



LD Biopharma, Inc.
9924 Mesa Rim Road Suite B
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human IKAROS Protein
Catalog Number: hTF-0541
Manufacturer: LD Biopharma, Inc.

Introduction

Human IKAROS family zinc finger 1 (Ikaros) (IKZF1) gene encodes a transcription factor that belongs to the family of zinc-finger DNA binding proteins associated with chromatin remodeling. The expression of this protein is restricted to the fetal and adult hemo-lymphopoietic system, and it functions as a regulator of lymphocyte differentiation. Several alternatively spliced transcript variants encoding different isoforms have been described for this gene. All isoforms share a common C-terminal domain, which contains two zinc finger motifs that are required for hetero- or homodimerization, and for interactions with other proteins. The isoforms, however, differ in the number of N-terminal zinc finger motifs that bind DNA and contain the nuclear localization signal, resulting in members with and without DNA-binding properties. Only few isoforms contain the requisite three or more N-terminal zinc motifs that confer high affinity binding to a specific core DNA sequence element in the promoters of target genes. The non-DNA-binding isoforms are largely found in the cytoplasm, and thought to function as dominant negative factors. Overexpression of some dominant-negative isoforms have been associated with B-cell malignancies, such as acute lymphoblastic leukemia (ALL).

Full-length human IKAROS cDNA (519aa, Isoform_1) was constructed with codon optimization with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. 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: IKAROS (IKZF1; hIK-1; IK1; LYF1; Hs.54452)
Accession Number: NP_006051
Species: Human
Size: 50 µg / Vial



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Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Glycerol.

Storage: In Liquid. Keep at -20°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Cazzaniga,G., et al., *Developmental origins and impact of BCR-ABL1 fusion and IKZF1 deletions in monozygotic twins with Ph+ acute lymphoblastic leukemia*. Blood 118 (20), 5559-5564 (2011)

Payne,K.J. et al., *Ikaros and tumor suppression in acute lymphoblastic leukemia*. Crit Rev Oncog 16 (1-2), 3-12 (2011)

Morgan,B., et al., *Aiolos, a lymphoid restricted transcription factor that interacts with Ikaros to regulate lymphocyte differentiation*. EMBO J. 16 (8), 2004-2013 (1997)

Applications

1. May be used for in vitro human lymphoid cell differentiation regulations study with this protein mediated intracellular delivery.
2. May be used as specific substrate protein for kinase and ubiquitin related enzyme functional screening assays.
3. Potential biomarker protein for leukemia diagnostic developments.
4. May be used as antigen for specific antibody production.

Quality Control

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

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHGNLYFQGGF~~DA~~DEGQDMSQVSGKESPPVSDTPDEGDEPMP~~I~~PED
LSTTSGGQQSSKSDRVVASNVKVETQ~~S~~DEENGRACEMNGEECAEDLRMLDASGEKMNGSHRDQG



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SSALSGVGGIRLPNGKCLKCDICGIICIGPNVLMVHKRSHTGERPFQCNQCGASF'TQKGNLLRHI
KLHSGEKPFKCHLCNYACRRRDAL'TGHLRTHSVGKPHKCGYCGRSYKQRSSEEHKERCHNYLE
SMGLPGTLYPVIKEETNHSEMAEDLCKIGSERSLVLDRLASNVAKRKSSMPQKFLGDKGLSDTP
YDSSASYEKENEMMKSHVMDQAINNAINYLGAESLRPLVQTPPGGSEVVPVISPMPYQLHKPLAE
GTPRSNHSAQDSAVENLLLLSKAKLVPSEREASPSNSCQDSTDTESNNEEQRSGLIYLTNHIAP
HARNGLSLKEEHRAYDLLRAASENSQDALRVVSTSGEQMKVYKCEHCRVLF LDHVMYTIHMGCH
GFRDPFECNMCGYHSQDRYEFSSHITRGEHRFHMS