



LD Biopharma, Inc.
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<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CHRONO Protein
Catalog Number: hTF-1409
Manufacturer: LD Biopharma, Inc.

Introduction

Human circadian-associated transcriptional repressor (CHRONO) is a transcriptional repressor which inhibits the transcriptional activator activity of the CLOCK-ARNTL / BMAL1 heterodimer (circadian clock) to regulate the phase of circadian gene expression. Its expression levels peak at circadian time 12 hours (CT12), 8 hours earlier than the peak of PER1/2 and CRY1/2 transcriptional repressors (peak CT20-CT24). Thus, it can repress the CLOCK-ARNTL/BMAL1 activity in a different time window compared to CRY and PER proteins. As ARNTL/BMAL1 complex positively regulates myogenesis and negatively regulates adipogenesis via the transcriptional control of the genes of the canonical Wnt signaling pathway. CHRONO may also play a role in normal pancreatic beta-cell function; regulates glucose-stimulated insulin secretion via interaction of ARNTL/BMAL1 complex.

Full-length mature human CHRONO (384 aa, derived from BC027999) gene was constructed with 29 aa N-terminal T7 / His / TEV cleavage site Tag. This protein was expressed in E. coli as inclusion bodies, refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: CHRONO (C10RF51)
Accession Number: NP_653298
Species: Human
Size: 20 µg / Vial
Composition: 0.2 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, sucrose and DTT.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 7 days.



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Key Reference

Goriki A, et al., *A novel protein, CHRONO, functions as a core component of the mammalian circadian clock.* PLoS Biol. 12 (4), E1001839 (2014)

Applications

1. May be used for in vitro CHRONO mediated myogenesis and adipogenesis regulation in canonical Wnt signaling pathway regulation study using “ProFectin” based intracellular delivery of this protein.
2. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for CHRONO protein-protein interaction mapping.
4. As immunogen for specific antibody production.

Quality Control

1. Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHGNLYFQGGGSDSPSSVSSYSSYSLSSSFPTSPVNSDFGFPSDSER
EDKGAHGPRPDTVGRGGRSPSPGPIRCRHRKSVSGNQHTPSHPKQRGSASPMAGSGAKRSRDG
ELETSLNTQGCTTEGDLLFAQKCKELQGFIPPLTDLLNGLKMGFRFERGLSSSFQQSVAMDRIQRI
VGVLQKPQMGERYLGTLQVEGMLKTWFPQIAAQKSSLGGGKHQLTKHFPSHSDSAASSPASP
MEKMDQTQLGHLALKPKQPWHLTQWPAMNLTWIHTTPICNPPLSSPGTISFSHGPLGTGTGIGV
ILFLQHGVQPFTHSAPTPVPPTTASPVIPEGPMKLSGEGPRCYSLPVTLPDWSYTLSPPSLP
TLARKMTIGHREQQRSHPPVAADAHLLNL