

Per1 (N-20): sc-7724

BACKGROUND

Biological timepieces called circadian clocks are responsible for the regulation of hormonal rhythms, sleep cycles and other behaviors. The suprachiasmatic nucleus (SCN), which is located in the brain, was the first mammalian circadian clock to be discovered. A number of transcription factors appearing to be molecular components of the SCN clock have been identified. Mutations within the Clock gene increase the length of the endogenous period and cause a loss of rhythmicity of circadian oscillations. Three mammalian period proteins, designated Per1, Per2 and Per3, exhibit circadian rhythms in the SCN. During subjective night, Per1 and Per2 RNA levels increase in response to light pulses while Per3 RNA levels show no change in response to light pulses. Tim, for Timeless, interacts with Per1 as well as Per2; and Tim and Per1 negatively regulate Clock-BMAL1-induced transcription. Per1 protein isoforms display discrete cellular compartmentalization as well as tissue-specific size differences. The full size Per1 isoform is found principally in the cytoplasm while a shorter nuclear isoform also exists.

CHROMOSOMAL LOCATION

Genetic locus: PER1 (human) mapping to 17p13.1; Per1 (mouse) mapping to 11 B3.

SOURCE

Per1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Per1 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-7724 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-7724 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Per1 (N-20) is recommended for detection of Per1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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). Per1 (N-20) is also recommended for detection of Per1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Per1 siRNA (h): sc-38171, Per1 siRNA (m): sc-38172, Per1 shRNA Plasmid (h): sc-38171-SH, Per1 shRNA Plasmid (m): sc-38172-SH, Per1 shRNA (h) Lentiviral Particles: sc-38171-V and Per1 shRNA (m) Lentiviral Particles: sc-38172-V.

Per1 (N-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of full length cytoplasmic Per1: 140-150 kDa.

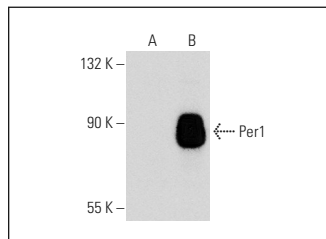
Molecular Weight of Per1 nuclear isoforms: 45-55 kDa.

Positive Controls: Per1 (h): 293T Lysate: sc-114656.

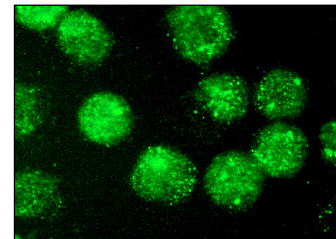
STORAGE

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

DATA



Per1 (N-20): sc-7724. Western blot analysis of Per1 expression in non-transfected: sc-117750 (A) and human Per1 transfected: sc-114656 (B) whole cell lysates.



Per1 (N-20): sc-7724. Immunofluorescence staining of methanol-fixed K-562 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

- Bendová, Z., et al. 2006. Photoperiodic regulation of PER1 and PER2 protein expression in rat peripheral tissues. *Physiol. Res.* 55: 623-632.
- García-Fernández, J.M., et al. 2007. Cytoplasmic localization of mPER1 clock protein isoforms in the mouse retina. *Neurosci. Lett.* 419: 55-58.
- Ackermann, K., et al. 2007. Day-night expression patterns of clock genes in the human pineal gland. *J. Pineal Res.* 43: 185-194.
- Caba, M., et al. 2008. Nature's food anticipatory experiment: entrainment of locomotor behavior, suprachiasmatic and dorsomedial hypothalamic nuclei by suckling in rabbit pups. *Eur. J. Neurosci.* 27: 432-443.
- Meza, E., et al. 2008. Brief daily suckling shifts locomotor behavior and induces Per1 protein in paraventricular and supraoptic nuclei, but not in the suprachiasmatic nucleus, of rabbit does. *Eur. J. Neurosci.* 28: 1394-1403.
- Mansuy, V., et al. 2009. Expression of the GABA_A receptor associated protein Gec1 is circadian and dependent upon the cellular clock machinery in GnRH secreting GnV-3 cells. *Mol. Cell. Endocrinol.* 307: 68-76.
- Bose, S., et al. 2010. Episodes of prolactin gene expression in GH3 cells are dependent on selective promoter binding of multiple circadian elements. *Endocrinology* 151: 2287-2296.
- Meza, E., et al. 2011. Circadian nursing induces PER1 protein in neuroendocrine tyrosine hydroxylase neurones in the rabbit doe. *J. Neuroendocrinol.* 23: 472-480.

RESEARCH USE

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



Try **Per1 (E-8): sc-398890** or **Per1 (2715C2): sc-81574**, our highly recommended monoclonal alternatives to Per1 (N-20).