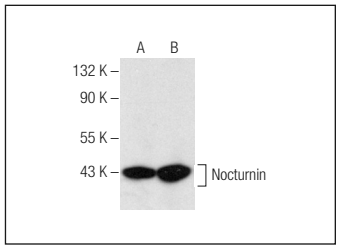
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Nocturnin (F-4): sc-376584. Western blot analysis of Nocturnin expression in RPE-J (**A**), Jurkat (**B**), Neuro-2A (**C**) and L6 (**D**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Nocturnin (F-4): sc-376584. Western blot analysis of Nocturnin expression in Y79 (**A**) and ARPE-19 (**B**) whole cell lysates.

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.