abcam

ab131329

# Anti-NME2 antibody [EPR8351]

Recombinant | RabMAb

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR8351 |
| **Purification technique** | Affinity purification Protein A |
| **Specificity** | The immunogen used to raise this antibody shares 85% homology with human NME1. Cross-reactivity with this protein has not been confirmed experimentally. |
| **Dissociation constant** | $3.35 \times 10^{-10}$ M |
| **Concentration** | 0.111 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## IHC-P

**Tested**

| | |
|---|---|
| **Species** | Human |

| | |
|---|---|
| **Dilution info** | 1/500 |
| **Notes** | **For unpurified use at 1/100 - 1/250.** |

### Not recommended

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

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Chinese hamster |
| **Dilution info** | - |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/1000 |
| **Notes** | **For unpurified use at 1/1000 - 1/10000.** |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | **For unpurified use at 1/1000 - 1/10000.** |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/1000 |

| | |
|---|---|
| **Notes** | **For unpurified use at 1/1000 - 1/10000.** |

### Expected

| | |
|---|---|
| **Species** | Chinese hamster |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/20 |
| **Notes** | For unpurified use at 1/10 - 1/100. ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

### Expected

| | |
|---|---|
| **Species** | Chinese hamster, Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## Target data

See full target information NME2

| | |
|---|---|
| **Function** | Catalyzes the transfer of a gamma-phosphoryl group from a nucleoside triphosphate, mainly ATP, to a nucleoside diphosphate via a ping-pong mechanism involving a phosphohistidine intermediate, therefore contributing to the nucleoside triphosphate homeostasis (PubMed:11121025, PubMed:16313181, PubMed:1851158, PubMed:25679041). Also functions as a histidine protein kinase by transferring the phosphoryl group from the phosphohistidine intermediate to a histidine residue in target proteins (PubMed:17157250, PubMed:20946858). Phosphorylates the GNB1 subunit of heterotrimeric G proteins at 'His-266', generating a high-energy phosphate group that promotes GTP formation and enables receptor-independent activation of heterotrimeric G proteins (By similarity). Also phosphorylates KCNN4 at 'His-358', leading to activation of its intermediate conductance calcium-activated potassium channel activity, Ca(2+) influx, and subsequent activation of B and T cells (PubMed:17157250). Additionally involved in transcriptional regulation through direct DNA binding and chromatin remodeling (PubMed:11121025, PubMed:11694515, PubMed:19033359, |

PubMed:19435876, PubMed:25679041, PubMed:8392752). In this context, functions as a single-stranded DNA binding protein that binds and stabilizes the G-quadruplex (G4) structures within the nuclease hypersensitive element (NHE) III(1) region of the MYC gene promoter, facilitating recruitment of additional single-strand DNA binding proteins and activation of MYC transcription (PubMed:19033359, PubMed:19435876, PubMed:25679041, PubMed:8392752). G4 DNA-binding activity is independent of its nucleoside diphosphate kinase function and recognizes both folded and unfolded G4 structures (PubMed:25679041). With NME1, may regulate acetyl-CoA (AcCoA) usage between histone acetylation and fatty acid synthesis by targeting AcCoA release at ATP-rich, HAT-associated chromatin regions (By similarity). Also negatively regulates Rho activity by interacting with AKAP13/LBC (PubMed:15249197).

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## 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** | NME2 also known as NM23-H2 is a nucleoside diphosphate kinase that is involved in the synthesis of nucleoside triphosphates. With a mass of approximately 17 kDa it plays a role in the energetic metabolism of cells. NME2 is widely expressed in various tissues including the liver heart and brain. Its expression levels indicate its importance in maintaining regular cellular functions. |
| **Biological function summary** | NME2 participates in the regulation of transcription and cellular differentiation. It acts within the context of protein complexes which influence DNA-binding activities required for transcriptional control. NME2 also has roles in the regulation of cell proliferation differentiation and signaling. These activities demonstrate the protein's significance in maintaining normal physiological processes. |
| **Pathways** | NME2 is active in the MAPK/ERK signaling pathway significant in cell growth and differentiation. It interacts with other proteins like ERK2 to modulate downstream signaling cascades. This protein also features in the GTP nucleotide biosynthesis pathway where it cooperates with other kinases for nucleotide metabolism highlighting its important role in cell cycle regulation. |
| **Associated diseases and disorders** | Mutations or altered expression of NME2 link with various cancers including breast and colon cancer. This connection emphasizes its potential role as a biomarker or therapeutic target. The protein also associates with other oncogenes like NME1 together contributing to the metastatic potential of cancer cells. NME2's involvement in chronic conditions like cancer confirms its importance in pathological states where it may influence disease progression or serve as a clinical marker. |

## 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**

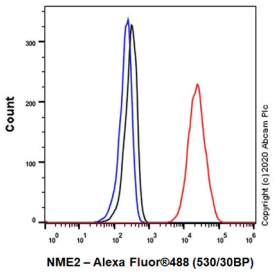
We do not recommend this combination. It is not covered by our product promise.

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.

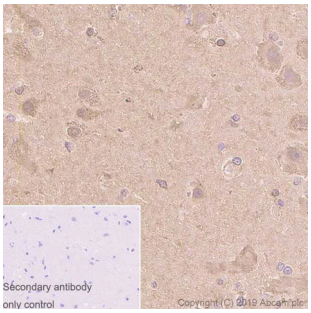
## 8 product images




### Flow Cytometry (Intracellular) - Anti-NME2 antibody [EPR8351] (ab131329)

NME2 Flow Cytometry (Intracellular) staining using rabbit Anti-NME2 antibody

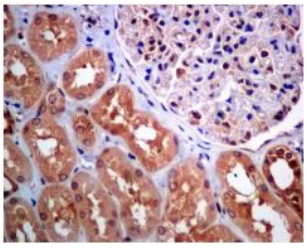
Intracellular Flow Cytometry analysis of HEK-293 (Human embryonickidney epithelial cell) cells labeling NME2 with purified ab131329 at 1/20 dilution (5µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluorr® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).




### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NME2 antibody [EPR8351] (ab131329)

NME2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NME2 antibody

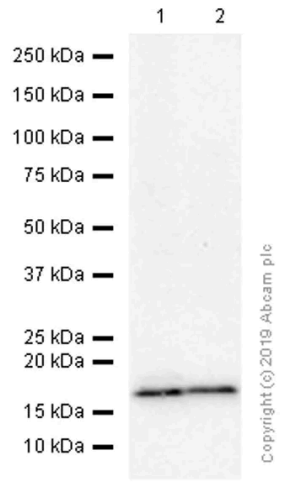
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human cerebrum tissue sections labeling NME2 with purified ab131329 at 1/500 dilution (0.22 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NME2 antibody [EPR8351] (ab131329)

NME2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NME2 antibody

Immunohistochemical analysis of paraffin-embedded Human kidney tissue labelling NME2 with unpurified ab131329 at 1/100 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




## Western blot - Anti-NME2 antibody [EPR8351] (ab131329)

NME2 Western blot staining using rabbit Anti-NME2 antibody

All lanes:
Western blot - Anti-NME2 antibody [EPR8351] (ab131329) at 1/1000 dilution

Lane 1:
293T (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

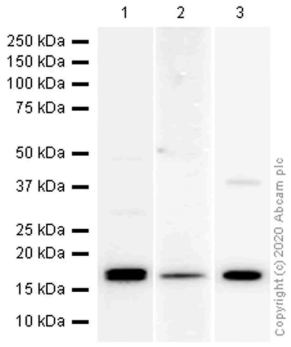
Lane 2:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Secondary

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

Predicted band size: 17 kDa

Observed band size: 17 kDa




## Western blot - Anti-NME2 antibody [EPR8351] (ab131329)

All lanes:
Western blot - Anti-NME2 antibody [EPR8351] (ab131329) at 1/1000 dilution

Lane 1:
Mouse kidney lysate at 15 µg

Lane 2:
Rat kidney lysate at 15 µg

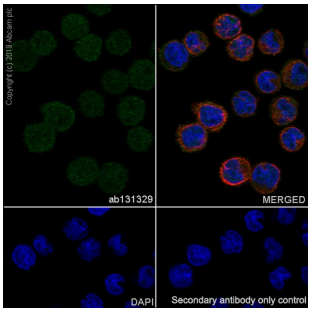
Lane 3:
CHO-S (Chinese hamster ovary epithelial cell) whole cell lysate at 15 µg

Secondary

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

Predicted band size: 17 kDa

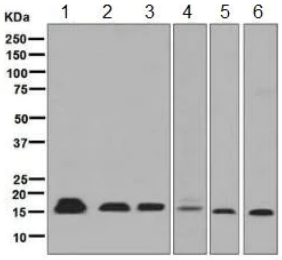
Observed band size: 17 kDa




## Immunocytochemistry/ Immunofluorescence - Anti-NME2 antibody [EPR8351] (ab131329)

NME2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-NME2 antibody

Immunocytochemistry/ Immunofluorescence analysis of CHO-S (Chinese hamster ovary epithelial cell) cells labeling NME2 with purified ab131329 at 1/50 dilution (2.18 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% TritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/mL). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/mL) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.




## Western blot - Anti-NME2 antibody [EPR8351] (ab131329)

All lanes:
Western blot - Anti-NME2 antibody [EPR8351] (ab131329) at 1/1000 dilution

Lane 1:
LnCaP cell lysate at 10 µg

Lane 2:
PC-12 cell lysate at 10 µg

Lane 3:
CHO cell lysate at 10 µg

Lane 4:
293T cell lysate at 10 µg

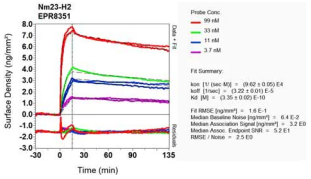
Lane 5:
Human spleen lysate at 10 µg

Lane 6:
Human thyroid lysate at 10 µg

Secondary

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

Predicted band size: 17 kDa




## OI-RD Scanning - Anti-NME2 antibody [EPR8351] (ab131329)

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.

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