



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human Helios Protein
Catalog Number: hTF-1517
Manufacturer: LD Biopharma, Inc.

Introduction

Human zinc finger protein Helios (HELIOS) gene encodes a member of the Ikaros family of zinc-finger proteins. Three members of this protein family (Ikaros, Aiolos and Helios) are hematopoietic-specific transcription factors involved in the regulation of lymphocyte development. This protein forms homo- or hetero-dimers with other Ikaros family members, and is thought to function predominantly in early hematopoietic development.

Full-length human HELIOS cDNA (526aa, Isoform-I, derived from BC028936) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. This protein was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: HELIOS (IKZF2; ANF1A2; ZNF1A2)
Accession Number: NP_057344.2
Species: Human
Size: 50 µg / Vial
Composition: 0.5 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.

Key References

Alexander T, et al., *Foxp3+ Helios+ regulatory T cells are expanded in active systemic lupus erythematosus*. Ann. Rheum. Dis. 72 (9), 1549-1558 (2013)

Asanuma S, et al., *Adult T-cell leukemia cells are characterized by abnormalities of*



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Helios expression that promote T cell growth. Cancer Sci. 104 (8), 1097-1106 (2013)

Zhong H et al., *Differential control of Helios(+/-) Treg development by monocytes subsets through disparate inflammatory cytokines. Blood 121 (13), 2494-2502 (2013)*

Himmel ME, et al., *Helios+ and Helios- cells coexist within the natural FOXP3+ T regulatory cell subset in humans. J. Immunol. 190 (5), 2001-2008 (2013)*

Du W, et al., *Foxp3+ Treg expanded from patients with established diabetes reduce Helios expression while retaining normal function compared to healthy individuals. PLoS ONE 8 (2), E56209 (2013)*

Applications

1. May be used for in vitro HELIOS mediated gene transcription regulation in human hematopoietic development study with “ProFectin” reagent 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. Potential biomarker protein for monitoring T cell activities in various auto-immune-diesases.
4. As immunogen for specific antibody production.

Quality Control

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

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHGNLYFQGGEFETEAIDGYITCDNELSPEREHSNMAIDLTSSTPNG
QHASPShMTSTNSVKLEMQSDEECDRKPLSREDEIRGHDEGSSLEEPLIESSEVADNRKVQELQ
GEGGIRLPLNGKCLKDVCGMVCI GPNVLMVHKRSHTGERPFHCNQCASFTQKGNLLRHIKLHSG
EKPFKCPFCSYACRRRDAL TGHLRTHSVGKPHKCNYCGRSYKQRSSLEEHEKCHNYLQNVSM
AAGQVMSSHVPPMEDCKEQEPIMDNNISLVPFERPAVIEKLTGNMGKRKSSTPQKFVGEKLMRF
SYPDIHFDMNLTYEKEAELMQSHMMDQAINNAITYLGAEALHPLMQHPSTIAEVAPVISSAYS
QVYHPNRIERPI SRETADSHENMDGPISLIRPKSRPQEREASPSNSCLDSTDSESSHDDHQS
YQGH PALNPKRKQSPAYMKEDVKALD TTKAPKGS LKDIYKVFNGEGEQIRAFKCEHCRVFLFDHV
MYTIHMGCHGYRDPLECNICGYRSQDRYEFSSHIVRGEHTFH