abcam

# ab322111

# Anti-OTX2 antibody [RM1205]

Recombinant | RabMAb | 20ul selling size

## 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** | Multiclonal |
| **Immunogens** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | RM1205 |
| **Purification technique** | Affinity purification Protein A |
| **Specificity** | Unsuitable for rat IHC-P.<br>Unsuitable for human/rat IP. |
| **Concentration** | 0.498 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/5000 |

| | |
|---|---|
| **Notes** | - |

### Expected

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

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 |
| **Notes** | - |

### Expected

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

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/20000 |
| **Notes** | Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. |

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/20000 |
| **Notes** | Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. |

### Not recommended

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

## IP

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/30 |
| **Notes** | - |

### Not recommended

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

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/1000 |
| **Notes** | - |

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

## IHC-Fr

### Not recommended

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

## Target data

See full target information OTX2

| | |
|---|---|
| **Function** | Transcription factor probably involved in the development of the brain and the sense organs. Can bind to the bicoid/BCD target sequence (BTS): 5'-TCTAATCCC-3'. |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Blue Ice |
| **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

**What are recombinant multiclonals?**
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

**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.

## Supplementary info

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

| | |
|---|---|
| **Activity summary** | Otx2 also known as Orthodenticle homeobox 2 is a transcription factor involved in the regulation of gene expression. With a mass of approximately 34 kDa it expresses mainly in the brain and eyes during embryonic development. Otx2 plays a central role in early patterning of the head and is essential for the development of structures such as the brain and retina. During adulthood its expression continues although in a more restricted manner within specific regions of the brain. |
| **Biological function summary** | Otx2 regulates the expression of genes necessary for cell differentiation and organ development. It functions as part of transcriptional complexes that control specific patterns of development in the central nervous system. This protein helps in maintaining the regional identity of cells ensuring the proper formation and function of neural tissues. By influencing key developmental processes Otx2 shapes the intricate architecture of the brain and contributes to its complexity. |
| **Pathways** | Otx2 integrates into the Wnt signaling and Hedgehog pathways which are critical for early embryonic development. It interacts with proteins such as Pax6 and En1 within these pathways to modulate developmental signals and maintain proper cellular functions. Through precise regulation of these pathways Otx2 ensures coordinated developmental processes that establish proper tissue and organ formation. |
| **Associated diseases and disorders** | Otx2 plays an important role in certain developmental eye disorders and brain structural defects. Mutations or malfunctions in Otx2 expression can lead to conditions such as anophthalmia or microphthalmia and pituitary gland abnormalities. Otx2's interplay with proteins like Pax6 is significant in these disorders as disruptions in their functions can result in profound developmental consequences highlighting the importance of Otx2 in ocular and neurological health. |

## 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.

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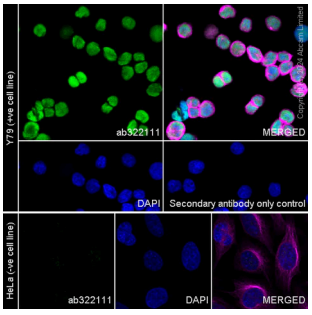
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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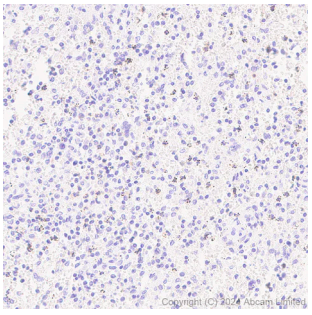
## 14 product images




### Immunocytochemistry/ Immunofluorescence - Anti-OTX2 antibody [RM1205] (ab322111)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Y79 (human retinoblastoma cell) cells labelling OTX2 with ab322111 at 1/500 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Confocal image showing nuclear staining in Y79 cell line (shown in green). The counterstain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue). Negative control: Hela (PMID: 12559959). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Magenta). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution.

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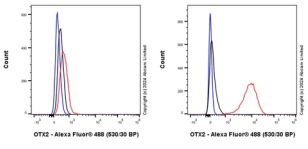


### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OTX2 antibody [RM1205] (ab322111)

OTX2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human spleen tissue using rabbit Anti-OTX2 antibody

Immunohistochemical analysis of paraffin-embedded Human spleen tissue labeling OTX2 with ab322111 at 1/20000 (0.025 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on human spleen. The section was incubated with ab322111 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.

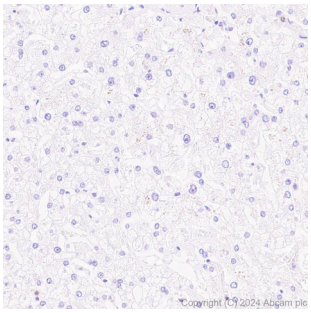
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### Flow Cytometry (Intracellular) - Anti-OTX2 antibody [RM1205] (ab322111)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervical adenocarcinoma epithelial cell, Left) / Y79 (human retinoblastoma cell, Right) cells labelling OTX2 with ab322111 at 1/5000 dilution (0.01 ug)/Red compared with a Rabbit

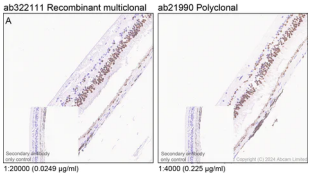
monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.
Negative control: HeLa (PMID: 12559959).




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OTX2 antibody [RM1205] (ab322111)

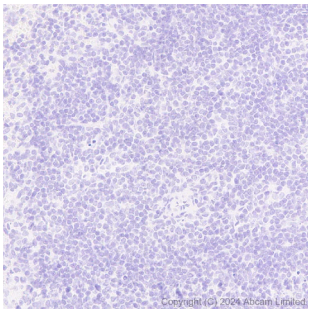
OTX2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver tissue using rabbit Anti-OTX2 antibody

Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling OTX2 with ab322111 at 1/20000 (0.025 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on human liver. The section was incubated with ab322111 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OTX2 antibody [RM1205] (ab322111)

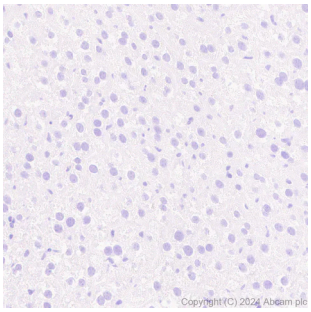
Immunohistochemical analysis of paraffin-embedded Human retina tissue labeling OTX2 with ab322111 at 1/20000 (0.025 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human retina in (A) ab322111 and (B) ab21990. The image on (A) ab322111 is applied with Anti-OTX2 antibody at 1/20000 dilution and (B) ab21990 is applied with Anti-OTX2 antibody at 1/4000 dilution. The section was incubated with ab322111 or ab21990 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OTX2 antibody [RM1205] (ab322111)

OTX2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse spleen tissue using rabbit Anti-OTX2 antibody

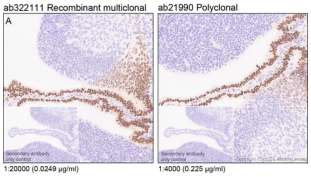
Immunohistochemical analysis of paraffin-embedded Mouse spleen tissue labeling OTX2 with ab322111 at 1/20000 (0.025 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on mouse spleen. The section was incubated with ab322111 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



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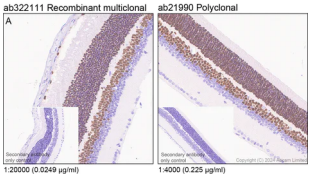
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Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling OTX2 with ab322111 at 1/20000 (0.025 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on mouse liver. The section was incubated with ab322111 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OTX2 antibody [RM1205] (ab322111)

Immunohistochemical analysis of paraffin-embedded Mouse choroid plexus tissue labeling OTX2 with ab322111 at 1/20000 (0.025 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse choroid plexus in (A) ab322111 and (B) ab21990. The image on (A) ab322111 is applied with Anti-OTX2 antibody at 1/20000 dilution and (B) ab21990 is applied with Anti-OTX2 antibody at 1/4000 dilution. The section was incubated with ab322111 or ab21990 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



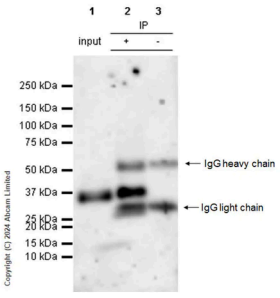

## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OTX2 antibody [RM1205] (ab322111)

Immunohistochemical analysis of paraffin-embedded Mouse retina tissue labeling OTX2 with ab322111 at 1/20000 (0.025 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse retina in (A) ab322111 and (B) ab21990. The image on (A) ab322111 is applied with Anti-OTX2 antibody at 1/20000 dilution and (B) ab21990 is applied with Anti-OTX2 antibody at 1/4000 dilution. The section was incubated with ab322111 or ab21990 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OTX2 antibody [RM1205] (ab322111)

Immunohistochemical analysis of paraffin-embedded Mouse E14.5 tissue labeling OTX2 with ab322111 at 1/20000 (0.025 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse E14.5. The section was incubated with ab322111 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.




## Immunoprecipitation - Anti-OTX2 antibody [RM1205] (ab322111)

OTX2 was immunoprecipitated from 0.35 mg Mouse retina tissue lysate with ab322111 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab322111 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.
**Lane 1:** Mouse retina tissue lysate

**Lane 2:** ab322111 at 1/30 IP in Mouse retina tissue lysate

**Lane 3:** Rabbit monoclonal IgG (ab172730) instead of ab322111 in mouse retina tissue lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

This blot was developed using a high sensitivity ECL substrate. The high-sensitivity ECL substrate used allows for the detection of proteins in the mid-femtogram range.

All lanes:
Immunoprecipitation - Anti-OTX2 antibody [RM1205] (ab322111) at 1/30 dilution

Lane 1:
Mouse retina tissue lysate at 10 µg

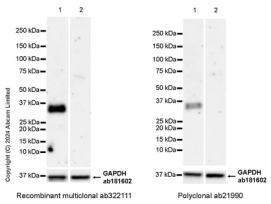
Lane 2:
Immunoprecipitation at 10 µg

Secondary

All lanes:
ab322111 at 1/30 IP in Mouse retina tissue lysate at 1/5000 dilution

Developed using the ECL technique.

Exposure time: 119s




## Western blot - Anti-OTX2 antibody [RM1205] (ab322111)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Negative control: HeLa (PMID: 12559959)

Anti-OTX2 antibody (ab322111, recombinant monoclonal) showed stronger band than Anti-Otx1 + Otx2 antibody (ab21990, polyclonal) with human samples.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.
All lanes:
Western blot - Anti-OTX2 antibody [RM1205] (ab322111) at 1/1000 dilution

Lane 1:
Y79 (human retinoblastoma cell) whole cell lysate at 20 µg

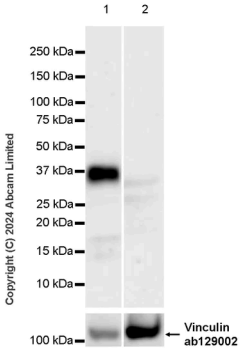
Lane 2:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 32 kDa, 36 kDa

Exposure time: 180s




## Western blot - Anti-OTX2 antibody [RM1205] (ab322111)

OTX2 Western blot staining using rabbit Anti-OTX2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Negative control: spleen

The membrane was incubated with ab322111 at 4☒ overnight.

In Western blot, Anti-Vinculin antibody [EPR8185] (ab129002) staining at 1/10000 dilution.

All lanes:
Western blot - Anti-OTX2 antibody [RM1205] (ab322111) at 1/1000 dilution

Lane 1:
Mouse retina tissue lysate at 20 µg

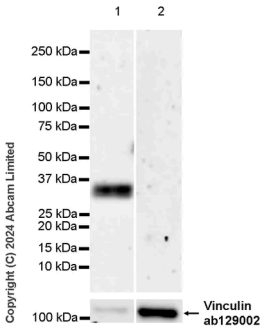
Lane 2:
Mouse spleen tissue lysate at 20 µg

Secondary

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

Observed band size: 36 kDa, 124 kDa

Exposure time: 70s




# Western blot - Anti-OTX2 antibody [RM1205] (ab322111)

OTX2 Western blot staining using rabbit Anti-OTX2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Negative control: spleen

In Western blot, Anti-Vinculin antibody [EPR8185] (ab129002) staining at 1/10000 dilution.

All lanes:
Western blot - Anti-OTX2 antibody [RM1205] (ab322111) at 1/1000 dilution

Lane 1:
Rat retina tissue lysate at 20 µg

Lane 2:
Rat spleen tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 32 kDa, 124 kDa

Exposure time: 180s

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