



**LD Biopharma, Inc.**  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human TFE3 Protein  
**Catalog Number:** hTF-2206  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human Transcription Factor E3 (TFE3) gene encodes a basic helix-loop-helix domain-containing transcription factor that binds MUE3-type E-box sequences in the promoter of genes. The encoded protein promotes the expression of genes downstream of transforming growth factor beta (TGF- $\beta$ ) signaling. This gene may be involved in chromosomal translocations in renal cell carcinomas and other cancers, resulting in the production of fusion proteins. Translocation partners include PRCC (papillary renal cell carcinoma), NONO (non-POU domain containing, octamer-binding), and ASPSCR1 (alveolar soft part sarcoma chromosome region, candidate 1), among other genes.

Full-length human TFE3 cDNA (574aa, Isoform-I) 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 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:** TFE3 (bHLHe33; RCCP2; RCCX1; TFEA)  
**Accession Number:** NP\_006512  
**Species:** Human  
**Size:** 10  $\mu$ g / Vial  
**Composition:** 0.1 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 30 days.

### Key References

Xia QY, et al., *Xp11 Translocation Renal Cell Carcinomas (RCCs) With RBM10-TFE3 Gene Fusion Demonstrating Melanotic Features and Overlapping Morphology With t(6;11) RCC: Interest and Diagnostic Pitfall in Detecting a Paracentric Inversion of TFE3*. Am. J. Surg. Pathol. 41 (5), 663-676 (2017)



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Taniguchi M et al., *TFE3, HSP47, and CREB3 Pathways of the Mammalian Golgi Stress Response* Cell Struct. Funct. 42 (1), 27-36 (2017)

Clark J, et al., *Fusion of splicing factor genes PSF and NonO (p54nrb) to the TFE3 gene in papillary renal cell carcinoma.* Oncogene 15 (18), 2233-2239 (1997)

## Applications

1. May be used for in vitro TFE3 mediated gene transcription regulation study in TGF- $\beta$  pathway for various cells by intracellular delivery of this protein with protein delivery reagent such as ProFectin reagent kit.
2. May be used for mapping protein-protein interaction.
3. May be used as as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein / therapeutic target protein for cancer prognosis and cancer treatment.
5. As immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFGSSHAAEPARDGVEASAEGPRAVFLLEERRPADS  
AQLLSLNLLPESGIVADIELENVLDPDSFYELKSQPLPLRSSLPIISLQATPATPATLSASSA  
GGSRTPAMSSSSSRVLLRQQLMRAQAQEQRERREQAAAAPFPSPAPASPAISVVGVSAGGH  
TLRPPPAQVPREVLKVQTHLENPTRYHLQQARRQVKQYLSTTLGPKLASQALTPPPGPASAQ  
PLPAPEAAHTTGPTGSAPNSPMALLTIGSSSEKEIDDVIDEIIISLESSYNDEMLSYLPGGTTGL  
QLPSTLPVSGNLLDVYSSQGVATPAITVSNSCPaelPNIKREISETeAKALLKERQKKNHNLI  
ERRRRFNINDRIKELGTLPKSSDPEMRWNKGTILKASVDYIRKLQKEQQRSKDLESRQRSLEQ  
ANRSLQLRIQELELQAQIHGLPVPPTPGLLSLATTASDSLKPEQLDIEEEGRPGAATFHVGGG  
PAQNAPHQQPPAPPSDALLDLHFPSDHLGDLGDPFHLGLEDILMEEEGTVVGGGLSGGALSPLRA  
ASDPLLSSVSPAVSKASSRRSSFSMEEEES