abcam

**ab124909**

# Anti-14-3-3 Theta + Tau antibody [EPR5123]

Recombinant | RabMAb | 20ul selling size

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 9.85% Tris glycine |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR5123 |
| **Purification technique** | Affinity purification Protein A |
| **Dissociation constant** | 6.09 x $10^{-10}$ M |
| **Concentration** | 0.86 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## IP

### Not recommended

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/10000 - 1/50000 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## IHC-P

### Not recommended

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 - 1/1000 |
| **Notes** | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## Target data

See full target information MAPT

| | |
|---|---|
| **Function** | Promotes microtubule assembly and stability, and might be involved in the establishment and maintenance of neuronal polarity (PubMed:21985311). The C-terminus binds axonal microtubules while the N-terminus binds neural plasma membrane components, suggesting that tau functions as a linker protein between both (PubMed:21985311, PubMed:32961270). Axonal polarity is predetermined by TAU/MAPT localization (in the neuronal cell) in the domain of the cell body defined by the centrosome. The short isoforms allow plasticity of the cytoskeleton whereas the longer isoforms may preferentially play a role in its stabilization. |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Storage information** | Stable for 12 months at -20°C |

## Notes

**Patented technology**
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | 14-3-3 Theta also known as 14-3-3 protein theta is a member of the 14-3-3 protein family which consists of seven distinct isoforms in humans. It acts as an adaptor or scaffold aiding in the regulation of signal transduction pathways by binding to |

| | |
|---|---|
| | phosphoserine-containing proteins. The protein typically has a molecular mass of approximately 28-32 kDa. It is abundantly expressed in various tissues with a high concentration in the brain where it interacts with a number of neuronal proteins. |
| **Biological function summary** | 14-3-3 Theta plays a significant role in cell cycle regulation apoptosis and brain development. It often forms part of larger protein complexes acting as a bridge to facilitate interactions between different proteins. The protein aids in maintaining cellular homeostasis and mediates various signal transduction processes by changing the conformation of its binding partners which influences their activity. |
| **Pathways** | 14-3-3 Theta is actively involved in the MAPK/ERK and PI3K/AKT pathways which are critical for cell proliferation differentiation and survival. Through these pathways the protein interacts with a variety of partners including thr-308-phosphorylated Akt and Raf kinases. 14-3-3 Theta's ability to bind different phosphorylated targets enables it to influence diverse cellular processes within these pathways. |
| **Associated diseases and disorders** | 14-3-3 Theta has been linked to neurodegenerative diseases such as Alzheimer's and Parkinson's. Notably its interaction with tau protein plays an important role in Alzheimer's disease as abnormal phosphorylation and aggregation of tau is a characteristic of the disorder. Furthermore disruptions in 14-3-3 Theta function have connections to cancer by interacting with signaling proteins like the tumor suppressor p53 leading to altered cell growth and survival. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

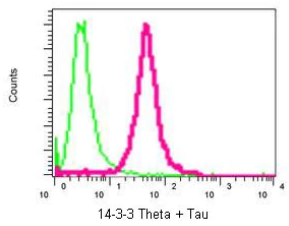
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

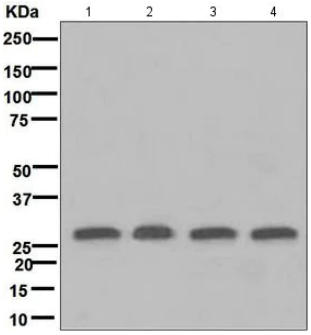
## 4 product images




### Flow Cytometry (Intracellular) - Anti-14-3-3 Theta + Tau antibody [EPR5123] (ab124909)

14-3-3 Theta + Tau Flow Cytometry (Intracellular) staining using rabbit Anti-14-3-3 Theta + Tau antibody

Intracellular flow cytometric analysis of permeablized A549 cells using ab124909 at 1/500 dilution (red) or a rabbit IgG negative control (green).




### Western blot - Anti-14-3-3 Theta + Tau antibody [EPR5123] (ab124909)

14-3-3 Theta + Tau Western blot staining using rabbit Anti-14-3-3 Theta + Tau antibody

All lanes:
Western blot - Anti-14-3-3 Theta + Tau antibody [EPR5123] (ab124909) at 1/10000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
293T (Human embryonic kidney epithelial cell) cell lysate at 10 µg

Lane 3:
A549 cell lysate at 10 µg

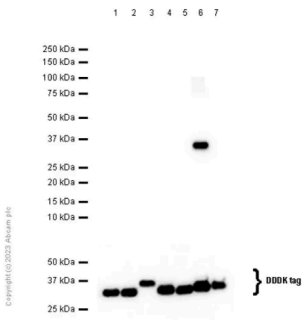
Lane 4:
A431 cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 28 kDa

Observed band size: 28 kDa




### Western blot - Anti-14-3-3 Theta + Tau antibody [EPR5123] (ab124909)

Blocking and dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-14-3-3 Theta + Tau antibody [EPR5123] (ab124909) at 1/1000 dilution

Lane 1:
14-3-3 beta (YWHAB) Human Recombinant Protein 10 ng, with DDDK tagged at 10 ng

Lane 2:
14-3-3 gamma (YWHAG) Human Recombinant Protein 10 ng, with DDDK tagged at 10 ng

Lane 3:

14-3-3 epsilon (YWHAE) Human Recombinant Protein 10 ng, with DDDK tagged at 10 EU/ng

Lane 4:
14-3-3 zeta (YWHAZ) Human Recombinant Protein 10 ng, with DDDK tagged at 10 ng

Lane 5:
14-3-3 eta (YWHAH) Human Recombinant Protein 10 ng, with DDDK tagged at 10 ng

Lane 6:
14-3-3 theta (YWHAQ) Human Recombinant Protein 10 ng, with DDDK tagged at 10 ng

Lane 7:
14-3-3 sigma (SFN) Human Recombinant Protein 10 ng, with DDDK tagged at 10 ng

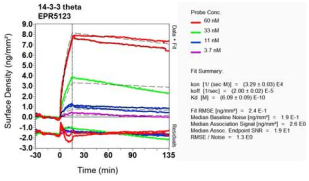
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 28 kDa

Observed band size: 28 kDa

Exposure time: 3s




## OI-RD Scanning - Anti-14-3-3 Theta + Tau antibody [EPR5123] (ab124909)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.