



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human TFAP2A - 11R Protein
Catalog Number: hTF-2651
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human transcription Factor AP-2-alpha (TFAP2A) gene is a transcription factor that binds the consensus sequence 5'-GCCNNNGGC-3'. The encoded protein functions as either a homodimer or as a heterodimer with similar family members. This protein activates the transcription of some genes while inhibiting the transcription of others. TFAP2A plays important roles in a large spectrum of important biological functions including proper eye, face, body wall, limb and neural tube development. As a heterodimer, they also suppress a number of genes including MCAM/MUC18, C/EBP alpha and MYC. TFAP2A is the only AP-2 protein required for early morphogenesis of the lens vesicle. Defects in this gene are a cause of branchiooculofacial syndrome (BOFS). Recent data indicated that TFAP2A, when combined with DNP63a, GRHL2 and cMyc, as group of trans-differentiation factor, which could efficiently convert skin wound resident mesenchymal cells into skin epithelial cells for skin damage repairing.

Full-length human TFAP2A cDNA (436aa, Isoform-A, derived BC017754) 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 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: TFAP2A (AP2TF, TFAP2)
Accession Number: NP_003211
Species: Human
Size: 35 µg / Vial
Composition: 0.35 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 30 days.



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Key References

Masakazu Kurita, et al., *In vivo reprogramming of wound-resident cells generates skin epithelial tissue*. Nature. [https:// doi.org/10.1038/s41586-018-0477-4](https://doi.org/10.1038/s41586-018-0477-4) (2018)

Zhu Z, et al., *DNA hypomethylation of a transcription factor binding site within the promoter of a gout risk gene NRBP1 upregulates its expression by inhibition of TFAP2A binding*. Clin Epigenetics 9, 99 (2017)

Pu M, et al., *MiR-1254 suppresses HO-1 expression through seed region-dependent silencing and non-seed interaction with TFAP2A transcript to attenuate NSCLC growth*. PLoS Genet. 13 (7), e1006896 (2017)

Lian W, et al., *AP-2alpha reverses vincristine-induced multidrug resistance of SGC7901 gastric cancer cells by inhibiting the Notch pathway*. Apoptosis 22 (7), 933-941 (2017)

Seberg HE, et al., *TFAP2 paralogs regulate melanocyte differentiation in parallel with MITF*. PLoS Genet. 13 (3), e1006636 (2017)

Applications

1. May be used for in vitro TFAP2A mediated gene transcription regulation study for various cell's differentiation by intracellular delivery of this TFAP2A-11R protein directly in vitro cell culture
2. May be used for mapping TFAP2A protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Combination delivery TFAP2A, DNP63a, GRHL2 and cMyc intracellularly might benefit skin cell repairing, as potential skin disease treatment strategy.
5. As native human TFAP2A immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Human TFAP2A -11R Protein Sequence (52.7 kD)

MASMTGGQQMGRGRGHHHHHENLYFQGGFLVHSFSAMDRHDGTSNGTARLPQLGTVGQSPY TSA



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PPLSHTPNADFQPPYFPPPYQPIY PQSQDPYSHVNDPYSLNPLHAQPQPQHWPWGQRQSQESG
LLHTHRGLPHQLSGLDPRRDYRRHEDLLHGPHALSSGLGDLSIHSLPHAIEEVPHVEDPGINIP
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KSSDKEEKHRK **ESGGGSPGRRRRRRRRRR**