



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human TOX-11R Protein
Catalog Number: HTF-2838
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human Thymocyte Selection-Associated High Mobility Group Box Protein TOX gene encodes a transcription factor. TOX protein contains a HMG box DNA binding domain. HMG boxes are found in many eukaryotic proteins involved in chromatin assembly, transcription and replication. TOX function regulates T-cell development, especially in controlling CD8+ T cell exhaustion during chronically infection.

Full-length human TOX cDNA (525aa, derived from BC016665) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal and 11 arginine (11R) tag at its C-terminal. It was expressed in E. coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: TOX (TOX1)
Accession Number: NP_055544
Species: Human
Size: 30 µg / Vial
Composition: 0.3 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose ,DTT and others.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.

Key References

Omar Khan, et al., *TOX transcriptionally and epigenetically programs CD8+ T cell exhaustion*. Nature. <https://doi.org/10.1038/s41586-019-1325-x> (2019)



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Lobbardi R, et al., *TOX Regulates Growth, DNA Repair, and Genomic Instability in T-cell Acute Lymphoblastic Leukemia*. *Cancer Discov* 7 (11), 1336-1353 (2017)

Benoit BM, et al., *CD164 identifies CD4(+) T cells highly expressing genes associated with malignancy in Sezary syndrome: the Sezary signature genes, FCRL3, Tox, and miR-214*. *Arch. Dermatol. Res.* 309 (1), 11-19 (2017)

Applications

1. May be used for in vitro TOX mediated gene transcription regulation study in T cell cell's differentiation by intracellular delivery of this TOX-11R protein directly in vitro cell culture.
2. May be used for mapping TOX protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein / therapeutic target protein for T cell function related diseases, such as controlling T cell activities in vivo, et al.
5. As native Human TOX immunogen for its specific antibody production.

Quality Control

Purity: > 90 % by SDS-PAGE.

Recombinant Human TOX-11R Protein Sequence (63.0 kD)

MASMTGGQQMGRGHHHHHENLYFQGGEFDVRFYPPPAQPAAAPDAPCLGSPCLDPYYCNKFD
GENMYMSMTEPSQDYVPASQSYPGPSLESEDFNI PPI T PPSLPDHSLVHLNEVESGYHSLCHPM
NHGLLLPFHPQNMDLPEITVSNMLGQDGTLLSNSISVMPDIRNPEGTQYSSHPQMAAMRPRGQP
ADIRQQPGMMPHGQLTTINQSQLSAQLGLNMGGSNVPHNSPSPGSKSATPSPSSVHEDEGDD
TSKINGGEKRPASDMGKKPKTPKKKKKDPNEPQKPVSAYALFFRDTQAAIKGQNP NATFGEVS
KIVASMWDGLGEEQKQVYKKKTEAAKKEYLKQLAAYRASLVSKSYSEPV DVKTSQPPQLINSKP
SVFHGPSQAHSALYLSSHYHQQPGMNPHLTAMHPSLPRNIAPKPNNQMPVTVSIANMAVSPPPP
LQISPLPHQHLNMQQHQPLTMQQPLGNQLPMQVQSALHSPTMQQGFTLQPDYQTIINPTSTAAQ
VVTQAMEYVRSGRNPPQPVDWNNDYCSSGGMQRDKALYLT ESGGGSPGRRRRRRRRRR