

# Anti-RAN Antibody

Catalog # AP96032

## Product Information

|                   |                        |
|-------------------|------------------------|
| Application       | WB, IHC, FC, IF/IC     |
| Primary Accession | <a href="#">P62826</a> |
| Reactivity        | Human, Mouse, Rat, Mk  |
| Host              | Mouse                  |
| Clonality         | Monoclonal             |
| Calculated MW     | 24423                  |

## Additional Information

|                    |                                                                                                                                                |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 | Recombinant fusion protein of human RAN expressed in E. Coli                                                                                   |
| Dilution           | WB~~WB (1/500 - 1/1000) IHC~~1:100~500 FC~~FC (1/100 - 1/200) IF/IC~~N/A                                                                       |
| Format             | Mouse IgG1. Liquid in PBS, 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

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name     | RAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Synonyms | ARA24 {ECO:0000303 PubMed:10400640}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Function | <p>GTPase involved in nucleocytoplasmic transport, participating both to the import and the export from the nucleus of proteins and RNAs (PubMed:<a href="#">10400640</a>, PubMed:<a href="#">17209048</a>, PubMed:<a href="#">26272610</a>, PubMed:<a href="#">27306458</a>, PubMed:<a href="#">8276887</a>, PubMed:<a href="#">8636225</a>, PubMed:<a href="#">8692944</a>, PubMed:<a href="#">8896452</a>, PubMed:<a href="#">9351834</a>, PubMed:<a href="#">9428644</a>, PubMed:<a href="#">9822603</a>). Switches between a cytoplasmic GDP- and a nuclear GTP-bound state by nucleotide exchange and GTP hydrolysis (PubMed:<a href="#">11336674</a>, PubMed:<a href="#">26272610</a>, PubMed:<a href="#">29040603</a>, PubMed:<a href="#">7819259</a>, PubMed:<a href="#">8636225</a>, PubMed:<a href="#">8692944</a>, PubMed:<a href="#">8896452</a>, PubMed:<a href="#">9351834</a>, PubMed:<a href="#">9428644</a>, PubMed:<a href="#">9822603</a>). 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:<a href="#">8896452</a>, PubMed:<a href="#">9351834</a>, PubMed:<a href="#">9428644</a>).</p> |

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](#)).

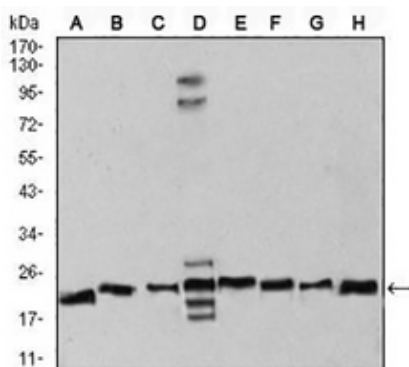
## Cellular Location

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).

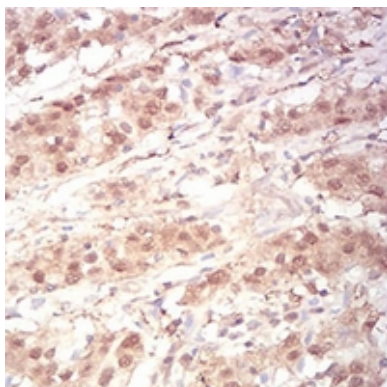
## Tissue Location

Expressed in a variety of tissues.

## Images

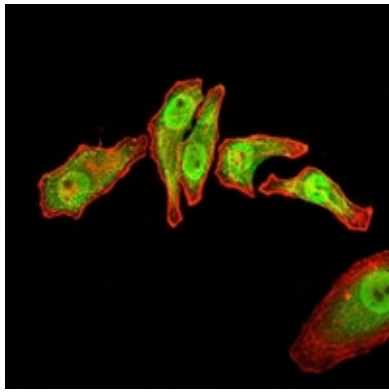


Western blot analysis of RAN expression in Hela (A), NIH/3T3 (B), A431 (C), C6 (D), Jurkat (E), Hela (F), COS7 (G), Jurkat (H) whole cell lysates. (Predicted band size: 24 kD; Observed band size: 24 kD)

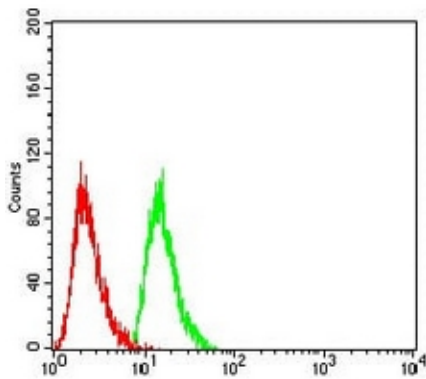


Immunohistochemical analysis of RAN staining in human stomach cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected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

Immunofluorescent analysis of RAN staining in GC7901 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with an



AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).



Flow cytometric analysis of HeLa cells using Anti-RAN Antibody (green) and negative control (red).

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