

**Anti-Ran Picoband Antibody**  
**Catalog # ABO12814****Specification**

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**Anti-Ran Picoband Antibody - Product Information**

Application	IHC
Primary Accession	<a href="#">P62826</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for GTP-binding nuclear protein Ran(RAN) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-Ran Picoband Antibody - Additional Information**

**Gene ID** 5901

**Other Names**

GTP-binding nuclear protein Ran, Androgen receptor-associated protein 24, GTPase Ran, Ras-like protein TC4, Ras-related nuclear protein, RAN, ARA24

**Calculated MW**

24423 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat<br> Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat, <br> <br>

**Subcellular Localization**

Nucleus. Cytoplasm. Melanosome. Nucleus envelope . Predominantly nuclear during interphase. Becomes dispersed throughout the cytoplasm during mitosis. Colocalizes with NEMP1 at the nuclear envelope (By similarity). Identified by mass spectrometry in melanosome fractions from stage I to stage IV. .

**Tissue Specificity**

Expressed in a variety of tissues. .

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

**Immunogen**

E. coli-derived human Ran recombinant protein (Position: A2-L216). Human Ran shares 100% amino acid (aa) sequence identity with both mouse and rat Ran.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross reactivity with other proteins.

**Storage**

**At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.**

**Anti-Ran Picoband Antibody - Protein Information****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](http://www.uniprot.org/citations/10400640), PubMed: [17209048](http://www.uniprot.org/citations/17209048), PubMed: [26272610](http://www.uniprot.org/citations/26272610), PubMed: [27306458](http://www.uniprot.org/citations/27306458), PubMed: [8276887](http://www.uniprot.org/citations/8276887), PubMed: [8636225](http://www.uniprot.org/citations/8636225), PubMed: [8692944](http://www.uniprot.org/citations/8692944), PubMed: [8896452](http://www.uniprot.org/citations/8896452), PubMed: [9351834](http://www.uniprot.org/citations/9351834), PubMed: [9428644](http://www.uniprot.org/citations/9428644), PubMed: [9822603](http://www.uniprot.org/citations/9822603)). Switches between a cytoplasmic GDP- and a nuclear GTP-bound state by nucleotide exchange and GTP hydrolysis (PubMed: [11336674](http://www.uniprot.org/citations/11336674), PubMed: [26272610](http://www.uniprot.org/citations/26272610), PubMed: [29040603](http://www.uniprot.org/citations/29040603), PubMed: [7819259](http://www.uniprot.org/citations/7819259), PubMed: [8636225](http://www.uniprot.org/citations/8636225), PubMed: [8692944](http://www.uniprot.org/citations/8692944), PubMed: [8896452](http://www.uniprot.org/citations/8896452), PubMed: [9351834](http://www.uniprot.org/citations/9351834), PubMed: [9428644](http://www.uniprot.org/citations/9428644), PubMed: [9822603](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/8896452), PubMed: [9351834](http://www.uniprot.org/citations/9351834), PubMed: [9428644](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/20485264), PubMed: [20485264](http://www.uniprot.org/citations/20485264)). RAN (GTP-bound form) triggers microtubule assembly at mitotic chromosomes and is required for normal mitotic spindle assembly and chromosome segregation (PubMed: [10408446](http://www.uniprot.org/citations/10408446), PubMed: [10408446](http://www.uniprot.org/citations/10408446)).

PubMed:<a href="http://www.uniprot.org/citations/29040603" target="\_blank">29040603</a>). Required for normal progress through mitosis (PubMed:<a href="http://www.uniprot.org/citations/12194828" target="\_blank">12194828</a>, PubMed:<a href="http://www.uniprot.org/citations/29040603" target="\_blank">29040603</a>, PubMed:<a href="http://www.uniprot.org/citations/8421051" target="\_blank">8421051</a>). 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:<a href="http://www.uniprot.org/citations/18591255" target="\_blank">18591255</a>). Acts as a negative regulator of the kinase activity of VRK1 and VRK2 (PubMed:<a href="http://www.uniprot.org/citations/18617507" target="\_blank">18617507</a>). Enhances AR- mediated transactivation. Transactivation decreases as the poly-Gln length within AR increases (PubMed:<a href="http://www.uniprot.org/citations/10400640" target="\_blank">10400640</a>).

### 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.

## Anti-Ran Picoband 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 Cytometry](#)
- [Cell Culture](#)

## Anti-Ran Picoband Antibody - Images

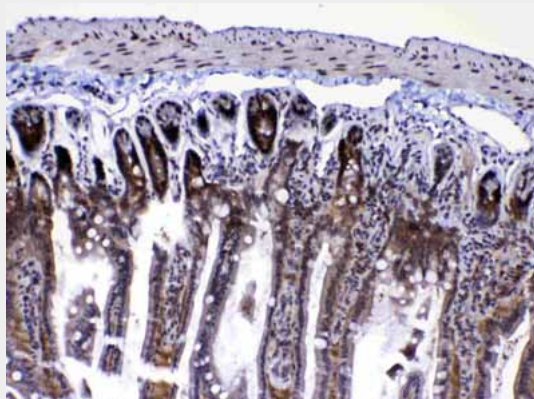
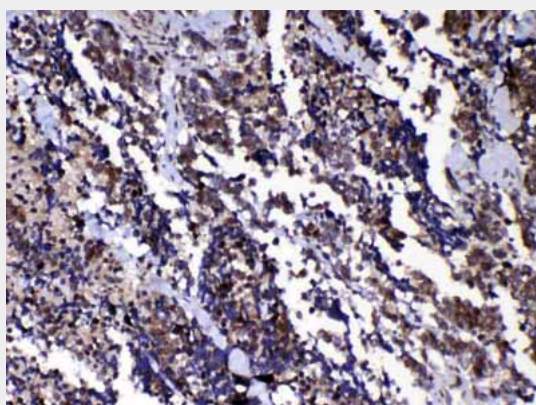
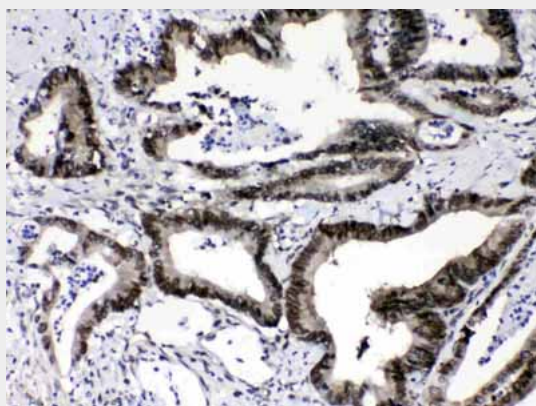
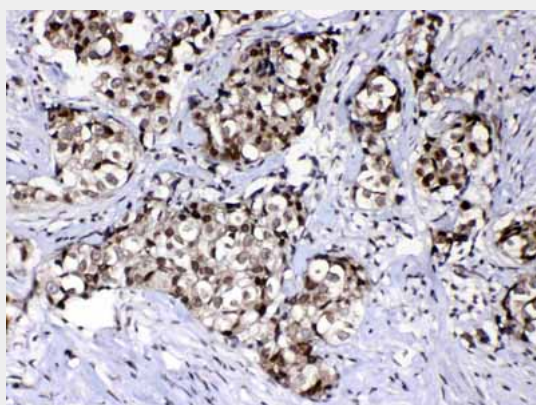
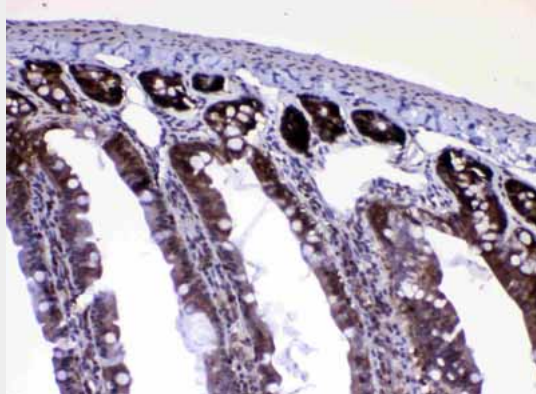
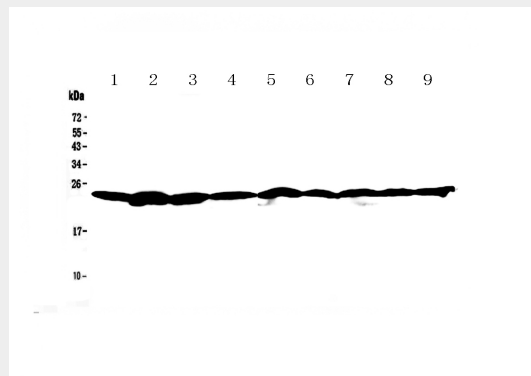


Figure 5. IHC analysis of Ran using anti-Ran antibody (ABO12814).





### Anti-Ran Picoband Antibody - Background

RAN (ras-related nuclear protein) is a small GTP binding protein belonging to the RAS superfamily that is essential for the translocation of RNA and proteins through the nuclear pore complex. The RAN protein is also involved in control of DNA synthesis and cell cycle progression. Nuclear localization of RAN requires the presence of regulator of chromosome condensation 1 (RCC1). Mutations in RAN disrupt DNA synthesis. Because of its many functions, it is likely that RAN interacts with several other proteins. RAN regulates formation and organization of the microtubule network independently of its role in the nucleus-cytosol exchange of macromolecules. RAN could be a key signaling molecule regulating microtubule polymerization during mitosis. RCC1 generates a high local concentration of RAN-GTP around chromatin which, in turn, induces the local nucleation of microtubules. RAN is an androgen receptor (AR) coactivator that binds differentially with different lengths of polyglutamine within the androgen receptor. Polyglutamine repeat expansion in the AR is linked to Kennedy's disease (X-linked spinal and bulbar muscular atrophy). RAN coactivation of the AR diminishes with polyglutamine expansion within the AR, and this weak coactivation may lead to partial androgen insensitivity during the development of Kennedy's disease.