# Recombinant PER3 protein (His tag)

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| **Catalog Number** | 537856 |
| **Synonyms** | hPER3; Cell growth-inhibiting gene 13 protein; Circadian clock protein PERIOD 3 |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | P56645 |
| **Molecular Weight** | Predictes a molecular mass of 43.99 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 44 kDa band. |

## Product Information

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| **Sequence Region** | 47-415 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >88%, by SDS-PAGE with Coomassie Brilliant Blue staining. |
| **Endotoxin** | Not tested. |
| **Activity** | Not tested. |
| **Stability** | Samples are stable for up to twelve months from date of receipt at -70℃ |
| **Protein Construction** | DNA encoding 47-415 aa (P56645) were fused with 6His tag. |

## Storage & Handling

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| **Reconstitution** | Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. |
| **Storage** | Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. |
| **Shipping** | In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature.<br>Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise. |

## Description

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| **Description** | Recombinant human Period circadian protein homolog 3 (hPER3) fragment (residues 47-415), encompassing the PAS 1, PAS 2, and PAC domains. This high-purity protein is an essential tool for investigating circadian rhythm mechanisms, sleep-wake regulation, and domain-specific interactions in transcriptional feedback loops.<br>Period circadian protein homolog 3 (hPER3) is a core component of the circadian clock, an internal time-keeping system that generates approximately 24-hour rhythms regulating metabolism, sleep, immune function, and cardiovascular processes. While redundant with PER1/PER2 in maintaining circadian rhythms, hPER3 plays a critical role in sleep-wake timing and sleep homeostasis through transcriptional regulation. The protein functions within a transcription/translation feedback loop, where it acts as a transcriptional repressor by inhibiting CLOCK/NPAS2-BMAL1/BMAL2 heterodimers. hPER3 localizes primarily to the cytoplasm and translocates to the nucleus upon binding to PER1, PER2, CRY1, or CRY2. Disruptions in circadian rhythms involving hPER3 contribute to cardiovascular diseases, metabolic syndromes, and cancer pathology. |