

Anti-Cryptochrome I/CRY1 antibody [4H4-1C4] ab54649

★★★★★ [3 Abreviews](#) [6 References](#) [画像数 4](#)

製品の概要

製品名	Anti-Cryptochrome I/CRY1 antibody [4H4-1C4]
製品の詳細	Mouse monoclonal [4H4-1C4] to Cryptochrome I/CRY1
由来種	Mouse
アプリケーション	適用あり: WB, ICC/IF, IHC-P, Flow Cyt
種交差性	交差種: Human
免疫原	Recombinant full length protein corresponding to Human Cryptochrome I/CRY1 aa 1-587.
特記事項	<p>This product was changed from ascites to tissue culture supernatant on 4th April 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

製品の特性

製品の状態	Liquid
保存方法	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
バッファー	pH: 7.4
精製度	Tissue culture supernatant
ポリ/モノ	モノクローナル
クローン名	4H4-1C4
アイソタイプ	IgG1
軽鎖の種類	kappa

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アプリケーションノートには、推奨の開始希釈率がありますが、適切な希釈率につきましてはご確認ください。

アプリケーション	Abreviews	特記事項
WB	★★★★★ (1)	Use at an assay dependent concentration. Predicted molecular weight: 66 kDa.
ICC/IF	★★★★★ (1)	Use at an assay dependent concentration.
IHC-P		Use at an assay dependent concentration.
Flow Cyt		Use at an assay dependent concentration. ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

ターゲット情報

機能

Transcriptional repressor which forms a core component of the circadian clock. The circadian clock, an internal time-keeping system, regulates various physiological processes through the generation of approximately 24 hour circadian rhythms in gene expression, which are translated into rhythms in metabolism and behavior. It is derived from the Latin roots 'circa' (about) and 'diem' (day) and acts as an important regulator of a wide array of physiological functions including metabolism, sleep, body temperature, blood pressure, endocrine, immune, cardiovascular, and renal function. Consists of two major components: the central clock, residing in the suprachiasmatic nucleus (SCN) of the brain, and the peripheral clocks that are present in nearly every tissue and organ system. Both the central and peripheral clocks can be reset by environmental cues, also known as Zeitgebers (German for 'timegivers'). The predominant Zeitgeber for the central clock is light, which is sensed by retina and signals directly to the SCN. The central clock entrains the peripheral clocks through neuronal and hormonal signals, body temperature and feeding-related cues, aligning all clocks with the external light/dark cycle. Circadian rhythms allow an organism to achieve temporal homeostasis with its environment at the molecular level by regulating gene expression to create a peak of protein expression once every 24 hours to control when a particular physiological process is most active with respect to the solar day. Transcription and translation of core clock components (CLOCK, NPAS2, ARNTL/BMAL1, ARNTL2/BMAL2, PER1, PER2, PER3, CRY1 and CRY2) plays a critical role in rhythm generation, whereas delays imposed by post-translational modifications (PTMs) are important for determining the period (tau) of the rhythms (tau refers to the period of a rhythm and is the length, in time, of one complete cycle). A diurnal rhythm is synchronized with the day/night cycle, while the ultradian and infradian rhythms have a period shorter and longer than 24 hours, respectively. Disruptions in the circadian rhythms contribute to the pathology of cardiovascular diseases, cancer, metabolic syndromes and aging. A transcription/translation feedback loop (TTFL) forms the core of the molecular circadian clock mechanism. Transcription factors, CLOCK or NPAS2 and ARNTL/BMAL1 or ARNTL2/BMAL2, form the positive limb of the feedback loop, act in the form of a heterodimer and activate the transcription of core clock genes and clock-controlled genes (involved in key metabolic processes), harboring E-box elements (5'-CACGTG-3') within their promoters. The core clock genes: PER1/2/3 and CRY1/2 which are transcriptional repressors form the negative limb of the feedback loop and interact with the CLOCK NPAS2-ARNTL/BMAL1

ARNTL2/BMAL2 heterodimer inhibiting its activity and thereby negatively regulating their own expression. This heterodimer also activates nuclear receptors NR1D1/2 and RORA/B/G, which form a second feedback loop and which activate and repress ARNTL/BMAL1 transcription, respectively. CRY1 and CRY2 have redundant functions but also differential and selective contributions at least in defining the pace of the SCN circadian clock and its circadian transcriptional outputs. More potent transcriptional repressor in cerebellum and liver than CRY2, though more effective in lengthening the period of the SCN oscillator. On its side, CRY2 seems to play a critical role in tuning SCN circadian period by opposing the action of CRY1. With CRY2, is dispensable for circadian rhythm generation but necessary for the development of intercellular networks for rhythm synchrony. Capable of translocating circadian clock core proteins such as PER proteins to the nucleus. Interacts with CLOCK-ARNTL/BMAL1 independently of PER proteins and is found at CLOCK-ARNTL/BMAL1-bound sites, suggesting that CRY may act as a molecular gatekeeper to maintain CLOCK-ARNTL/BMAL1 in a poised and repressed state until the proper time for transcriptional activation. Represses the CLOCK-ARNTL/BMAL1 induced transcription of BHLHE40/DEC1. Represses the CLOCK-ARNTL/BMAL1 induced transcription of ATF4, MTA1, KLF10 and NAMPT (By similarity). May repress circadian target genes expression in collaboration with HDAC1 and HDAC2 through histone deacetylation. Mediates the clock-control activation of ATR and modulates ATR-mediated DNA damage checkpoint. In liver, mediates circadian regulation of cAMP signaling and gluconeogenesis by binding to membrane-coupled G proteins and blocking glucagon-mediated increases in intracellular cAMP concentrations and CREB1 phosphorylation. Besides its role in the maintenance of the circadian clock, is also involved in the regulation of other processes. Represses glucocorticoid receptor NR3C1/GR-induced transcriptional activity by binding to glucocorticoid response elements (GREs). Plays a key role in glucose and lipid metabolism modulation, in part, through the transcriptional regulation of genes involved in these pathways, such as LEP or ACSL4.

配列類似性

Belongs to the DNA photolyase class-1 family.

Contains 1 photolyase/cryptochrome alpha/beta domain.

翻訳後修飾

Phosphorylation on Ser-247 by MAPK is important for the inhibition of CLOCK-ARNTL/BMAL1-mediated transcriptional activity. Phosphorylation by CSNK1E requires interaction with PER1 or PER2. Phosphorylation at Ser-71 and Ser-280 by AMPK decreases protein stability.

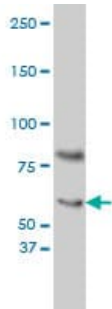
Phosphorylation at Ser-568 exhibits a robust circadian rhythm with a peak at CT8, increases protein stability, prevents SCF(FBXL3)-mediated degradation and is antagonized by interaction with PRKDC.

Ubiquitinated by the SCF(FBXL3) and SCF(FBXL21) complexes, regulating the balance between degradation and stabilization. The SCF(FBXL3) complex is mainly nuclear and mediates ubiquitination and subsequent degradation of CRY1. In contrast, cytoplasmic SCF(FBXL21) complex-mediated ubiquitination leads to stabilize CRY1 and counteract the activity of the SCF(FBXL3) complex. The SCF(FBXL3) and SCF(FBXL21) complexes probably mediate ubiquitination at different Lys residues. Ubiquitination at Lys-11 and Lys-107 are specifically ubiquitinated by the SCF(FBXL21) complex but not by the SCF(FBXL3) complex. Ubiquitination may be inhibited by PER2.

細胞内局在

Cytoplasm. Nucleus. Translocated to the nucleus through interaction with other clock proteins such as PER2 or ARNTL/BMAL1.

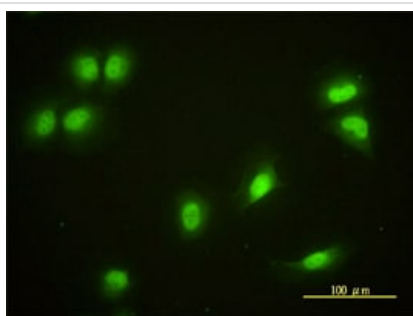
画像



Western blot - Anti-Cryptochrome I/CRY1 antibody [4H4-1C4] (ab54649)

Cryptochrome I/CRY1 antibody (ab54649) at 1ug/lane + HeLa cell lysate at 25ug/lane.

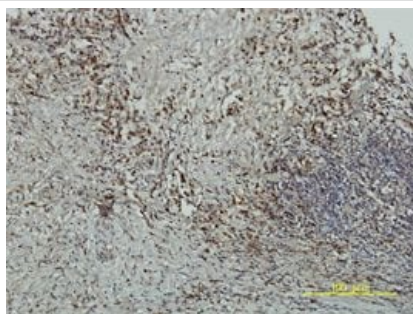
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Immunocytochemistry/ Immunofluorescence - Anti-Cryptochrome I/CRY1 antibody [4H4-1C4] (ab54649)

Cryptochrome I/CRY1 antibody (ab54649) used in immunofluorescence at 10ug/ml on HeLa cells.

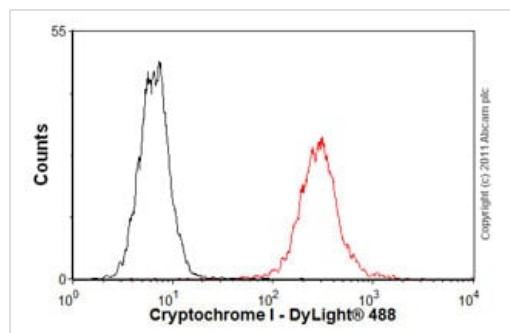
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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cryptochrome I/CRY1 antibody [4H4-1C4] (ab54649)

Cryptochrome I/CRY1 antibody (ab54649) used in immunohistochemistry at 5ug/ml on formalin fixed and paraffin embedded human colon adenocarcinoma tissue.

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Flow Cytometry - Anti-Cryptochrome I/CRY1
antibody [4H4-1C4] (ab54649)

Overlay histogram showing HeLa cells stained with ab54649 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab54649, 1µg/1x10⁶ cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) ([ab96879](#)) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] ([ab91353](#), 2µg/1x10⁶ cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HeLa cells fixed with 4% paraformaldehyde/permeabilized in 0.1% PBS-Tween used under the same conditions.

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