



**LD Biopharma, Inc.**  
7384 Trade Street, Suite B  
San Diego, CA 92121  
Tel: 858-876-8266  
<http://www.ldbiopharma.com>

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human FoxP1-11R Protein  
**Catalog Number:** hTF-2643  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human FoxP1 gene encodes a Transcriptional repressor. It can act with CTBP1 to synergistically repress transcription but CTBP1 is not essential. FoxP1 plays an important role in the specification and differentiation of lung epithelium. It acts cooperatively with FOXP4 to regulate lung secretory epithelial cell fate and regeneration by restricting the goblet cell lineage program; the function may involve regulation of AGR2. It is essential transcriptional regulator of B-cell development. It is also involved in regulation of cardiac muscle cell proliferation and involved in the columnar organization of spinal motor neurons. FoxP1 promotes the formation of the lateral motor neuron column (LMC) and the preganglionic motor column (PGC) and is required for respective appropriate motor axon projections. The segment-appropriate generation of spinal chord motor columns requires cooperation with other Hox proteins. Foxp1 can regulate PITX3 promoter activity; may promote midbrain identity in embryonic stem cell-derived dopamine neurons by regulating PITX3. It negatively regulates the differentiation of T follicular helper cells T(FH)s. It is involved in maintenance of hair follicle stem cell quiescence; the function probably involves regulation of FGF18. It represses transcription of various pro-apoptotic genes and cooperates with NF-kappa B-signaling in promoting B-cell expansion by inhibition of caspase-dependent apoptosis. FoxP1 binds to CSF1R promoter elements and is involved in regulation of monocyte differentiation and macrophage functions; repression of CSF1R in monocytes seems to involve NCOR2 as co-repressor. It is involved in endothelial cell proliferation, tube formation and migration indicative for a role in angiogenesis; the role in neovascularization seems to implicate suppression of SEMA5B. FoxP1 can negatively regulate androgen receptor signaling. FoxP1 isoform-VIII is involved in transcriptional regulation in embryonic stem cells (ESCs).

Full-length human FoxP1 cDNA ( 676aa, Isoform-I, derived BC152752 ) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (31aa) fusion at its N-terminal and 11 Poly-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:** FoxP1 ( hFKH1B; HSPC215; MFH; QRF1; 12CC4 )  
**Accession Number:** NP\_116071.2  
**Species:** Human



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<b>Size:</b>	25 µg / Vial
<b>Composition:</b>	0.25 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and others.
<b>Storage:</b>	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

## Key References

Sun Y, et al. *Long noncoding RNA SNHG12 facilitates the tumorigenesis of glioma through miR-101-3p/FOXP1 axis*. Gene 676, 315-321 (2018)

Konda VJA et al., *Biomarkers of Barrett's Esophagus: From the Laboratory to Clinical Practice*. Dig. Dis. Sci. 63 (8), 2070-2080 (2018)

Chiang K, et al., *PRMT5 Is a Critical Regulator of Breast Cancer Stem Cell Function via Histone Methylation and FOXP1 Expression*. Cell Rep 21 (12), 3498-3513 (2017)

Wang B, et al., *Multiple domains define the expression and regulatory properties of Foxp1 forkhead transcriptional repressors*. J. Biol. Chem. 278 (27), 24259-24268 (2003)

## Applications

1. May be used for in vitro FoxP1 mediated gene transcription regulation study in various cell's differentiation by intracellular delivery of this FoxP1-11R protein directly in vitro cell culture
2. May be used for mapping FoxP1 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 various cancer prognosis and cancer treatment drug development.
5. As native human FoxP1 immunogen for specific antibody production.

## Quality Control



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Purity: > 90% by SDS-PAGE.

## Recombinant Human FoxP1 -11R Protein Sequence ( 81.0 kD )

MASMTGGQQMGRGHHHHHENLYFQGGEFGSMQESGTETKSNNGSAIQNGSGGSNHLLECGGLREGRSNGE  
TPAVDIGAADLAHAQQQQQQALQVARQLLLQQQQQQQVSLKSPKRNDKQPALQVPVSVAMMTPQVITPQ  
QMQQILQQQVLSPOQLQVLLQQQQALMLQQQQLOEFYKKQQEQQLQLLLQQQHAGKQPKEQQQVATQQLA  
FQQQLLQMQLQQQHLLSLQRQGLLTIQPGQPALPLQPLAQGMIPTELQQLWKEVTSAHTAEETGNNHS  
SLDLTTTCVSSSAPSKTSLIMNPHASTNGQLSVHTPKRESLSHEEHPHSHPLYGHGVCKWPGCEAVCEDF  
QSFLKHLNSEHALDDRSTAQCRVQMVVQLELQLAKDKERLQAMMTHLVKSTEPKAAPQPLNLVSSVT  
LSKSASEASPQSLPHTPTTPTAPLTPVTQGPSVITTTSMHTVGPIRRYSKYNVPISSADIAQNQEFYK  
NAEVRPPFTYASLIRQAILESPEKQLTLNEIYNWFTRMFAYFRRNAATWKN AVRHNLSLHKCFVRVENVK  
GAVWTVDEVEFQKRRPQKISGNPSLIKMQSSHAYCTPLNAALQASMAENSIPLYTTASMGNPTLGNLAS  
AIREELNGAMEHTNSNESDSSPGRSPMQAVHPVHVKEEPLDPEEAEGPLSLVTTANHSPDFDHDHRYEDE  
PVNEDMEESGGGSPGRRRRRRRRRRR