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# TPR Antibody
**Rabbit Polyclonal Antibody**
**Catalog # ABV10601**

## Specification

### TPR Antibody - Product Information

| | |
|---|---|
| Application | **WB** |
| Primary Accession | P12270 |
| Other Accession | NP_003283.1 |
| Reactivity | **Human** |
| Host | **Rabbit** |
| Clonality | **Polyclonal** |
| Isotype | **Rabbit IgG** |
| Calculated MW | **267293** |

### TPR Antibody - Additional Information

**Gene ID** 7175

Application & Usage

**Western blotting (1:500 – 1:2000). However, the optimal concentrations should be determined individually. HeLa and 293T cell lysates can be used as positive controls. The antibody recognizes the TPR of human origin. Reactivity to other species has not been tested.**

**Other Names**
TPR, Translocated Promoter Region

**Target/Specificity**
TPR

**Antibody Form**
Liquid

**Appearance**
Colorless liquid

**Formulation**
100 µl affinity purified rabbit polyclonal antibody in phosphate-buffered saline (PBS) containing 30% glycerol, 1% BSA and 0.02% thimerosal.

**Handling**
The antibody solution should be gently mixed before use.

**Reconstitution & Storage**
-20 °C

**Background Descriptions**

**Precautions**
TPR Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## TPR Antibody - Protein Information

**Name** TPR

**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. 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. According to some authors, plays a limited role in the regulation of nuclear protein export (PubMed:<a href="http://www.uniprot.org/citations/22253824" target="_blank">22253824</a>, PubMed:<a href="http://www.uniprot.org/citations/11952838" target="_blank">11952838</a>). 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.

**Cellular Location**
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 (PubMed:7798308). 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 (PubMed:18981471). Colocalizes with MAD2L1 in the spindle matrix but not at kinetochore (PubMed:19273613) Colocalizes with dynein, dynactin, tubulin at kinetochore during the metaphase-anaphase transition. Colocalizes with DYNLL1 at the mitotic

spindle. {ECO:0000250, ECO:0000269|PubMed:18981471, ECO:0000269|PubMed:19273613, ECO:0000269|PubMed:7798308}

**Tissue Location**
Expressed in esophagus, ovary, liver, skin, smooth muscles, cerebrum and fetal cerebellum (at protein level). Highest in testis, lung, thymus, spleen and brain, lower levels in heart, liver and kidney.

## TPR Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

## TPR Antibody - Images

## TPR Antibody - Background

The vertebrate nuclear pore complex (NPC) is a macromolecular assembly of protein subcomplexes forming a structure of eightfold radial symmetry. The NPC core consists of globular subunits sandwiched between two coaxial ring-like structures of which the ring facing the nuclear interior is capped by a fibrous structure called the nuclear basket. The assembly of the NPC is a stepwise process in which Trp-containing peripheral structures assemble after other components, including p62. TPR localizes to intranuclear filaments of the NPC, and is a component of the cytoplasmic fibrils of the NPC implicated in nuclear protein import. Experimental data suggest that TPR is tethered to intranuclear filaments of the NPC by its coiled coil domain leaving the acidic COOH terminus free to interact with soluble transport factors and mediate export of macromolecules from the nucleus.