

Recombinant Mouse TPR Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51121

Size: 10ug, 100ug

Protein Name: Nucleoprotein TPR (NPC-associated intranuclear protein) (Translocated promoter region and nuclear basket protein)

Synonym: Tpr

UniProt ID: F6ZDS4

UniProt Link: www.uniprot.org/uniprotkb/F6ZDS4/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 2431 AA

Molecular Weight: 274 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MTSGGSASRSGHRGVPMTSRGFDGSRGSLRRAGARETASEAADGAAPAAGLRASPCSLASPSA
AAVAaipADMAAVLQQVLERPELNKLPKSTQNKLEKFLAEQQSEIDCLKGRHEKFKVESEQQYFEIE
KRLSQQSERLVTTETRECQNLRLLELEKLNNQVKVLTEKTKELETAQDRNLGIQSQFTRAKEELEAEKR
DLIRTNERLSQVEYLTEDVKRLNEKLKESNTTKGELQLKLDELQASDVAVKYREKRLEQEKELLHN
QNSWLNTelKTKTDELLALGREKGNEILELKCENLNKKEEVLRLLEEQMNGLKTSNEHLQKHVEDLLT
KLKEAKEQQASMEEFHNELNAHIKLSNLYKSAADDSEAKSNELTRAVDELHKLLKEAGEANKTIQD
HLLQVEESKDQMEKEMLEKIGKLEKELNANDLLSATKRKGAILSEEELAAMSPTAAAVAKIVKPGMK
LTELynayVETQDQLLLEKQENKRINKYLDEIVKEVEAKAPILKRQREEYERAQKAVASLSAKLEQAM
KEIQRQLQEDTDKANKHSSVLERDNQRMEIQIKDLSQQIRVLLMELEEARGNHVIRDEEVSSADISSSS
EvisqHLVSYRNIEELQQQNQRLLFALRELGETREREEQETTSSKIAELQHKLENSLAELEQLRESRQ
HQMQLVDSIVRQRDMYRILLSQTTGMAIPLQASSLDDISLLSTPKRSSTSQTVSTPAPEPVIDSTEAIE
AKAALKQLQEIfENYKKEKIDSEKLQNEQLEKLQEQTDLRSQNTKISTQLDFASKRYEMLQDNVEG
YRREITSLQERNQKLtATTQKQEQIINTMTQDLRGANEKLVAEVRaENLKKKEMLKLSEVRLSQQ
RESLLAEQRGQNLLLTLNLTQTIQGILERSSETETKQRLNSQIEKLEHEISHLKKKLENEVEQRHTLTRNLD
VQLLDTKRQLDTEINLHLNTKELLKNAQKDIA TLKQHLNNMEaQLASQSTQRTGKGQPGDRDDVDDL
KSQLRQAEeQVNDLKERLKTSTSNVEQYRAMVTSLEDsLNKEKQVTEEvhKNIEVRLKESAEFQTQL
EKKLMEVEKEKQELQDDKRKAIESMEQQLSELKKTLLSTVQNEVQeALQRASTALSNEQQARRDCQE
QAKIAVEAQNKYERELMLHAADVEALQAAKEQVSKMTSIRQHLEETTQKAESQLLECKASWEERER



VLKDEVSKSVSRCEDLEKQNRLLHDQIEKLSKVVTSMDKAVQAPLNVSLNEEGKSQEQILEILRFIR
REKEIAETRFEVAQVESLRYRQRVELLERELQELQDSLNVEREKVQVTAKTMAQHEELMKKTETMN
VVMETNKMRLREEKERLEQNLQQMQAKVRKLELDILPLQEANAELSEKSGMLQAEKKLLEEDVKRWK
ARNQQLINQQKDPDTEEYRKLLSEKEIHTKRIQQLNEEVGRLKAEIARSNASLTNNQNLIQSLREDLS
KARTEKEGIQKDLDAKIIDIQEKVKITITQVKKIGRRYKTQFEELKAQQNKAMETSTQSSGDHQQEHISV
QEMQELKDTLSQSETKTKSLEGQVENLQKTLSEKETEARSLQEQTQVQLQSELSRLRQDLQDKTTEE
QLRQQMNEKTWKTALAKSKITHLSGVKDQLTKEIEELKQRNGALDQQKDELVDVRMTALKSQYEGRI
SRLERELREHQRHLEQRDEPQEPTNKAPEQQRQITLKTTPASGERGIASSTDPPTANIKPTPVVST
PSKVTAAMAGNKSTPRASIRPMVTPATVTNPTTTPTATVMPTTQVESQEAMQSEGPVEHVPVFGN
ASGSVRSTSPNVQPSISQPILTVQQQTQATAFVQPTQQSHPIEPTNQELSPNIVEVVQSSPVERPS
TSTAVFGTVSATPSSSLPKRTREEEDSTMEAGDQVSEDVEMPLPKKLMVTPVGTEEEVMAEES
TDGEAETQAYNQDSQDSIGEGVTQGDYTPMEDSEETSQSLQIDLGPLQSDQQTSSQDGGQKGDD
VIVIDSDDEDDDEENDGEHEDYEEDDEDDDDDEEDDTGMGDEGEDSNEGTSADGNDGYEADDAE
GGDGTDPGTETEEESMGAESHQRAADSQNSGEGNTSAAESSFSQEVAREQQPTSASERQTPQAP
QSPRRPPHPLPPRLTIHAPPQELGPPVQRIQMTRRQSVGRGLQLTPGIGGMQQHFFDDEDRTVPST
PTLVVPHRTDGF AEAIHSPQVAGVPRFRFGPPEDMPQTSSSHSDLGQLASQGGGLGMYETPLFLAHE
EESGGRSVPTTPLQVAAPVTVFTSTSDASEHASQSVPMVTTSTGTLSTTNETAAGDDGDEVFVE
AESEGISSEAGLEIDSQQEEEPVQASDESDLPSTSQDPPSSSSVDTSSSQPKPFRRVRLQTTLRQGV
RGRQFNRRQRGISHAMGGRGGINRGNIN

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Nucleoprotein TPR (NPC-associated intranuclear protein) (Translocated promoter region and nuclear basket protein) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Component of the nuclear pore complex (NPC), a complex required for the trafficking across the nuclear envelope. Functions as a scaffolding element in the nuclear phase of the NPC essential for normal nucleocytoplasmic transport of proteins and mRNAs, plays a role in the establishment of nuclear-peripheral chromatin compartmentalization in interphase, and in the mitotic spindle checkpoint signaling during mitosis. Involved in the quality control and retention of unspliced mRNAs in the nucleus; in association with NUP153, regulates the nuclear export of unspliced mRNA species bearing constitutive transport element (CTE) in a NXF1- and KHDRBS1-independent manner. Negatively regulates both the association of CTE-containing mRNA with large polyribosomes and translation initiation. Does not play any role in Rev response element (RRE)-mediated export of unspliced mRNAs. Implicated in nuclear export of mRNAs transcribed from heat shock gene promoters; associates both with chromatin in the HSP70 promoter and with mRNAs transcribed from this promoter under stress-induced conditions. Plays a limited role in the regulation of nuclear protein export. Modulates the nucleocytoplasmic transport of activated MAPK1/ERK2 and huntingtin/HTT

and may serve as a docking site for the XPO1/CRM1-mediated nuclear export complex. Also plays a role as a structural and functional element of the perinuclear chromatin distribution; involved in the formation and/or maintenance of NPC-associated perinuclear heterochromatin exclusion zones (HEZs). Finally, acts as a spatial regulator of the spindle-assembly checkpoint (SAC) response ensuring a timely and effective recruitment of spindle checkpoint proteins like MAD1L1 and MAD2L1 to unattached kinetochore during the metaphase-anaphase transition before chromosome congression. Its N-terminus is involved in activation of oncogenic kinases (By similarity).

Subcellular Localization: Nucleus . Nucleus membrane ; Peripheral membrane protein ; Nucleoplasmic side . Nucleus envelope . Nucleus, nuclear pore complex . Cytoplasm . Cytoplasm, cytoskeleton, spindle . Chromosome, centromere, kinetochore . Nucleus membrane ; Peripheral membrane protein ; Cytoplasmic side . Note=Detected as discrete intranuclear foci with IFI204 (By similarity). In interphase, localizes to the nucleoplasmic side of the nuclear pore complex (NPC) core structure, forming a fibrous structure called the nuclear basket. Detected exclusively to the cytoplasmic margin of NPC (By similarity). Docking to the inner nucleoplasmic side of the NPC is mediated through binding to nucleoporins. Anchored by NUP153 to the NPC. The assembly of the NPC is a stepwise process in which Trp-containing peripheral structures assemble after other components, including p62. Detected as filaments that emanate from the nuclear basket of the NPC and extend to the nucleolus to delineate a chromatin-free network extending from the nuclear envelope to the perinucleolar region. Detected in diffuse and discrete spheroidal intranuclear foci. Nucleocytoplasmic shuttling protein imported into the nucleus in a XPO1/CRM1- and Importin alpha/Importin beta receptor-dependent manner. Remains localized to the nuclear membrane after poliovirus (PV) infection. During mitosis, remains associated with the nuclear envelope until prometaphase. Associated with the mitotic spindle from late prometaphase until anaphase. Reorganized during mitosis in a viscous and dynamic nuclear-derived spindle matrix that embeds the microtubule spindle apparatus from pole to pole in a microtubule-independent manner. Recruited to the reforming nuclear envelope during telophase and cytokinesis. Detected at kinetochores during prometaphase. Colocalizes with MAD2L1 in the spindle matrix but not at kinetochore. Colocalizes with dynein, dynactin, tubulin at kinetochore during the metaphase-anaphase transition. Colocalizes with DYNLL1 at the mitotic spindle (By similarity).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.