

RAN Antibody

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP51465

Product Information

Application	WB
Primary Accession	P62826
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	24423

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
Target/Specificity	KLH conjugated synthetic peptide derived from human RAN
Dilution	WB~~ 1:8000
Format	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
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: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</p>

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.

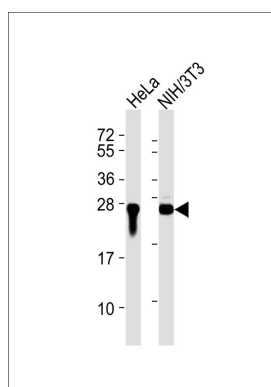
Background

GTP-binding protein involved in nucleocytoplasmic transport. Required for the import of protein into the nucleus and also for RNA export. Involved in chromatin condensation and control of cell cycle (By similarity). 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. Acts as a negative regulator of the kinase activity of VRK1 and VRK2.

References

Drivas G.T.,et al.Mol. Cell. Biol. 10:1793-1798(1990).
Matsumoto T.,et al.Cell 66:347-360(1991).
Ren M.,et al.J. Cell Biol. 120:313-323(1993).
Hsiao P.-W.,et al.J. Biol. Chem. 274:20229-20234(1999).
Zhang Q.-H.,et al.Genome Res. 10:1546-1560(2000).

Images



All lanes : Anti-RAN Antibody at 1:8000 dilution Lane 1: HeLa whole cell lysates Lane 2: NIH/3T3 whole cell lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 24 kDa Blocking/Dilution buffer: 5% NFDm/TBST.

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