

## cry1 (aC-20): sc-19875

### BACKGROUND

Cryptochromes are mammalian circadian photoreceptors that absorb light and transmit the electromagnetic signal to the molecular clock using cofactors such as pterin and FAD (flavin adenine dinucleotide). CRY1 and CRY2 are evolutionarily conserved cryptochromes that are similar to other members of the photolyase/blue-light photoreceptor family. CRY1 and CRY2 display 73% amino acid identity and function as light-independent inhibitors of CLOCK-BMAL, a heterodimer that regulates circadian rhythm. Both human and mouse CRY1 and CRY2 are differentially expressed in the retina relative to the opsin-based visual photoreceptors. CRY1 localizes to the mitochondria, whereas CRY2 localizes to the nucleus.

### REFERENCES

1. Hsu, D.S., et al. 1996. Putative human blue-light photoreceptors hCRY1 and hCRY2 are flavoproteins. *Biochemistry* 35: 13871-13877.
2. Kobayashi, K., et al. 1998. Characterization of photolyase/ blue-light receptor homologs in mouse and human cells. *Nucleic Acids Res.* 26: 5086-5092.
3. Vitaterna, M.H., et al. 1999. Differential regulation of mammalian period genes and circadian rhythmicity by cryptochromes 1 and 2. *Proc. Natl. Acad. Sci. USA* 96: 12114-12119.
4. Griffin, E.A. Jr., et al. 1999. Light-independent role of CRY1 and CRY2 in the mammalian circadian clock. *Science* 286: 768-771.
5. Sancar, A. 2000. Cryptochrome: the second photoactive pigment in the eye and its role in circadian photoreception. *Annu. Rev. Biochem.* 69: 31-67.
6. Zhu, H., et al. 2001. A putative flavin electron transport pathway is differentially utilized in *Xenopus* CRY1 and CRY2. *Curr. Biol.* 11: 1945-1949.
7. Reick, M., et al. 2001. NPAS2: an analog of clock operative in the mammalian forebrain. *Science* 293: 506-509.

### SOURCE

cry1 (aC-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of cry1 of *Arabidopsis Thaliana* 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-19875 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

cry1 (aC-20) is recommended for detection of cry1 of *Arabidopsis Thaliana* 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).

Molecular Weight of cry1: 75 kDa.

### 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. Partch, C.L., et al. 2005. Role of structural plasticity in signal transduction by the cryptochrome blue-light photoreceptor. *Biochemistry* 44: 3795-3805.

### 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.