Recombinant PER2 protein (His tag)

Catalog Number	546438
Synonyms	hPER2; Circadian clock protein PERIOD 2
Species	Human
Expression System	E. coli
Accession	O15055
Molecular Weight	Predictes a molecular mass of 43.92 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 44 kDa band.

Product Information

Sequence Region	103-474
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>86%, 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 103-474 aa (O15055) were fused with 6His tag.

Storage & Handling

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. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human PER2 (Period circadian protein homolog 2) fragment (aa 103-474) is a high-purity protein designed for circadian rhythm and transcriptional regulation studies. This fragment fully encompasses the critical PAS 1, PAS 2, and PAC domains, making it an ideal tool for investigating domain-specific interactions and functions in the molecular clock machinery. Period circadian protein homolog 2 (PER2) is a core transcriptional repressor in the circadian clock, an internal time-keeping system that generates approximately 24-hour rhythms regulating metabolism, sleep, immune function, and cardiovascular processes. PER2 forms part of a transcription/translation feedback loop where it inhibits CLOCK-BMAL1 heterodimer activity, recruits chromatin-modifying complexes like SIN3-HDAC and H3K9 methyltransferases, and interacts with nuclear receptors to link circadian timing to metabolic pathways. It also influences fatty acid metabolism, insulin regulation, and neurotransmitter uptake. The full-length protein exhibits nucleocytoplasmic shuttling, with localization regulated by phosphorylation and interactions with CRY1/2 or PML. Isoform 1 is found in the nucleus and cytoplasm, while isoform 2 localizes to nucleoli. The provided fragment (aa 103-474) retains key functional domains essential for these regulatory mechanisms.