

ARG59193 anti-PER3 antibody

Package: 50 µg
Store at: -20°C

Summary

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| Product Description | Rabbit Polyclonal antibody recognizes PER3 |
| Tested Reactivity | Hu, Ms, Rat |
| Tested Application | WB |
| Host | Rabbit |
| Clonality | Polyclonal |
| Isotype | IgG |
| Target Name | PER3 |
| Species | Human |
| Immunogen | Recombinant protein corresponding to Q1085-D1199 of Human PER3. |
| Conjugation | Un-conjugated |
| Alternate Names | hPER3; Circadian clock protein PERIOD 3; Period circadian protein homolog 3; GIG13; Cell growth-inhibiting gene 13 protein |

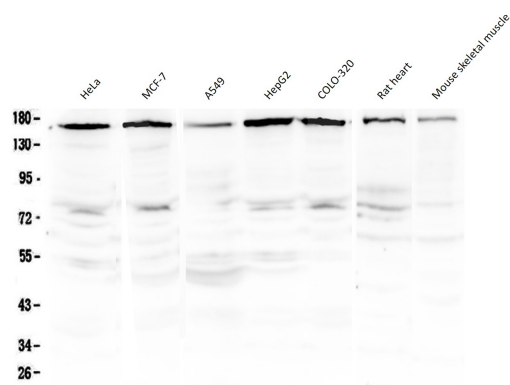
Application Instructions

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| Application table | Application | Dilution |
| | WB | 0.1 - 0.5 µg/ml |
| Application Note | * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist. | |

Properties

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| Form | Liquid |
| Purification | Affinity purification with immunogen. |
| Buffer | 0.9% NaCl, 0.2% Na ₂ HPO ₄ , 0.05% Sodium azide and 4% Trehalose. |
| Preservative | 0.05% Sodium azide |
| Stabilizer | 4% Trehalose |
| Concentration | 0.5 mg/ml |
| Storage instruction | For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use. |
| Note | For laboratory research only, not for drug, diagnostic or other use. |

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| Gene Symbol | PER3 |
| Gene Full Name | period circadian clock 3 |
| Background | This gene is a member of the Period family of genes and is expressed in a circadian pattern in the suprachiasmatic nucleus, the primary circadian pacemaker in the mammalian brain. Genes in this family encode components of the circadian rhythms of locomotor activity, metabolism, and behavior. This gene is upregulated by CLOCK/ARNTL heterodimers but then represses this upregulation in a feedback loop using PER/CRY heterodimers to interact with CLOCK/ARNTL. Polymorphisms in this gene have been linked to sleep disorders. Multiple transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jan 2014] |
| Function | <p>Originally described as 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, NR1D2, RORA, RORB and RORG, which form a second feedback loop and which activate and repress ARNTL/BMAL1 transcription, respectively. Has a redundant role with the other PER proteins PER1 and PER2 and is not essential for the circadian rhythms maintenance. In contrast, plays an important role in sleep-wake timing and sleep homeostasis probably through the transcriptional regulation of sleep homeostasis-related genes, without influencing circadian parameters. Can bind heme. [UniProt]</p> |
| Calculated Mw | 132 kDa |
| PTM | <p>Phosphorylation by CSNK1E is weak and appears to require association with PER1 and translocation to the nucleus.</p> <p>Ubiquitinated. [UniProt]</p> |
| Cellular Localization | Cytoplasm. Nucleus. Note=Mainly cytoplasmic. Translocates to the nucleus through binding PER1, PER2, CRY1 or CRY2, but not TIMELESS. [UniProt] |



ARG59193 anti-PER3 antibody WB image

Western blot: 50 µg of samples under reducing conditions. HeLa, MCF-7, A549, HepG2, COLO-320, Rat heart and Mouse skeletal muscle lysates stained with ARG59193 anti-PER3 antibody at 0.5 µg/ml, overnight at 4°C.