

CRY1 (H-12): sc-393466

BACKGROUND

Circadian Clocks are biological timepieces that regulate hormonal rhythms, sleep cycles and feeding behaviors. These rhythms are generated in the suprachiasmatic 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.

REFERENCES

- Morell, V. 1996. A 24-hour circadian Clock is found in the mammalian retina. *Science* 272: 349.
- Albrecht, U., et al. 1997. A differential response of two putative mammalian circadian regulators, mper1 and mper2, to light. *Cell* 91: 1055-1064.
- Sangoram, A.M., et al. 1998. Mammalian circadian autoregulatory loop: a timeless ortholog and mPer1 interact and negatively regulate Clock-BMAL1-induced transcription. *Neuron* 21: 1101-1113.

CHROMOSOMAL LOCATION

Genetic locus: CRY1 (human) mapping to 12q23.3; Cry1 (mouse) mapping to 10 C1.

SOURCE

CRY1 (H-12) is a mouse monoclonal antibody raised against amino acids 503-586 mapping at the C-terminus of CRY1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CRY1 (H-12) is available conjugated to agarose (sc-393466 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393466 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393466 PE), fluorescein (sc-393466 FITC), Alexa Fluor® 488 (sc-393466 AF488), Alexa Fluor® 546 (sc-393466 AF546), Alexa Fluor® 594 (sc-393466 AF594) or Alexa Fluor® 647 (sc-393466 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393466 AF680) or Alexa Fluor® 790 (sc-393466 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

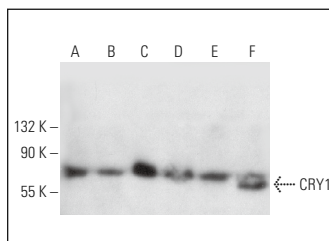
CRY1 (H-12) is recommended for detection of CRY1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

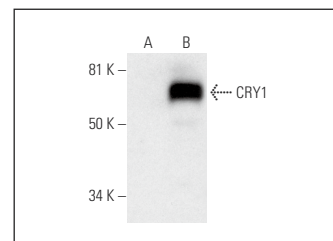
Molecular Weight of CRY1: 66 kDa.

Positive Controls: Hs 181 Tes whole cell lysate: sc-364779, CCRF-CEM cell lysate: sc-2225 or CRY1 (h): 293T Lysate: sc-114880.

DATA



CRY1 (H-12): sc-393466. Western blot analysis of CRY1 expression in CCRF-CEM (A), Hs 181 Tes (B), NIH/3T3 (C), F9 (D), RBL-1 (E) and C6 (F) whole cell lysates.



CRY1 (H-12): sc-393466. Western blot analysis of CRY1 expression in non-transfected: sc-117752 (A) and human CRY1 transfected: sc-114880 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Huang, Q., et al. 2020. Cryptochrome 1 alleviates the antiproliferative effect of isoproterenol on human gastric cancer cells. *Dose Response* 18: 1559325820939022.
- Angelousi, A., et al. 2020. Expression of Clock-related genes in benign and malignant adrenal tumors. *Endocrine* 68: 650-659.
- Murgo, E., et al. 2023. The circadian Clock circuitry modulates leukemia initiating cell activity in T-cell acute lymphoblastic leukemia. *J. Exp. Clin. Cancer Res.* 42: 218.
- Thoeni, V., et al. 2024. Therapeutic nuclear magnetic resonance and intermittent hypoxia trigger time dependent on/off effects in circadian clocks and confirm a central role of superoxide in cellular magnetic field effects. *Redox Biol.* 72: 103152.

RESEARCH USE

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