abcam

# ab193080

# Anti-LSD2 / AOF1 antibody [EPR18508]

Recombinant | RabMAb | KO Validated | 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** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR18508 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.772 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

### IP

#### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/80 |
| **Notes** | - |

#### Expected

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

## WB

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/2000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/2000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/2000 |
| **Notes** | - |

## ICC/IF

### Tested

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

### Expected

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

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | Purified format. |

### Expected

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

## Target data

See full target information KDM1B

**Function** Histone demethylase that demethylates 'Lys-4' of histone H3, a specific tag for epigenetic transcriptional activation, thereby acting as a corepressor. Required for de novo DNA methylation of a subset of imprinted genes during oogenesis. Acts by oxidizing the substrate by FAD to generate the corresponding imine that is subsequently hydrolyzed. Demethylates both mono- and di-methylated 'Lys-4' of histone H3. Has no effect on tri-methylated 'Lys-4', mono-, di- or tri-methylated 'Lys-9', mono-, di- or tri-methylated 'Lys-27', mono-, di- or tri-methylated 'Lys-36' of histone H3, or on mono-, di- or tri-methylated 'Lys-20' of histone H4. Alone, it is unable to demethylate H3K4me on nucleosomes and requires the presence of GLYR1 to achieve such activity, they form a multifunctional enzyme complex that modifies transcribed chromatin and facilitates Pol II transcription through nucleosomes (PubMed:30970244).

## 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** | LSD2 also known as AOF1 is a lysine-specific demethylase enzyme with a mass of about 105 kDa. This protein mainly functions by removing methyl groups from lysine residues on histone proteins thereby affecting chromatin structure and gene expression. LSD2 is expressed in various tissues with high levels in the liver and brain. The enzyme plays a significant role in regulating gene activity influencing many biological processes. |
| **Biological function summary** | LSD2 impacts gene expression by altering the epigenetic state of chromatin. It is not part of a well-defined large multiprotein complex allowing LSD2 to directly interact with histones. Through its demethylase activity it modulates the transcriptional regulation impacting cellular differentiation and proliferation. This makes it an important factor in maintaining cellular homeostasis. |
| **Pathways** | LSD2 is involved in histone modification processes particularly through the demethylation of H3K4me1 and H3K4me2 marks. These changes are important in the regulation of gene expression patterns. LSD2 often interacts with the REST corepressor complex affecting the expression of genes involved in neural development and function. It plays a role in pathways related to cellular stress responses and metabolic regulation highlighting its importance in cellular adaptation mechanisms. |
| **Associated diseases and disorders** | LSD2 has been implicated in cancer and neurological disorders. Alterations in its expression and activity are associated with certain types of cancers such as breast cancer where it affects tumor growth and progression by influencing gene expression patterns. In neurological contexts LSD2's dysregulation impacts neural circuitry and cognitive functions which can be linked to disorders like Alzheimer's disease. In these conditions LSD2 interacts with proteins such as SIRT1 influencing cellular processes that contribute to disease pathology. |

## 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**

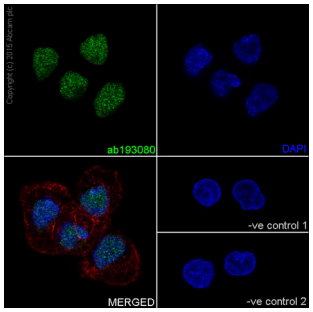
We do not recommend this combination. It is not covered by our product promise.

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.

## 9 product images




### Immunocytochemistry/ Immunofluorescence - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

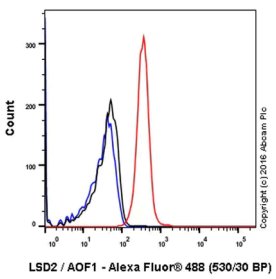
LSD2 / AOF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-LSD2 / AOF1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized A431 (Human epidermoid carcinoma) cells labeling LSD2 / AOF1 with ab193080 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing nuclear staining on A431 cell line.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution (red).

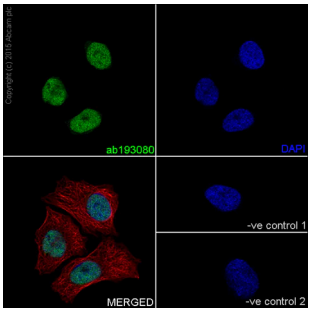
The negative controls are as follows:-
-ve control 1: ab193080 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/1000 dilution.




## Flow Cytometry (Intracellular) - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

LSD2 / AOF1 Flow Cytometry (Intracellular) staining using rabbit Anti-LSD2 / AOF1 antibody

Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labelling LSD2 / AOF1 antibody (red) with purified ab193080 at a dilution of 1/70. Goat anti rabbit IgG (Alexa Fluor® 488) was used as the secondary antibody at 1/2000. Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Isotype control antibody was Rabbit monoclonal IgG (black). The blue line shows cells without incubation with primary antibody and secondary antibody.




## Immunocytochemistry/ Immunofluorescence - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

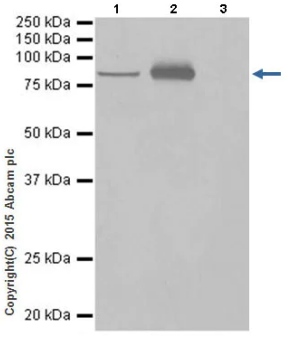
LSD2 / AOF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-LSD2 / AOF1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling LSD2 / AOF1 with ab193080 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing nuclear staining on HeLa cell line.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab193080 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/1000 dilution.




## Immunoprecipitation - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

LSD2 / AOF1 was immunoprecipitated from 1mg of K562 (Human chronic myelogenous leukemia cells from bone marrow) whole cell lysate with ab193080 at 1/80 dilution.
Lane 1: K562 whole cell lysate 10ug (Input).

Lane 2: ab193080 IP in K562 whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab193080 in K562 whole cell lysate.

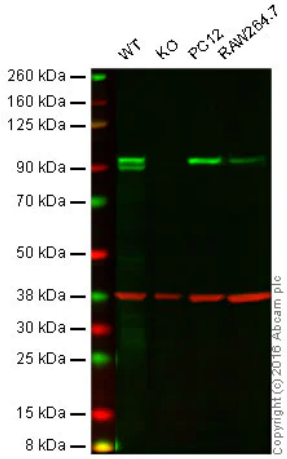
Western blot was performed from the immunoprecipitate using ab193080 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500.

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

Exposure time: 8 seconds.

All lanes:
Immunoprecipitation - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

Predicted band size: 92 kDa



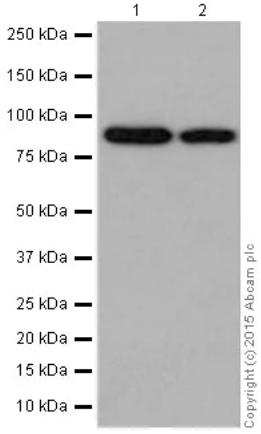

## Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

LSD2 / AOF1 Western blot staining using rabbit Anti-LSD2 / AOF1 antibody

**Lane 1:** Wild-type HAP1 cell lysate (20 µg)
**Lane 2:** LSD2 / AOF1 knockout HAP1 cell lysate (20 µg)
**Lane 3:** PC12 cell lysate (20 µg)
**Lane 4:** Raw264.7 cell lysate (20 µg)
**Lanes 1 - 4:** Merged signal (red and green). Green - ab193080 observed at 95 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab193080 was shown to specifically react with LSD2 / AOF1 when LSD2 / AOF1 knockout samples were used. Wild-type and LSD2 / AOF1 knockout samples were subjected to SDS-PAGE. ab193080 and ab8245 (loading control to GAPDH) were diluted at 1/2000 and 1/10 000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10 000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

Predicted band size: 92 kDa




## Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

LSD2 / AOF1 Western blot staining using rabbit Anti-LSD2 / AOF1 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080) at 1/2000 dilution

Lane 1:
Human fetal brain lysate at 10 µg

Lane 2:
Human fetal heart lysate at 10 µg

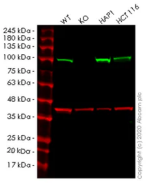
Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 92 kDa

Observed band size: 92 kDa

Exposure time: 3min



## Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

LSD2 / AOF1 Western blot staining using rabbit Anti-LSD2 / AOF1 antibody

**Lanes 1-4:** Merged signal (red and green). Green - ab193080 observed at 95 kDa. Red - loading control ab8245 observed at 36 kDa.
ab193080 Anti-LSD2 / AOF1 antibody [EPR18508] was shown to specifically react with LSD2 / AOF1 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab265969 (knockout cell lysate ab258016) was used. Wild-type and LSD2 / AOF1 knockout samples were subjected to SDS-PAGE. ab193080 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated at room temperature for 2. 5 hours at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human KDM1B (LSD2 / AOF1) knockout HeLa cell lysate (ab258016) at 20 µg

Lane 3:
HAP1 cell lysate at 20 µg

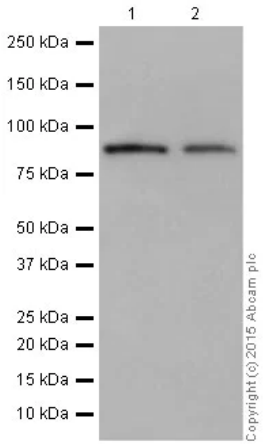
Lane 4:
HCT116 cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 92 kDa

Observed band size: 95 kDa




## Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

LSD2 / AOF1 Western blot staining using rabbit Anti-LSD2 / AOF1 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080) at 1/2000 dilution

Lane 1:
NIH/3T3 (Mouse embyro fibroblast cells) cell lysate at 20 µg

Lane 2:
Mouse thymus lysate at 20 µg

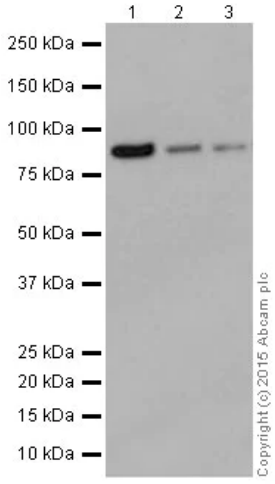
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 92 kDa

Observed band size: 92 kDa

Exposure time: 3min




## Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080)

LSD2 / AOF1 Western blot staining using rabbit Anti-LSD2 / AOF1 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-LSD2 / AOF1 antibody [EPR18508] (ab193080) at 1/2000 dilution

Lane 1:
C6 (Rat glial tumor cells) cell lysate at 10 µg

Lane 2:
RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) cell lysate at 10 µg

Lane 3:
PC-12 (Rat adrenal gland pheochromocytoma) cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/1000 dilution

Predicted band size: 92 kDa

Observed band size: 92 kDa

Exposure time: 3min

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