TARDBP Protein, Human (P.pastoris, His)

Cat. No.:	HY-P71788
Synonyms:	ALS10; TAR DNA binding protein 43; TAR DNA binding protein; TAR DNA-binding protein 43; TARDBP; TDP 43; TDP-43; TDP43
Species:	Human
Source:	P. pastoris
Accession:	Q13148 (M1-G396)
Gene ID:	23435
Molecular Weight:	Approximately 44.9 kDa

PROPERTIES

AA Sequence	M S E Y I R V T E D E N D E P I E I P S E D D G T V L L S T V T A Q F P G A C G L R Y R N P V S Q C M R G V R L V E G I L H A P D A G W G N L V Y Y V V N Y P K D N K R K M D E T D A S S A V K V K R A V Q K T S D L I V L G L P W K T T E Q D L K E Y F S T F G E V L M V Q V K K D L K T G H S K G F G F V R F T E Y E T Q V K V M S Q R H M I D G R W C D C K L P N S K Q S Q D E P L R S R K V F V G R C T E D M T E D E L R E F F S Q Y G D V M D V F I P K P F R A F A F V T F A D D Q I A Q S L C G E D L I I K G I S V H I S N A E P K H N S N R Q L E R S G R F G G N P G G F G N Q G G F G N S R G G G A G L G N N Q G S N M G G G M N F G A F S I N P A M M A A A Q A A L Q S S W G M M G M L A S Q Q N Q S G P S G N N Q N Q G N M Q R E P N Q A F G S G N N S Y S G S N S G A A I G W G S A S N A G S G S G
Appearance	Lyophilized powder
Formulation	Lyophilized after extensive dialysis against solution in 20 mM Tris-HC1, 0.5 M NaCl, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The TARDBP protein, an RNA-binding factor, plays a multifaceted role in various steps of RNA biogenesis and processing. Utilizing its two RNA recognition motifs, RRM1 and RRM2, TARDBP preferentially binds GU-repeats on RNA molecules, predominantly localized within long introns and the 3'UTR of mRNAs. This binding activity regulates the splicing of

numerous non-coding and protein-coding RNAs, impacting proteins crucial for neuronal survival and those relevant to neurodegenerative diseases. TARDBP also contributes to mitochondrial homeostasis by regulating the processing of mitochondrial transcripts and modulates mRNA stability by recruiting CNOT7/CAF1 deadenylase to mRNA 3'UTR, leading to poly(A) tail deadenylation. In response to oxidative insult, TARDBP associates with stalled ribosomes in stress granules, contributing to cell survival. Moreover, it participates in skeletal muscle formation and regeneration by forming cytoplasmic myo-granules and binding mRNAs encoding sarcomeric proteins. Additionally, TARDBP is involved in the maintenance of circadian clock periodicity by stabilizing CRY1 and CRY2 proteins in a FBXL3-dependent manner and negatively regulates the expression of CDK6. Interactions with various proteins, including BRDT, ATXN2, MATR3, UBQLN2, HNRNPA2B1, ZNF106, CNOT7/CAF1, CRY2, and PPIA/CYPA, highlight the diverse roles of TARDBP in RNA regulation and cellular processes.

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