



LD Biopharma, Inc.
9924 Mesa Rim Road, Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human DEAF1 Protein
Catalog Number: hTF-1535
Manufacturer: LD Biopharma, Inc.

Introduction

Human deformed epidermal autoregulatory factor 1 homolog (DEAF1) gene encodes a zinc finger domain-containing protein that functions as a negative-regulator of transcription which binds to sequence with multiple copies of 5'-TTC[CG]G-3' present in its own promoter and that of the HNRPA2B1 gene. It also activates the proenkephalin gene independently of promoter binding, probably through protein-protein interaction. When secreted (with different isoforms), behaves as an inhibitor of cell proliferation, by arresting cells in the G0 or G1 phase. Activity of this protein is important in the regulation of embryonic development. It is required for neural tube closure and skeletal patterning, and also regulates epithelial cell proliferation and side-branching in the mammary gland. Controls the expression of peripheral tissue antigens in pancreatic lymph nodes. Mutations in this gene have been found in individuals with autosomal dominant mental retardation. Alternative splicing results in multiple transcript variants. Isoform 1 displays greater transcriptional activity than isoform 4. Isoform 4 may inhibit transcriptional activity of isoform 1 by interacting with isoform 1 and retaining it in the cytoplasm. Transcriptional activator of EIF4G3.

Full-length human DEAF1 cDNA (564 aa, Isoform-I) was constructed with full-length gene synthesis using codon optimization technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. It was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: DEAF1 (SPN; ZMYND5)
Accession Number: NP_0066288
Species: Human
Size: 40 µg / Vial



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Composition: 0.40 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 -80°C for long term storage. Product is stable at 4 °C for at least 7 days.

Key References

Vulto-van Silfhout AT, et al., *Mutations affecting the SAND domain of DEAF1 cause intellectual disability with severe speech impairment and behavioral problems*. Am. J. Hum. Genet. 94 (5), 649-661 (2014)

Ordureau A, et al., *DEAF1 is a Pellino1-interacting protein required for interferon production by Sendai virus and double-stranded RNA*. J. Biol. Chem. 288 (34), 24569-24580 (2013)

Kateb F, et al., *Structural and functional analysis of the DEAF-1 and BS69 MYND domains*. PLoS ONE 8 (1), E54715 (2013)

Jensik PJ, et al., *Deformed epidermal autoregulatory factor-1 (DEAF1) interacts with the Ku70 subunit of the DNA-dependent protein kinase complex*. PLoS ONE 7 (3), E33404 (2012)

Applications

1. May be used for in vitro DEAF1 mediated gene transcription regulation for *neuronal differentiation* study with “ProFectin” reagent based intracellular delivery of this protein.
2. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for DEAF1 protein-protein interaction mapping.
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.



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Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGEDSDSAKQLGLAEAAVAAAAVAAAAAAGGEAE
PVLSRDEDSEEDADSEAERETPRVTAVAVMAAEPGHMDMGAEALPGPDEAAAAFAEVTTVTV
ANVGAAADNVFTTSVANAASISGHVLSGRTALQIGDSLNTKATLIVVHTDGSIVETTGLKGPA
APLTPGPQSPPTPLAPGQEKGGTKYNWDPVYDSELPVRCRNISGTLYKNRLGSGGRGRCIKQG
ENWYSPTEFEAMAGRASSKDWKRSIRYAGRPLQCLIQDGILNPHAASCTCAACDDMTLSGPVR
LFVVPYKRRKKENELPTTPVKKDSPKNITLLPATAATFTVTPSGQITTSGALTFDRASTVEATA
VISESPAQGDVDFAGATVQEASVQPPCRASHPEPHYPGYQDSCQIAPFPEAALPTSHPKIVLTSL
PALAVPPPTPTKAAPPALVNGLELSEPRSWLYLEEMVNSLLNNTAQQLKTLFEQAKHASTYREAA
TNQAKIHADAERKEQSCVNCGREAMSECTGCHKVNYCSTFCQRKDWKDHQHICGQSAAVTVQAD
EVHVAESVMEKVTV