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# Anti-RAN Antibody

Catalog # AP51465

## Product Information

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|---|---|
| **Application** | WB, IHC |
| **Primary Accession** | P62826 |
| **Reactivity** | Human, Mouse, Rat, Bovine, Dog, Mk |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Calculated MW** | 24423 |

## Additional Information

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| **Gene ID** | 5901 |
| **Other Names** | ARA24; GTP-binding nuclear protein Ran; Androgen receptor-associated protein 24; GTPase Ran; Ras-like protein TC4; Ras-related nuclear protein |
| **Target/Specificity** | KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human RAN. The exact sequence is proprietary. |
| **Dilution** | WB~~ 1:8000 IHC~~1:100~500 |
| **Format** | Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide. |
| **Storage** | Store at -20 °C.Stable for 12 months from date of receipt |

## Protein Information

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| **Name** | RAN |
| **Synonyms** | ARA24 {ECO:0000303\|PubMed:10400640} |
| **Function** | GTPase involved in nucleocytoplasmic transport, participating both to the import and the export from the nucleus of proteins and RNAs (PubMed:10400640, PubMed:17209048, PubMed:26272610, PubMed:27306458, PubMed:8276887, PubMed:8636225, PubMed:8692944, PubMed:8896452, PubMed:9351834, PubMed:9428644, PubMed:9822603). Switches between a cytoplasmic GDP- and a nuclear GTP-bound state by nucleotide exchange and GTP hydrolysis (PubMed:11336674, PubMed:26272610, PubMed:29040603, PubMed:7819259, PubMed:8636225, PubMed:8692944, PubMed:8896452, PubMed:9351834, PubMed:9428644, PubMed:9822603). Nuclear import receptors such as importin beta bind their substrates only in the absence of GTP-bound RAN and release them upon direct interaction with GTP-bound RAN, while export receptors behave in the opposite way. Thereby, RAN controls cargo loading and release by transport |

receptors in the proper compartment and ensures the directionality of the transport (PubMed:8896452, PubMed:9351834, PubMed:9428644). Interaction with RANBP1 induces a conformation change in the complex formed by XPO1 and RAN that triggers the release of the nuclear export signal of cargo proteins (PubMed:20485264). RAN (GTP-bound form) triggers microtubule assembly at mitotic chromosomes and is required for normal mitotic spindle assembly and chromosome segregation (PubMed:10408446, PubMed:29040603). Required for normal progress through mitosis (PubMed:12194828, PubMed:29040603, PubMed:8421051). The complex with BIRC5/survivin plays a role in mitotic spindle formation by serving as a physical scaffold to help deliver the RAN effector molecule TPX2 to microtubules (PubMed:18591255). Acts as a negative regulator of the kinase activity of VRK1 and VRK2 (PubMed:18617507). Enhances AR- mediated transactivation. Transactivation decreases as the poly-Gln length within AR increases (PubMed:10400640).

**Cellular Location**

Nucleus. Nucleus envelope. Cytoplasm, cytosol Cytoplasm. Melanosome Note=Predominantly nuclear during interphase (PubMed:10679025, PubMed:12194828, PubMed:8421051). Becomes dispersed throughout the cytoplasm during mitosis (PubMed:12194828, PubMed:8421051). Identified by mass spectrometry in melanosome fractions from stage I to stage IV (PubMed:17081065).

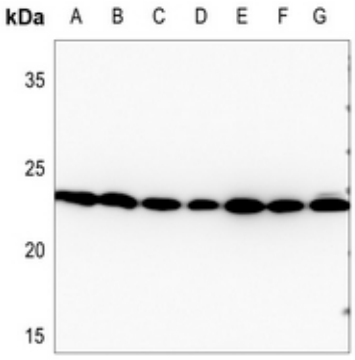
**Tissue Location**

Expressed in a variety of tissues.

## References

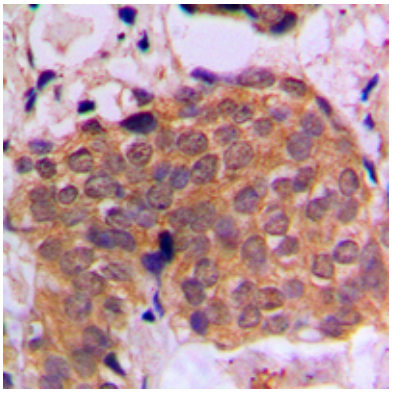

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Zhang Q.-H.,et al.Genome Res. 10:1546-1560(2000).


## Images




Western blot analysis of RAN expression in LOVO (A), Jurkat (B), U2OS (C), mouse lung (D), mouse testis (E), rat lung (F), rat testis (G) whole cell lysates. (Predicted band size: 24 kD; Observed band size: 24 kD)

Immunohistochemical analysis of RAN staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with



haematoxylin and mounted with DPX.

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