SourceData_Gel_Fig 1

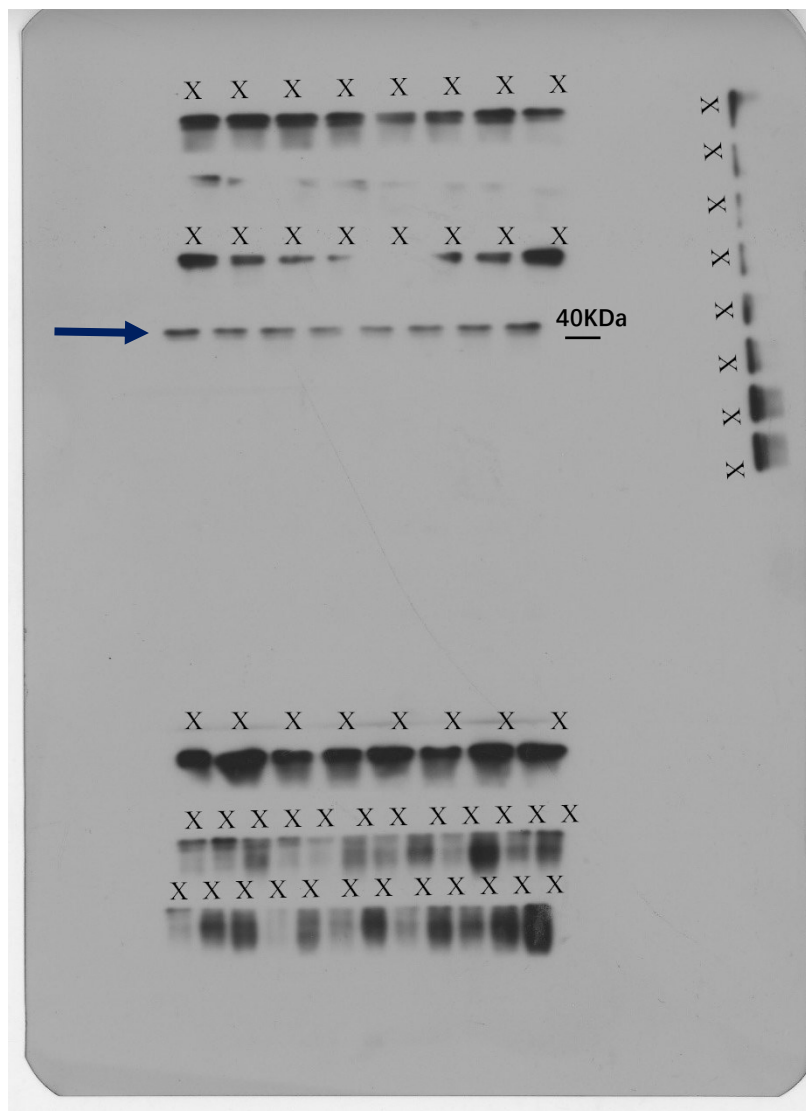**Fig 1A**
Menin

Loading order ────────────▶
Identity of experimental samples:
lane 1-4: Protein samples from the hypothalamus of young (3M) mice 1-4; lane 5-8: Protein samples from the hypothalamus of old (20M) mice 1-4.
Method used to capture the image:
Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
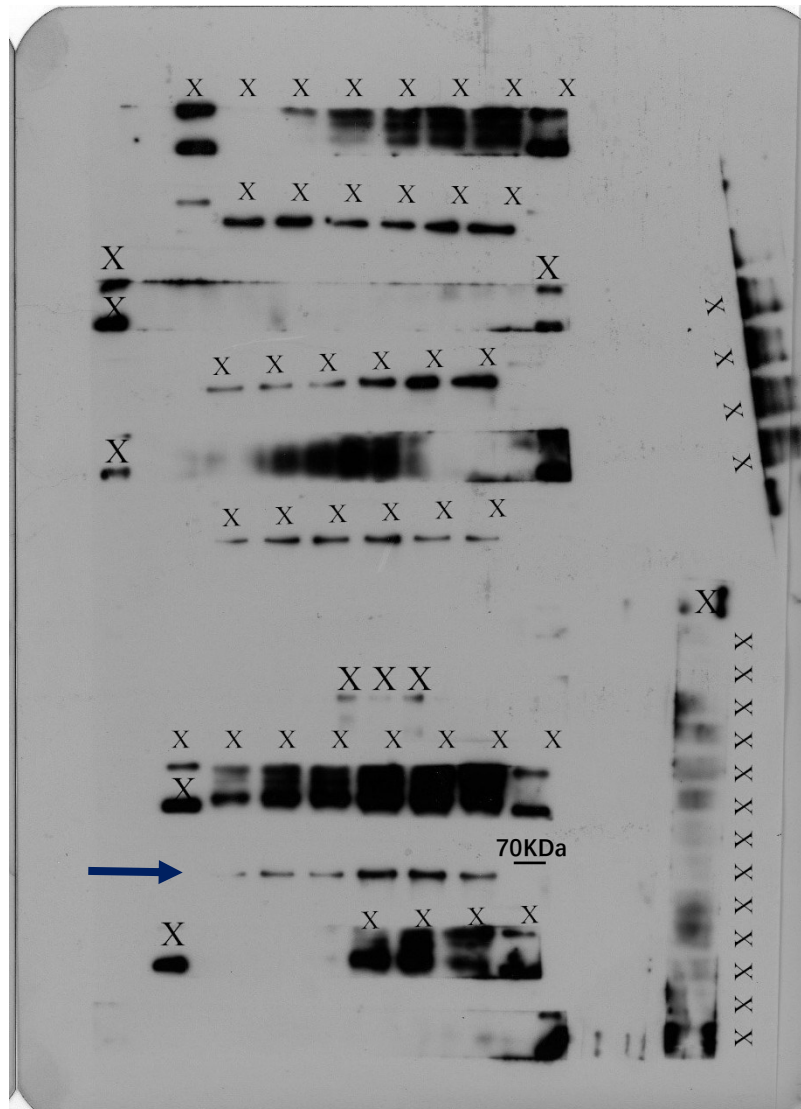
Actin

Loading order ⟶

Identity of experimental samples:

lane 1-4：Protein samples from the hypothalamus of young (3M) mice 1-4; lane 5-8：Protein samples from the hypothalamus of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
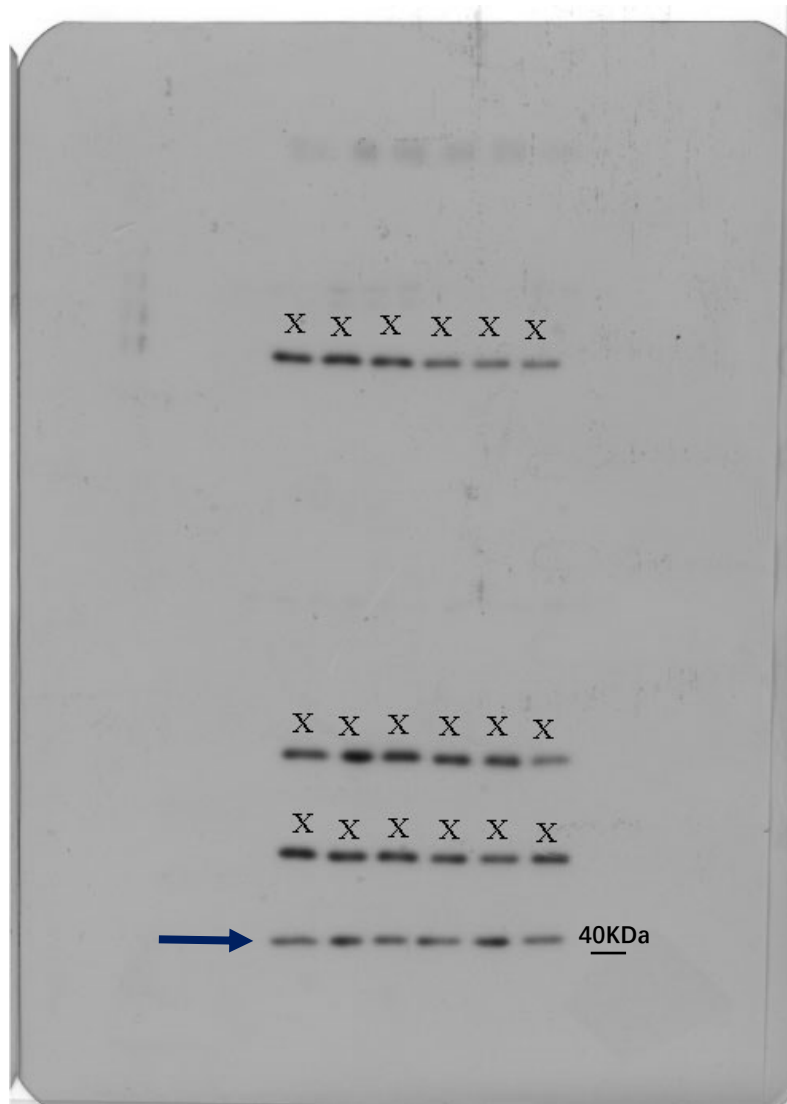
Fig 1E
Menin

Loading order ⟶

Identity of experimental samples:
lane 1-3：Protein samples from the hypothalamus of young (3M) mice 1-3；lane 4-6：Protein samples from the hypothalamus of old (20M) mice 1-3.

Method used to capture the image:
Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Actin

Loading order ⟶

Identity of experimental samples:

lane 1-3：Protein samples from the hypothalamus of young (3M) mice 1-3；lane 4-6：Protein samples from the hypothalamus of old (20M) mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Fig 1I

Menin

Loading order ⟶

Identity of experimental samples:

lane 1-3 : Protein samples from the hypothalamus of 6M $Men1^{f/f}$ mice 1-3; lane 4-6 : Protein samples from the hypothalamus of 6M ScKO mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
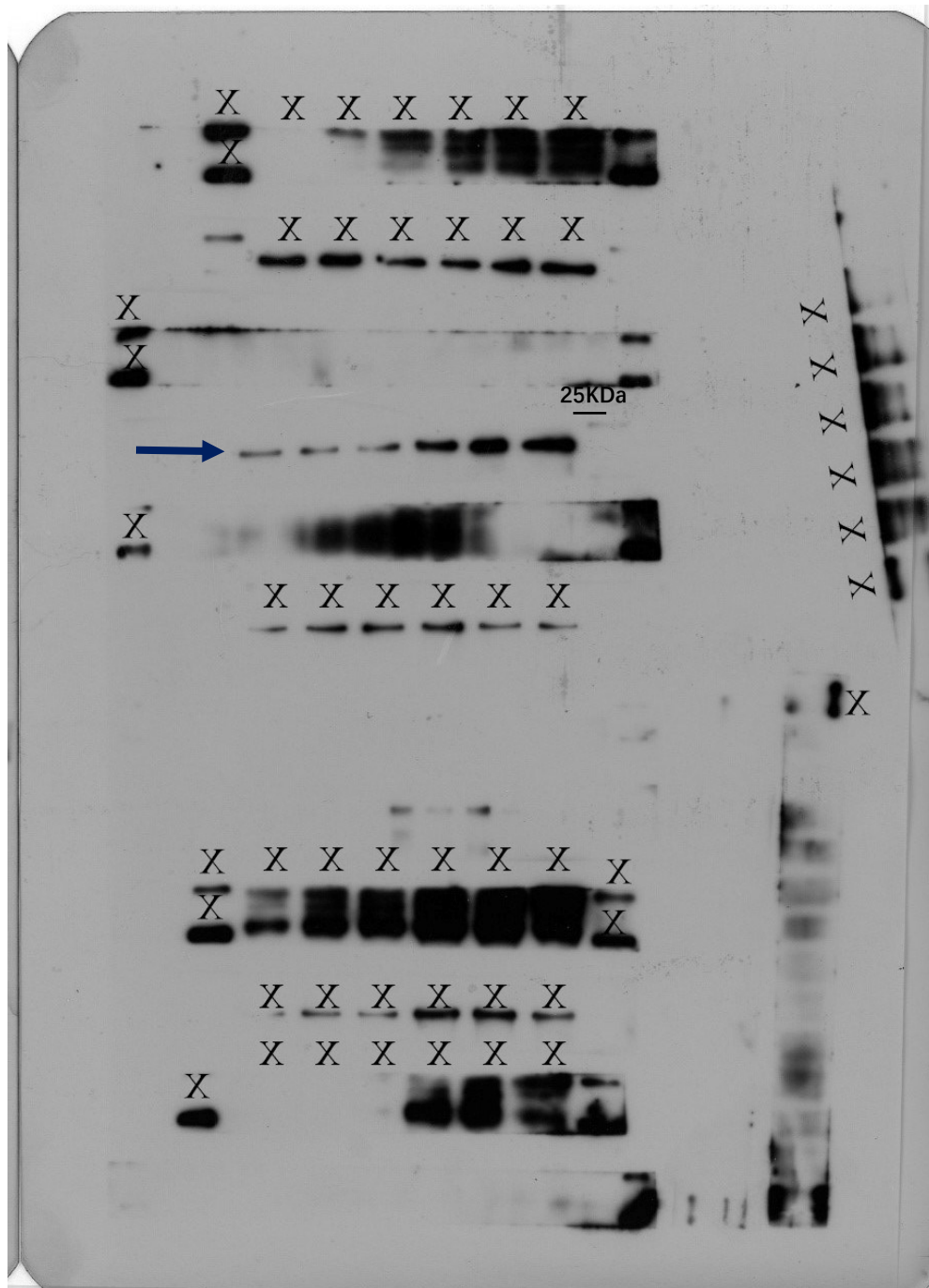
Actin

loading order ⟶

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 6M $Men1^{f/f}$ mice 1-3; lane 4-6: Protein samples from the hypothalamus of 6M ScKO mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

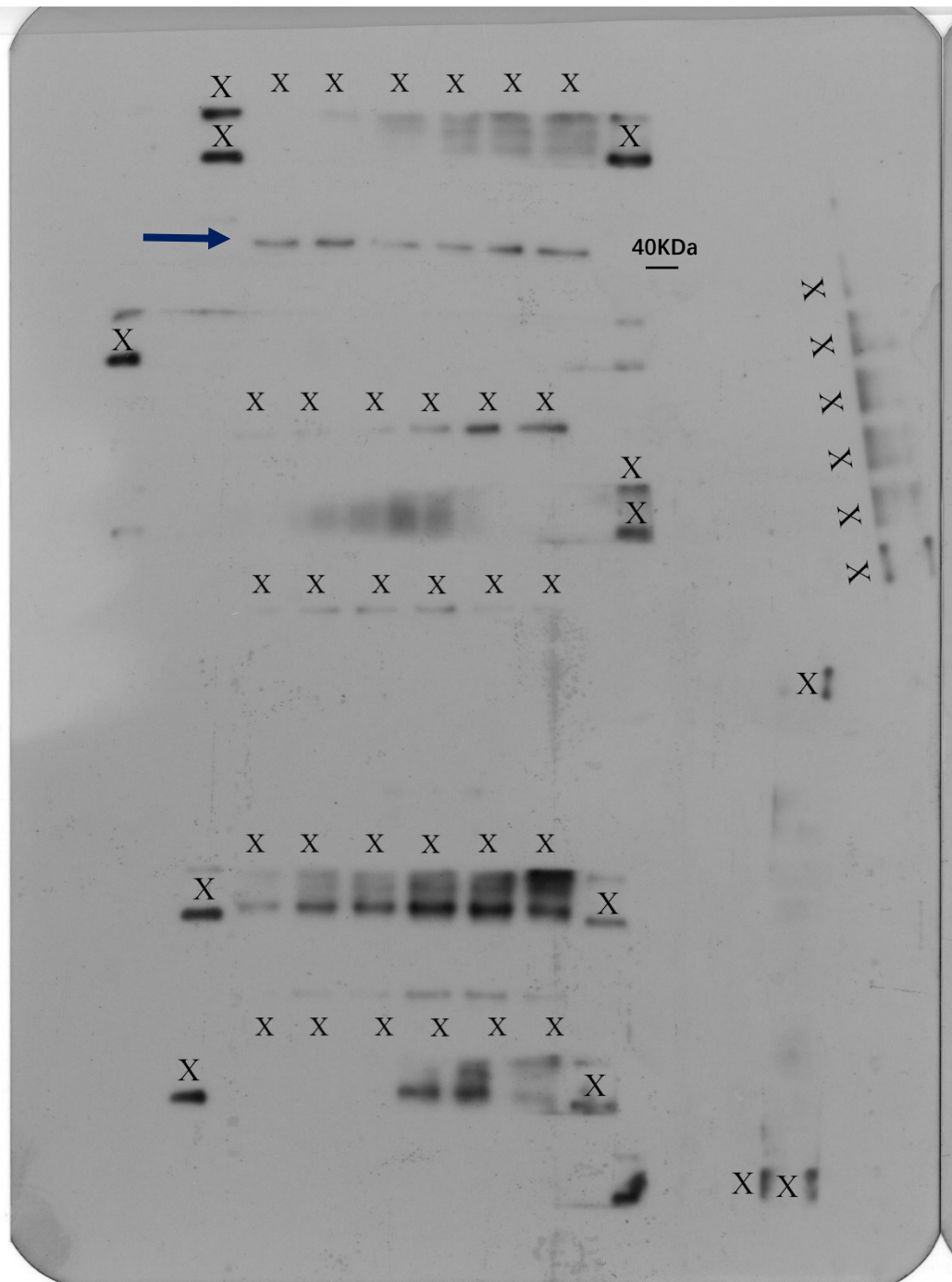**Fig 1M**

IL-1β

Loading order ─────────────➤

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 6M *Men1*^{f/f} mice 1-3; lane 4-6: Protein samples from the hypothalamus of 6M ScKO mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Actin

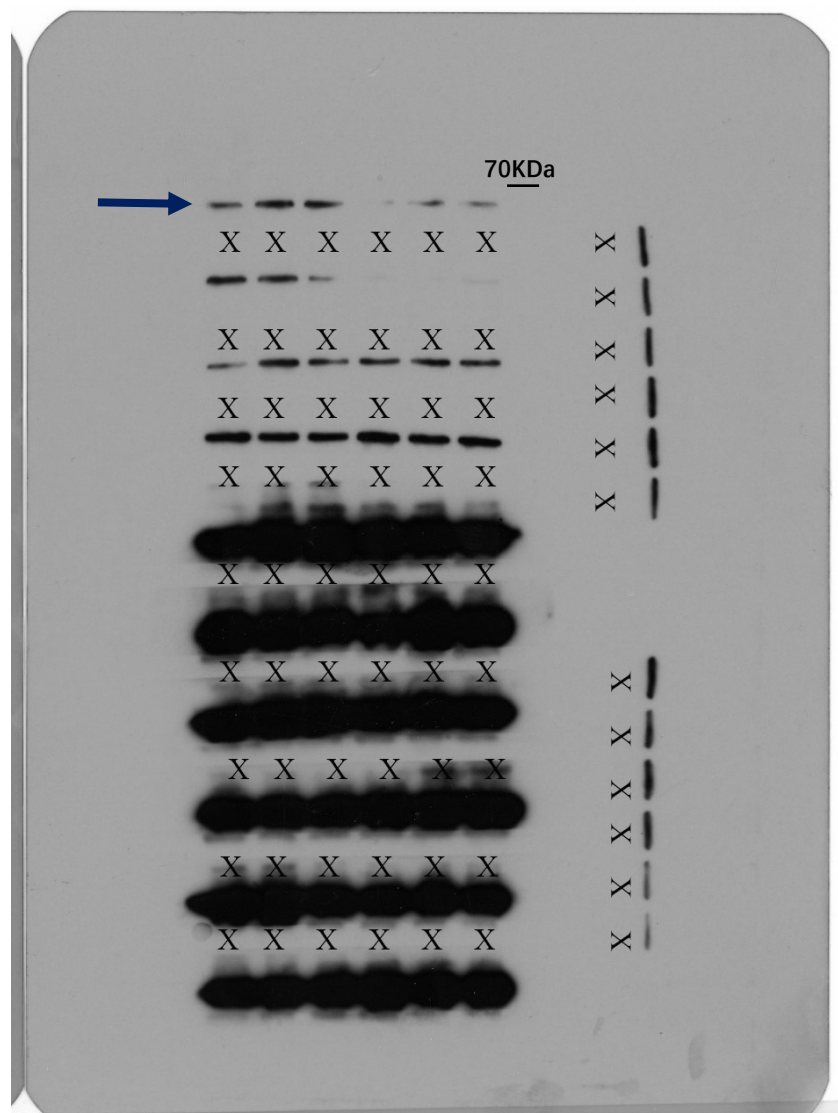40KDa

Loading order →

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 6M $Men1^{f/f}$ mice 1-3; lane 4-6: Protein samples from the hypothalamus of 6M ScKO mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

SourceData_Gel_Fig 2
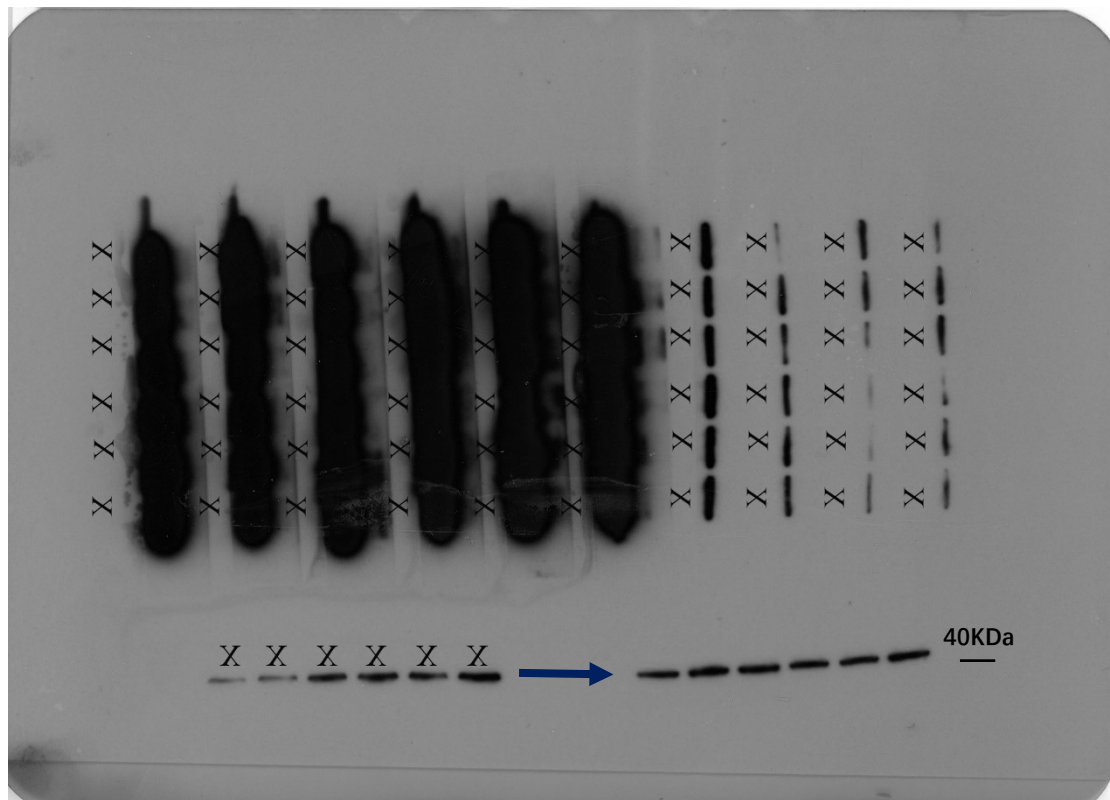
Fig 2D
Menin

Loading order ————————————➤

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 10M AAV-CAG-Cre mice 1-3; lane 4-6: Protein samples from the hypothalamus of 10M AAV-CAG-Cre-*Men1*^f/f mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Actin

40KDa

Loading order————————————→
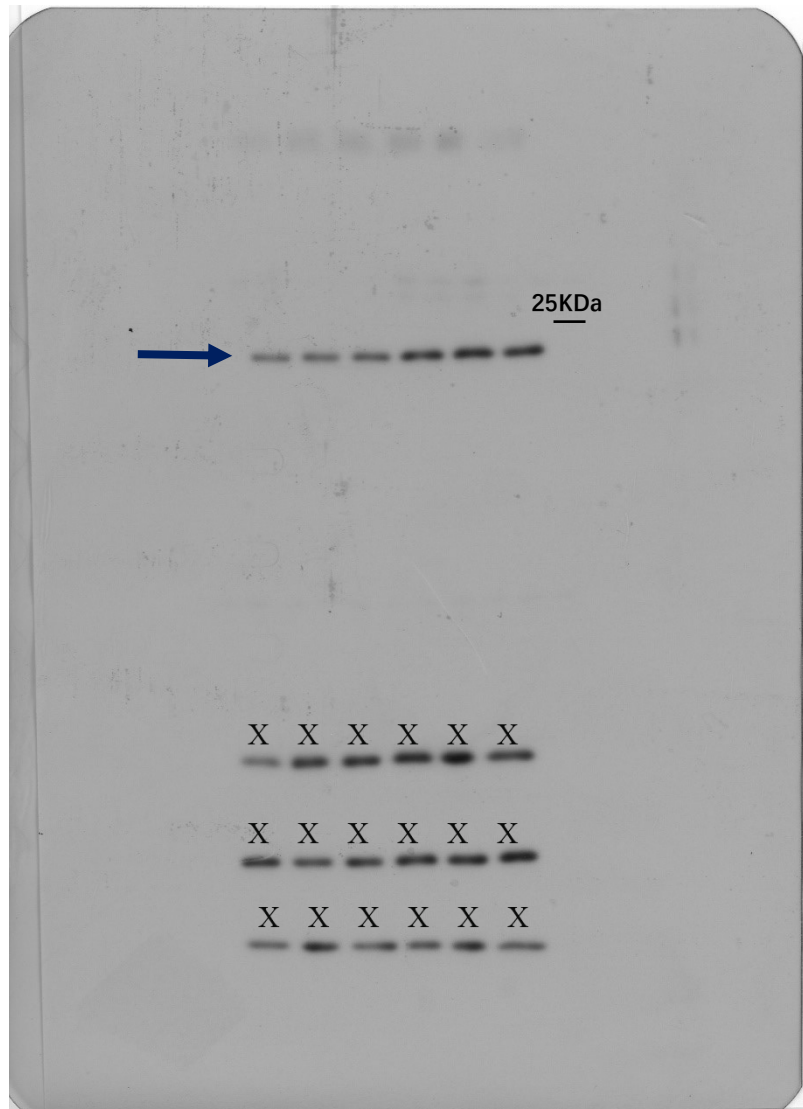
Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 10M AAV-CAG-Cre mice 1-3; lane 4-6: Protein samples from the hypothalamus of 10M AAV-CAG-Cre-*Men1*$^{f/f}$ mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Fig 2P

IL-1β

Loading order ——————————————➤
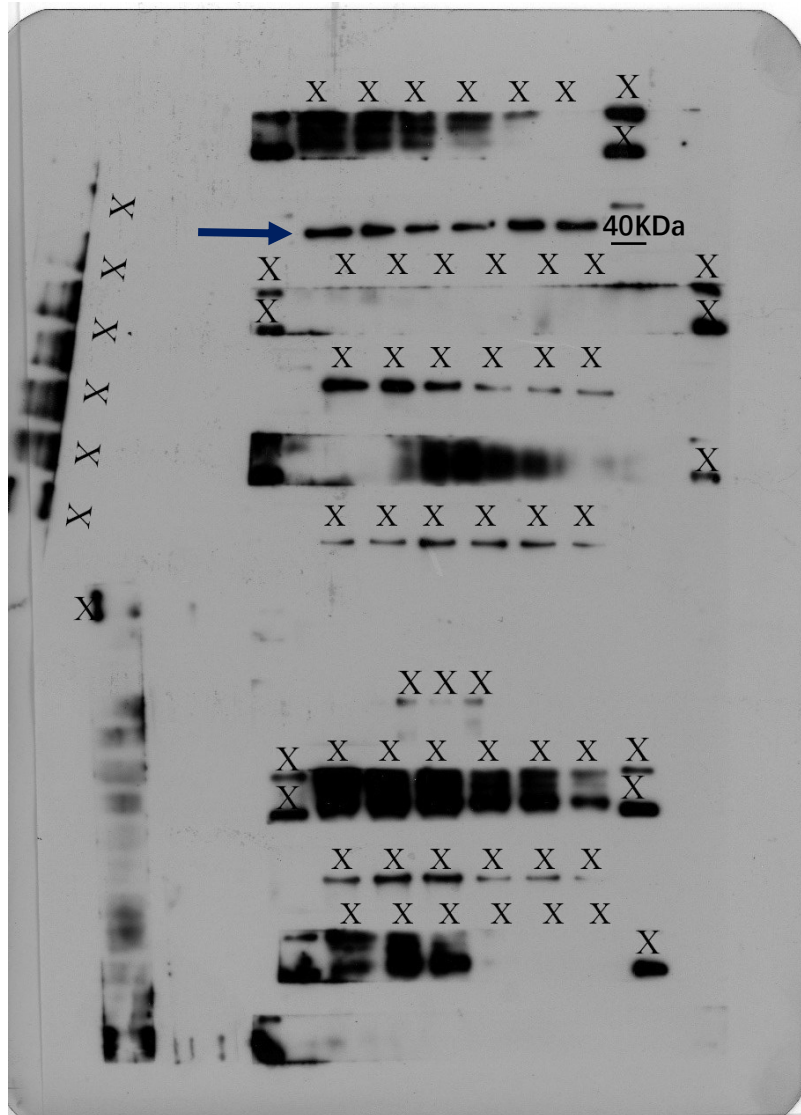
Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 10M AAV-CAG-Cre mice 1-3; lane 4-6: Protein samples from the hypothalamus of 10M AAV-CAG-Cre-*Men1*^f/f mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Actin

40KDa

Loading order ⟶

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 10M AAV-CAG-Cre mice 1-3; lane 4-6: Protein samples from the hypothalamus of 10M AAV-CAG-Cre-*Men1*[f/f] mice 1-3.
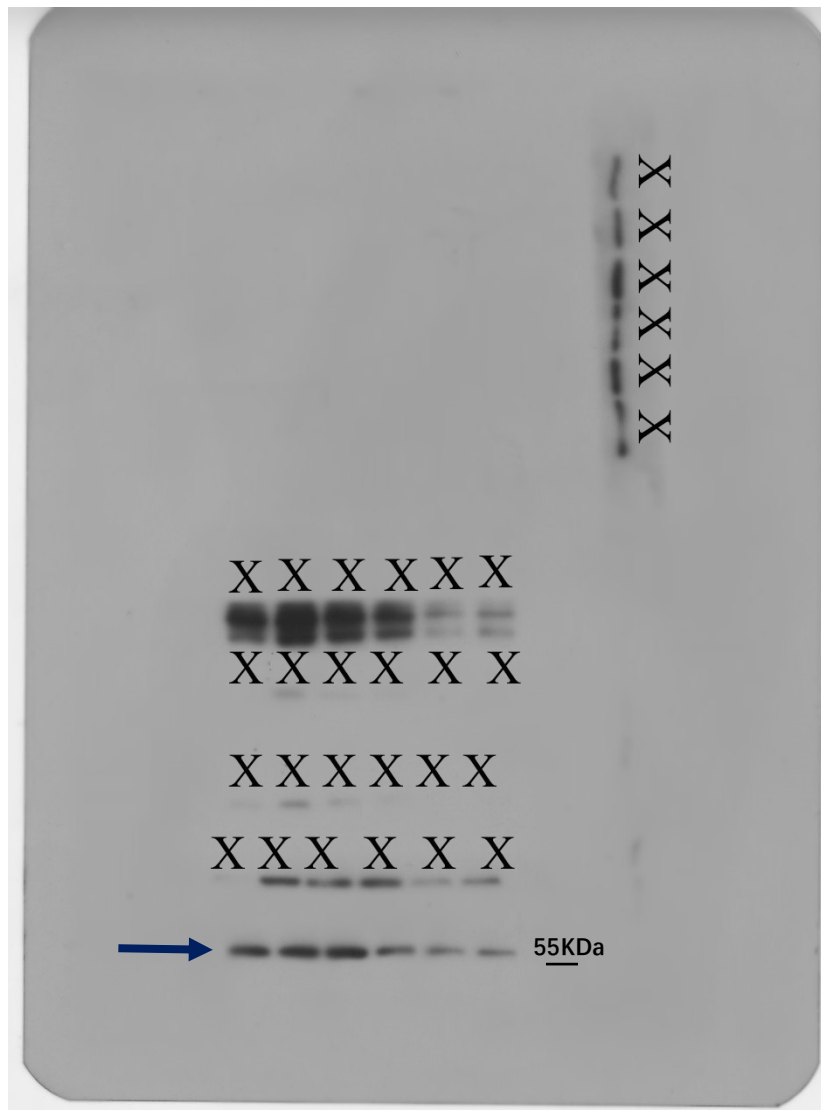
Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

SourceData_Gel_Fig 4
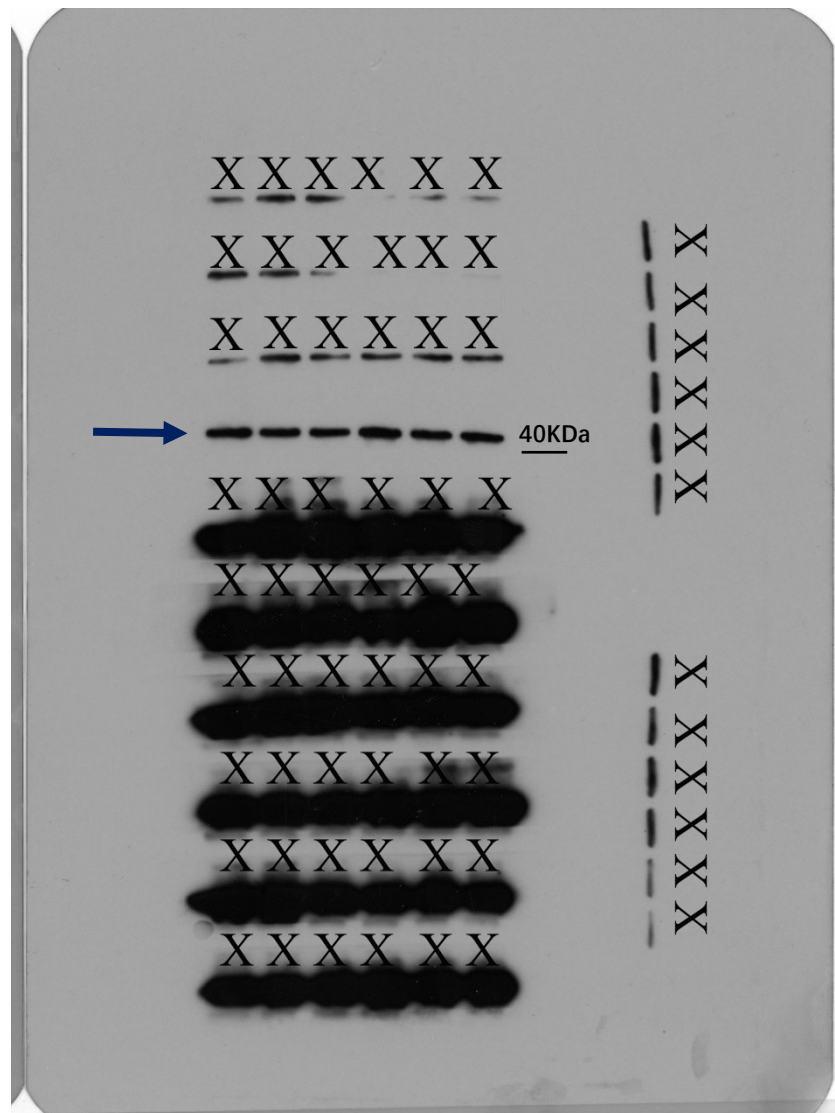
Fig 4D
PHGDH

Loading order ⟶

Identity of experimental samples:
lane 1-3: Protein samples from the hypothalamus of 10M AAV-CAG-Cre mice 1-3; lane 4-6: Protein samples from the hypothalamus of 10M AAV-CAG-Cre-*Men1*$^{f/f}$ mice 1-3.
Method used to capture the image:
Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
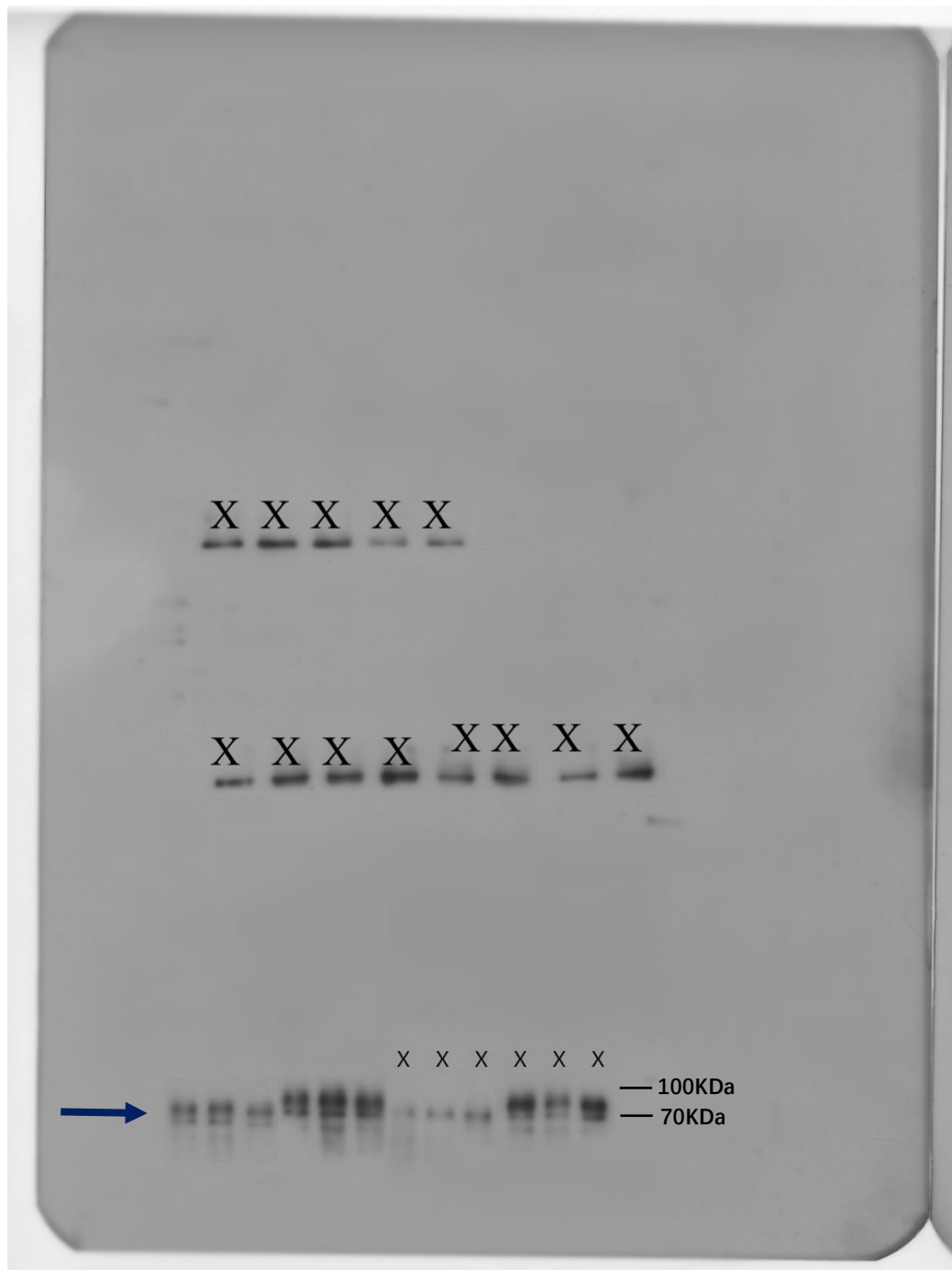
Actin

Loading order ⟶

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 10M AAV-CAG-Cre mice 1-3; lane 4-6: Protein samples from the hypothalamus of 10M AAV-CAG-Cre-*Men1*$^{f/f}$ mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Fig 4L

Menin
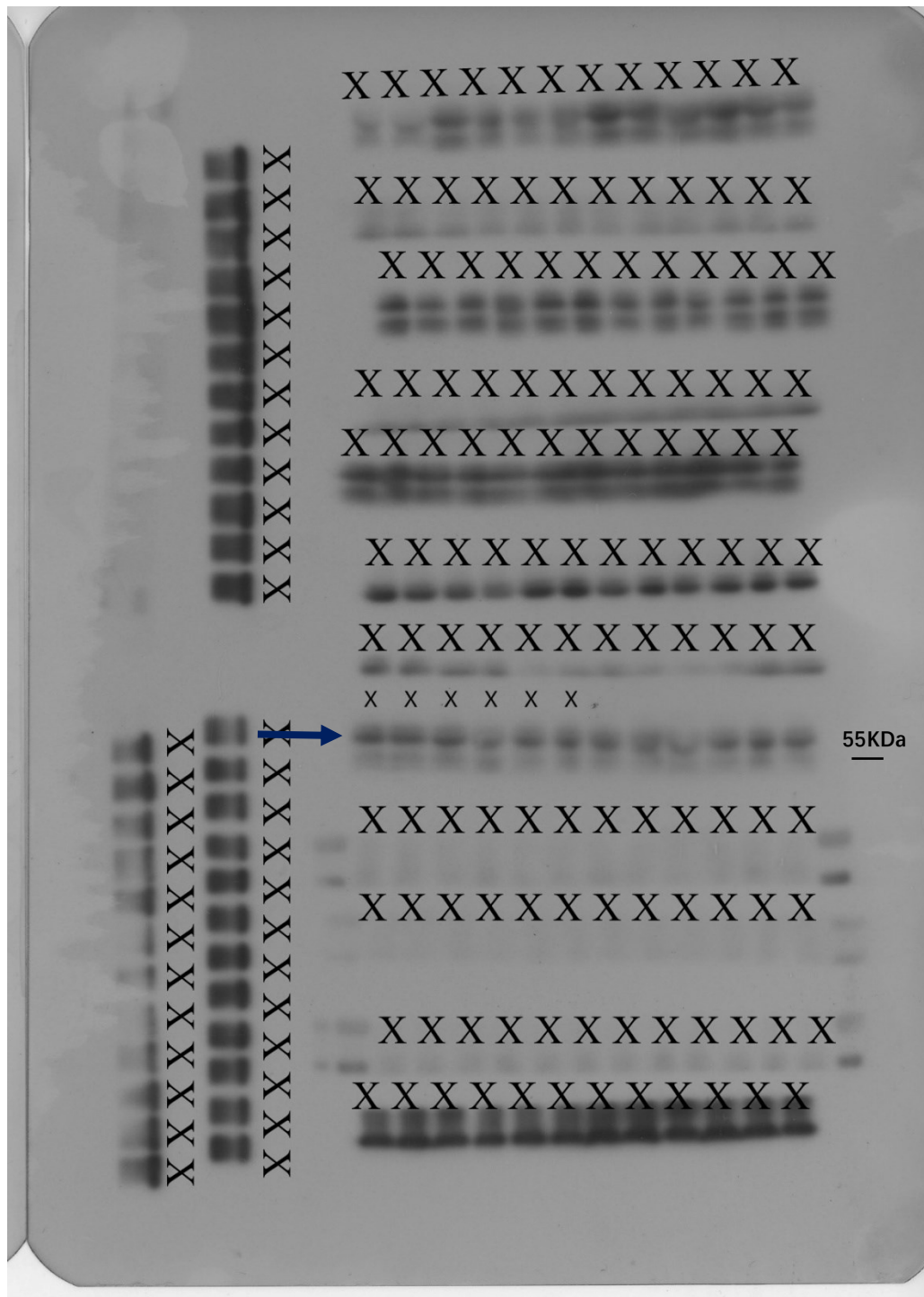

Loading order ⎯⎯⎯⎯⎯⎯⟶

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 20M AAV-GFP mice 1-3; lane 4-6: Protein samples from the hypothalamus of 20M AAV-Menin-GFP mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

PHGDH

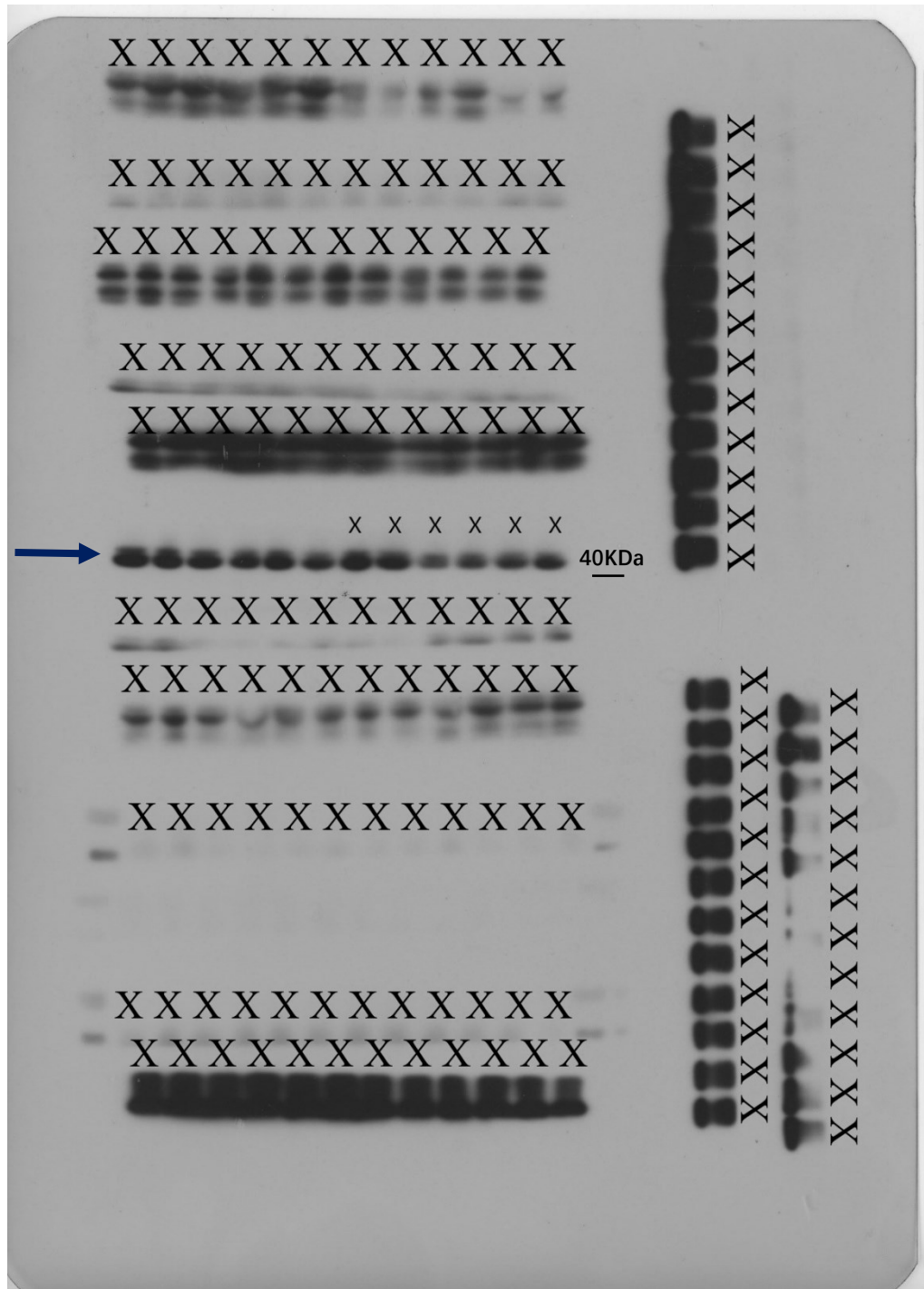Loading order ——————————▶

Identity of experimental samples:

lane 7-9: Protein samples from the hypothalamus of 20M AAV-GFP mice 1-3; lane 10-12: Protein samples from the hypothalamus of 20M AAV-Menin-GFP mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Actin

40KDa

Loading order ⟶

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 20M AAV-GFP mice 1-3; lane 4-6: Protein samples from the hypothalamus of 20M AAV-Menin-GFP mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

SourceData_Gel_Fig 5

Fig 5J
IL-1β

Loading order ————————————▶

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 20M AAV-GFP mice 1-3; lane 4-6: Protein samples from the hypothalamus of 20M AAV-Menin-GFP mice 1-3.
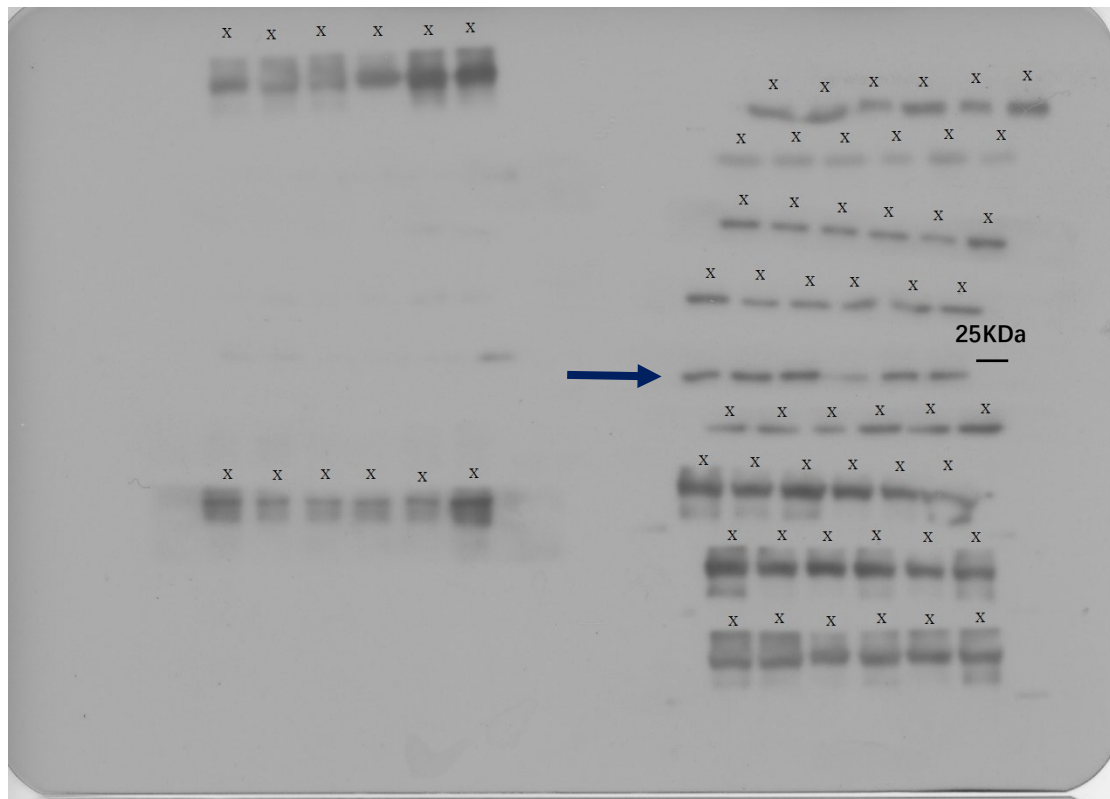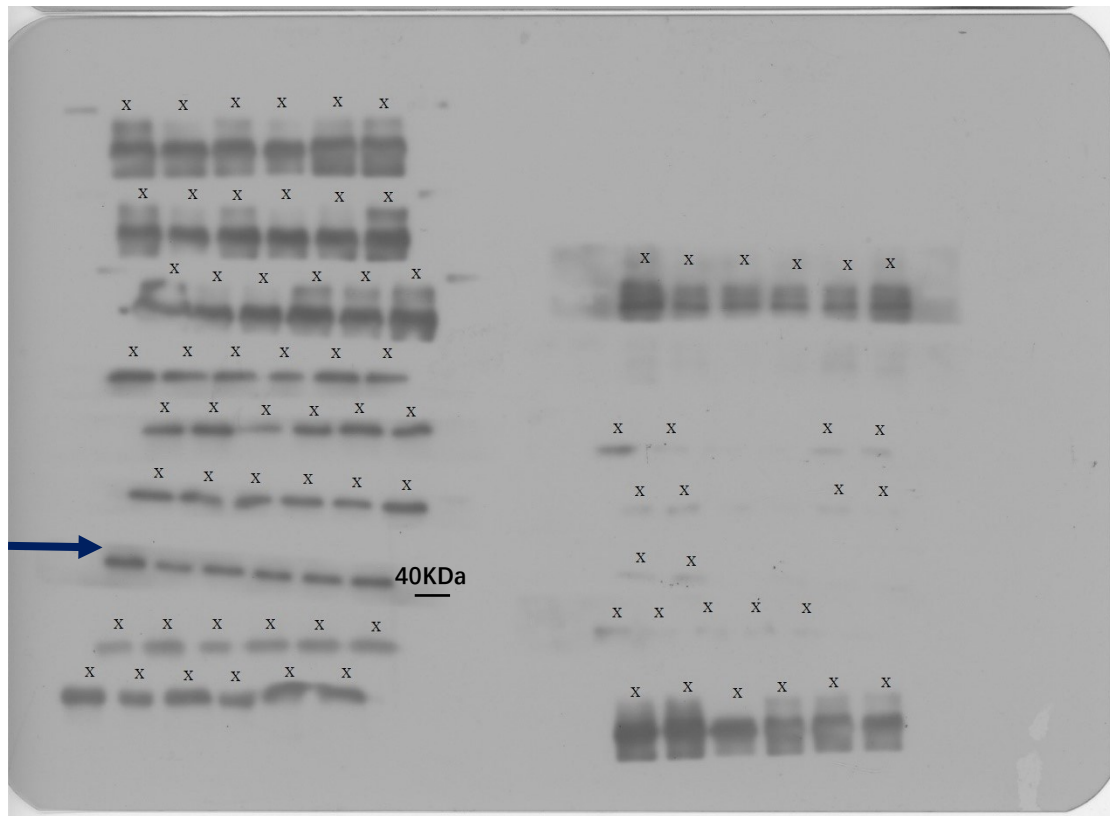
Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Actin

40KDa

Loading order ⟶

Identity of experimental samples:

lane 1-3: Protein samples from the hypothalamus of 20M AAV-GFP mice 1-3; lane 4-6: Protein samples from the hypothalamus of 20M AAV-Menin-GFP mice 1-3.
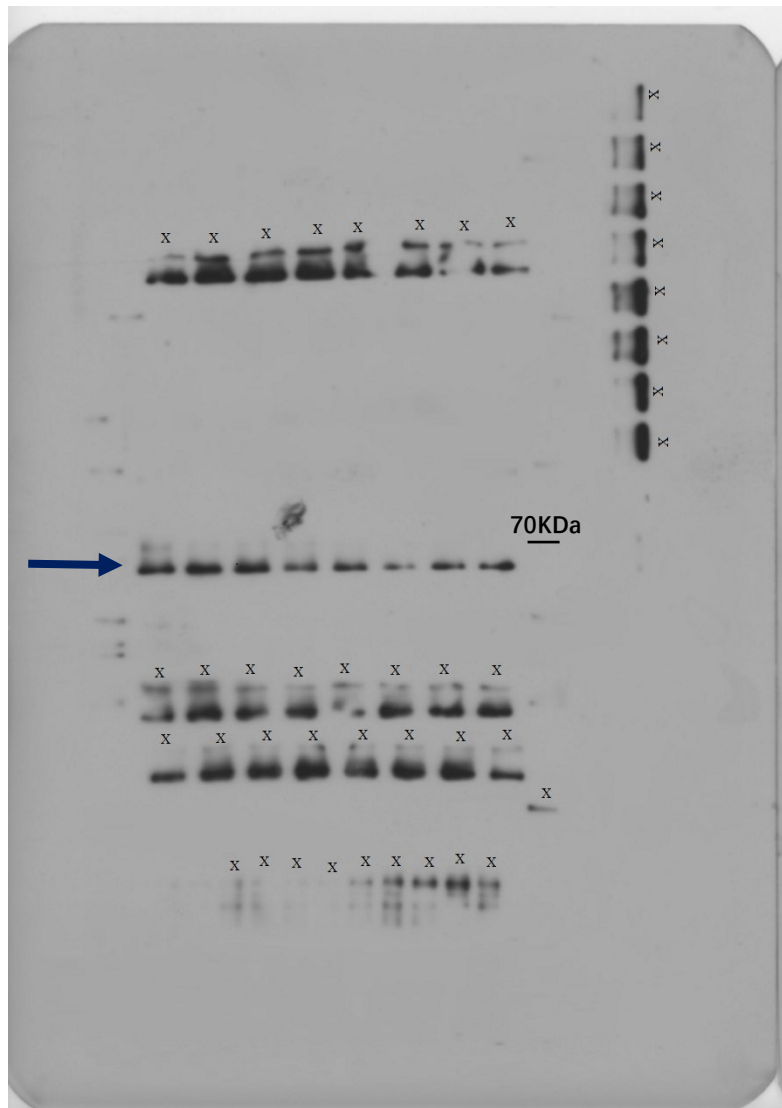
Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

SourceData_Gel_S1_Fig

S1A _Fig
Menin

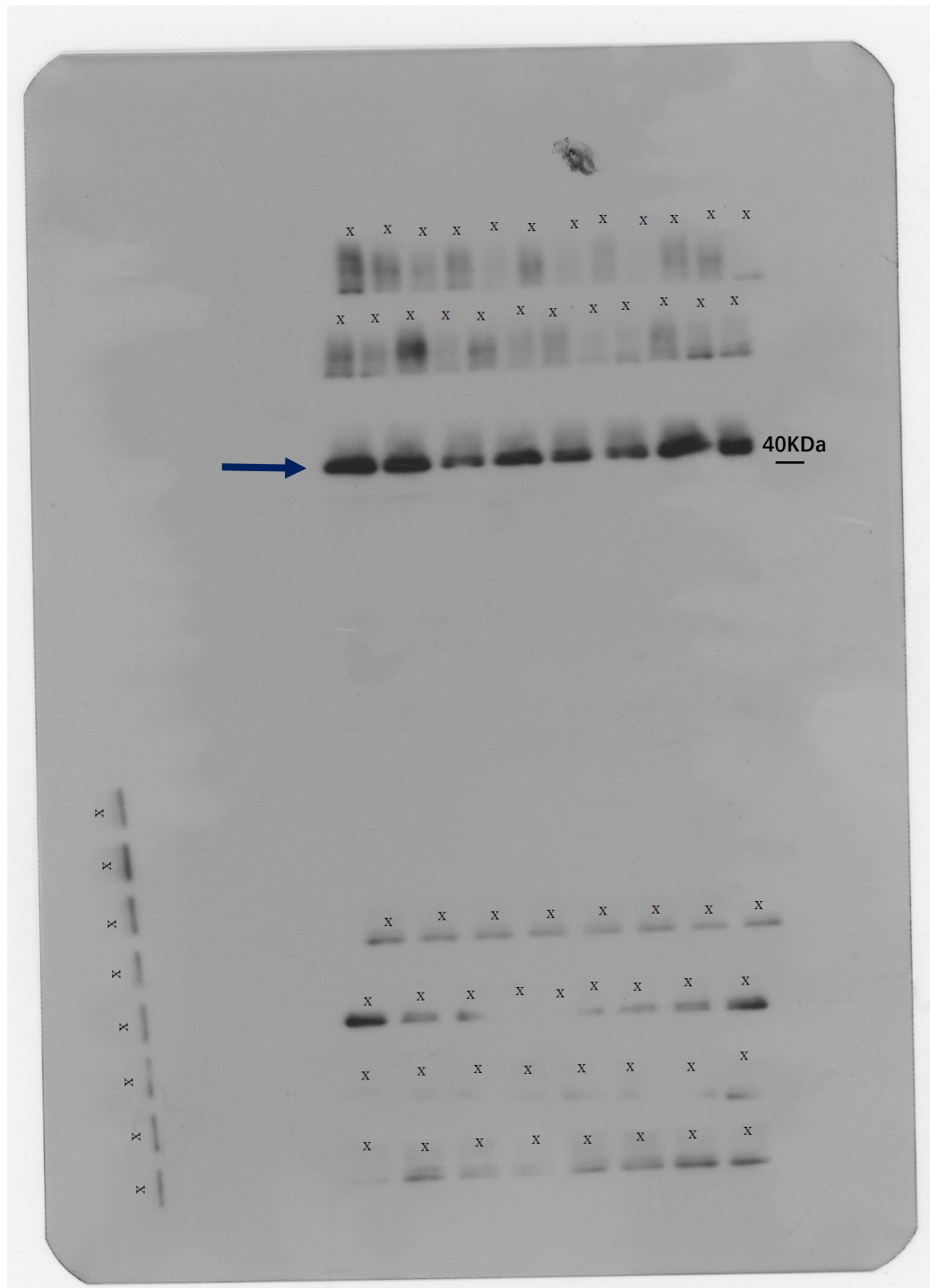

Loading order ———————————▶

Identity of experimental samples:

lane 1-4: Protein samples from the hippocampus of young (3M) mice 1-4; lane 5-8: Protein samples from the hippocampus of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
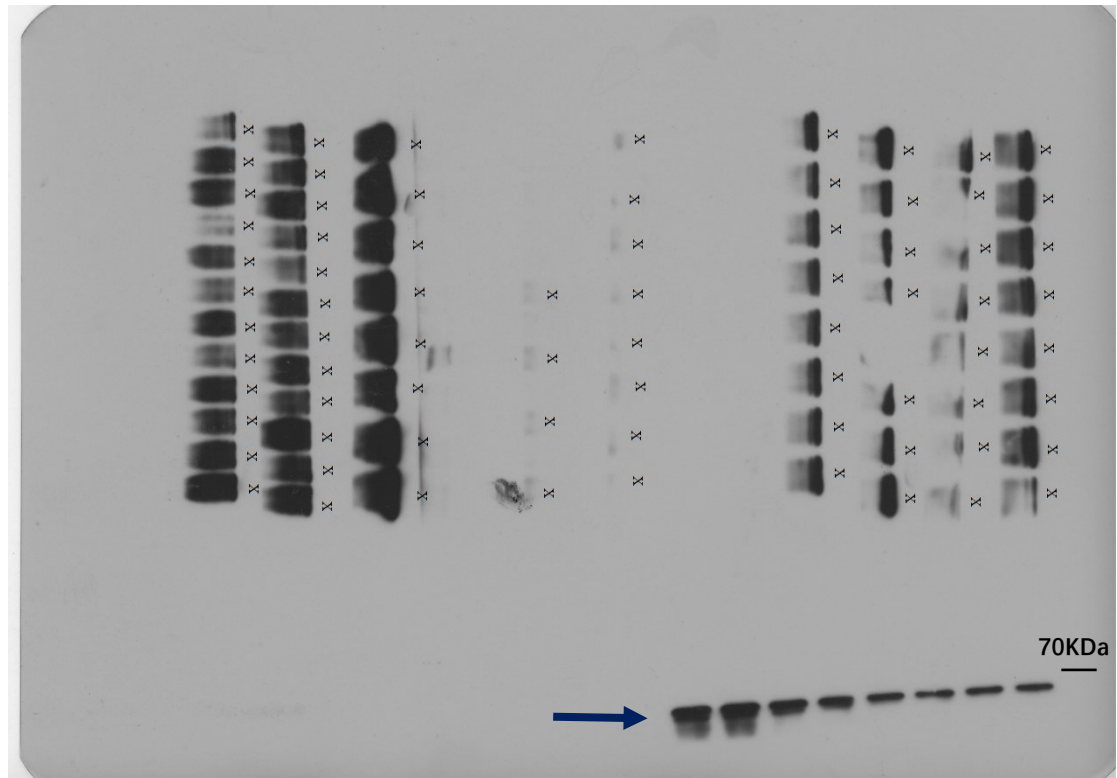
Actin

Loading order ──────────►

Identity of experimental samples:

lane 1-4: Protein samples from the hippocampus of young (3M) mice 1-4; lane 5-8: Protein samples from the hippocampus of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S1C _Fig

Menin

Loading order ⟶

Identity of experimental samples:

lane 1-4: Protein samples from the striatum of young (3M) mice 1-4; lane 5-8: Protein samples from the striatum of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Actin

40KDa

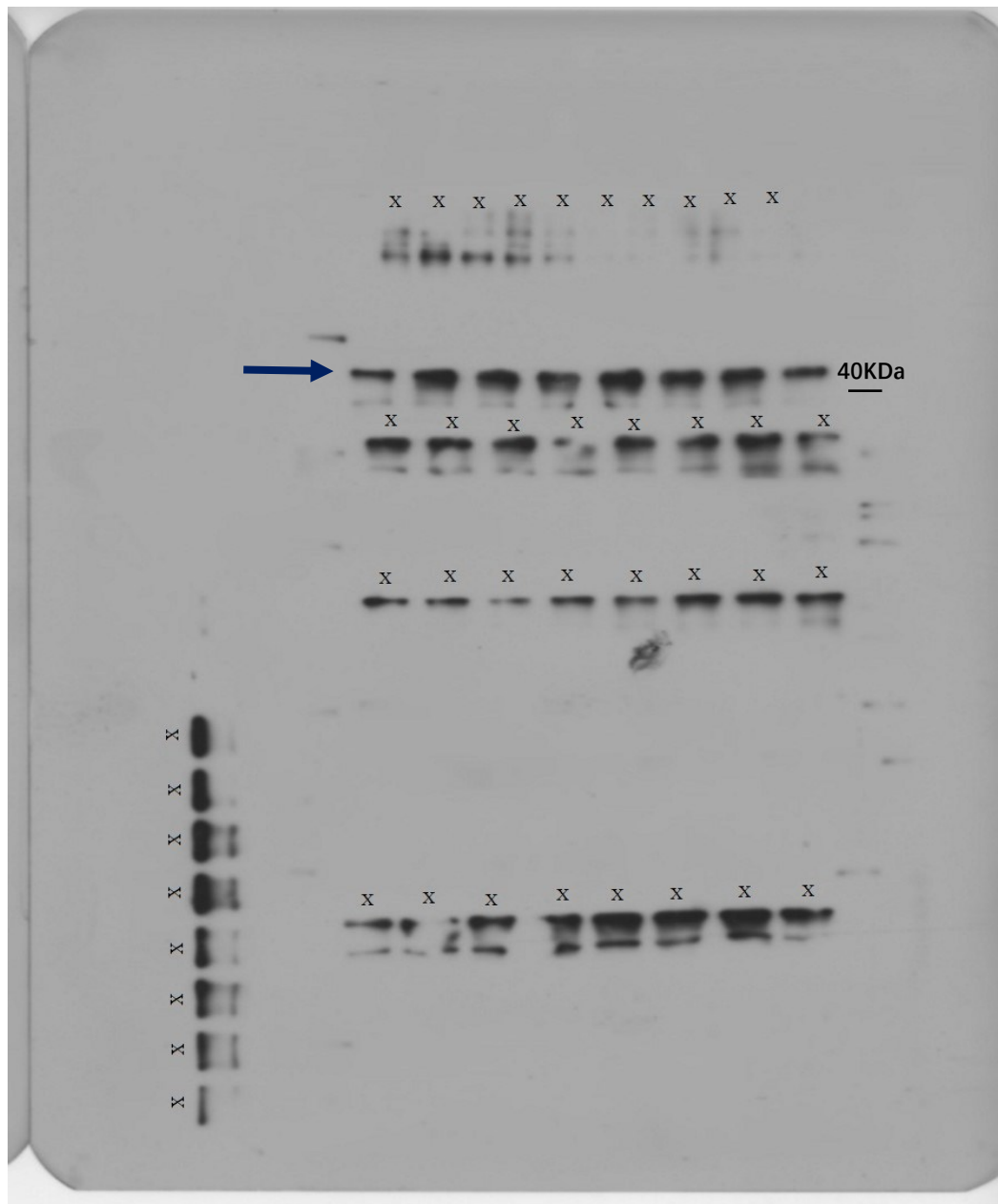**Loading order** ——————————➤
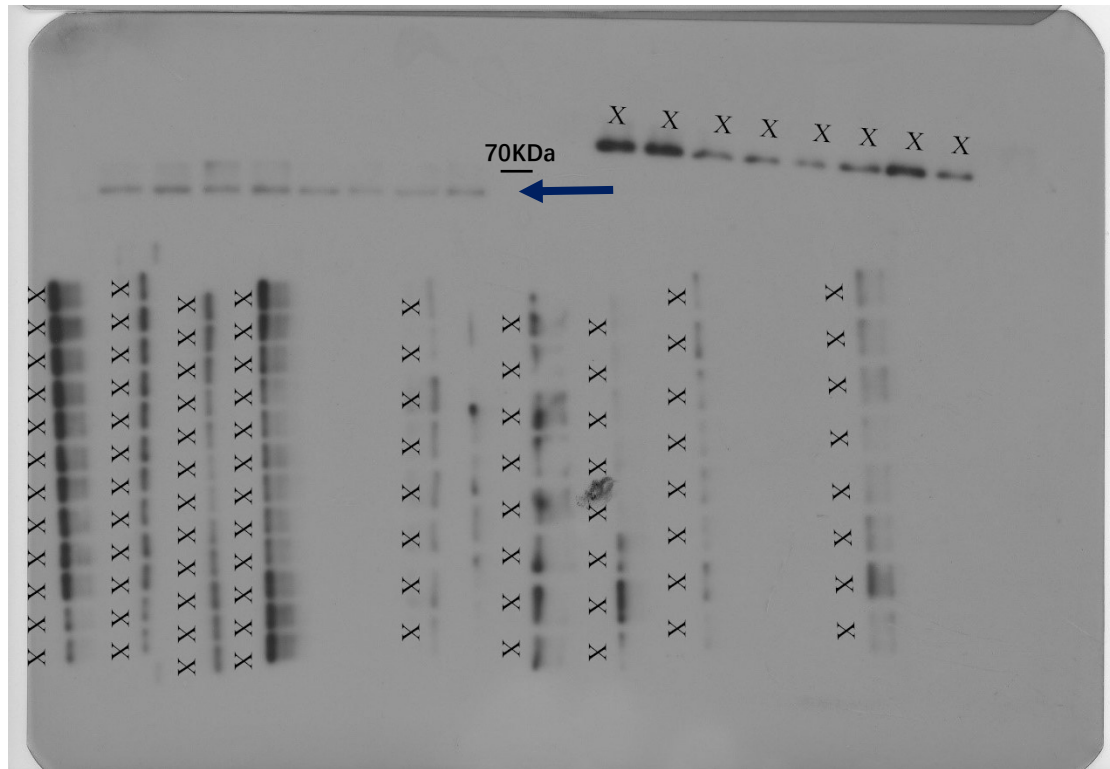
Identity of experimental samples:

lane 1-4: Protein samples from the striatum of young (3M) mice 1-4; lane 5-8: Protein samples from the striatum of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S1E _Fig
Menin

Loading order————————————————▶

Identity of experimental samples:

lane 1-4: Protein samples from the prefrontal cortex of young (3M) mice 1-4; lane 5-8: Protein samples from the prefrontal cortex of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
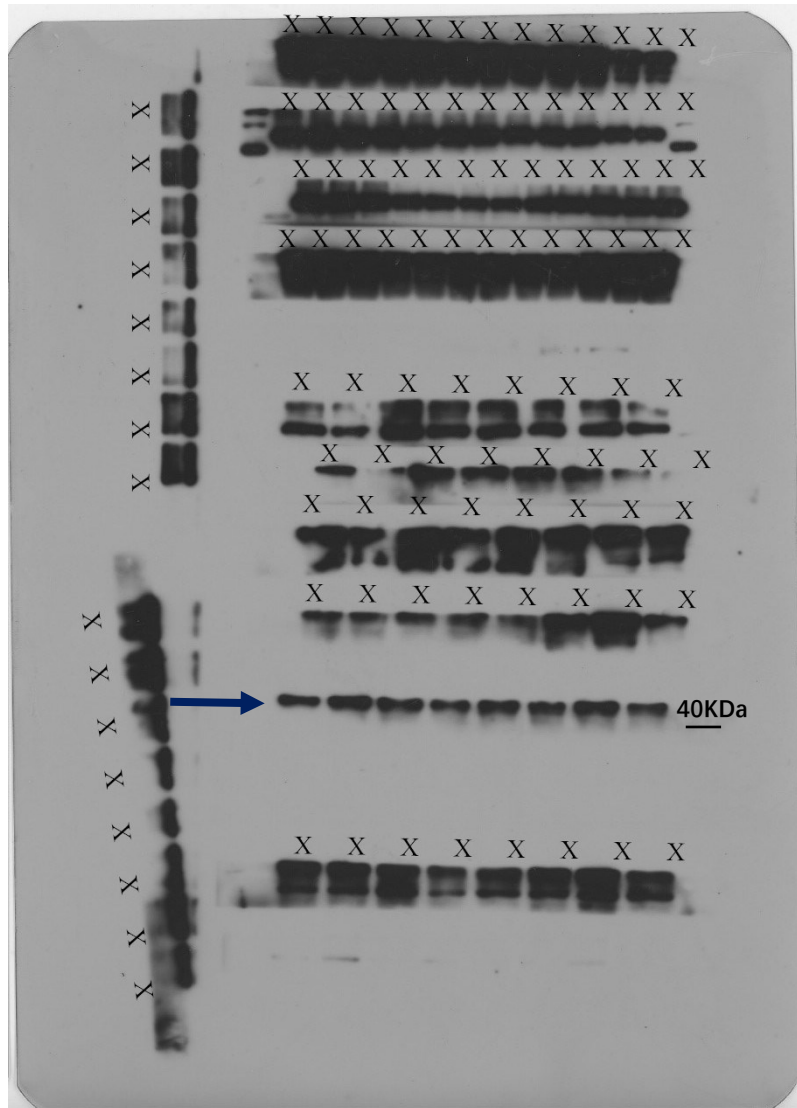
Actin

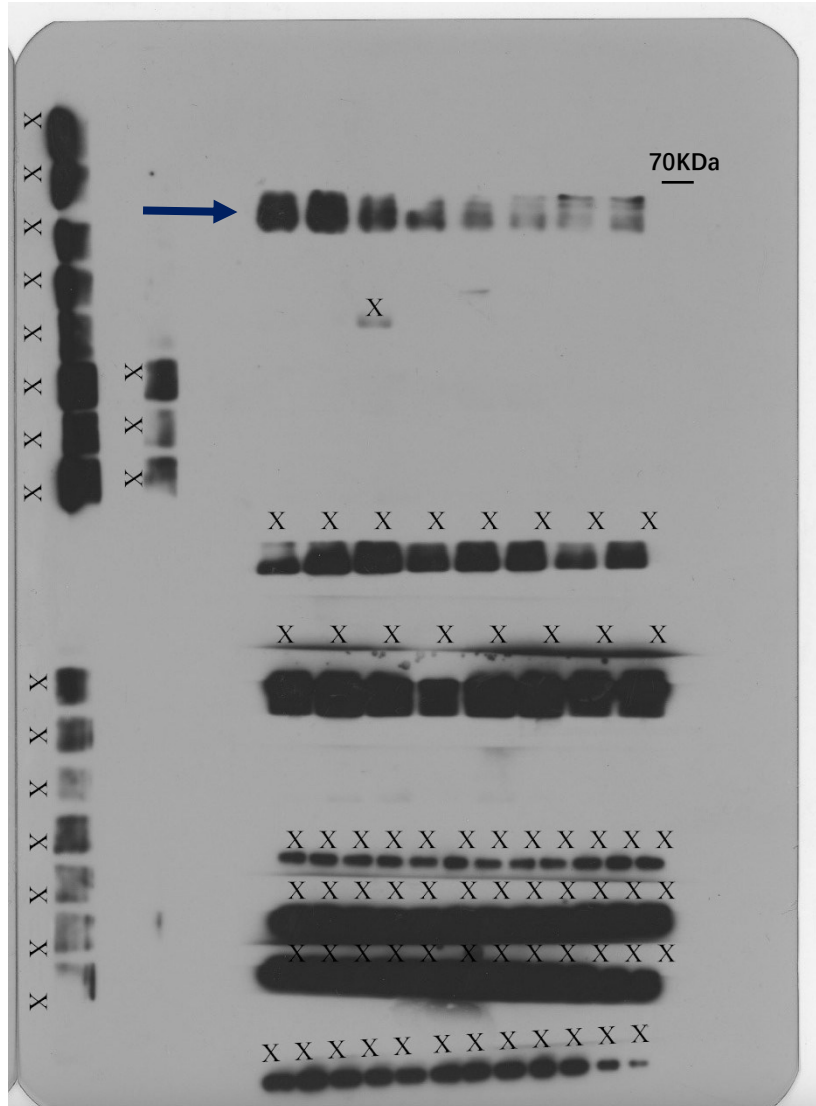**Loading order** ⟶

Identity of experimental samples:

lane 1-4: Protein samples from the prefrontal cortex of young (3M) mice 1-4; lane 5-8: Protein samples from the prefrontal cortex of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S1G _Fig
Menin

Loading order ⟶

Identity of experimental samples:

lane 1-4: Protein samples from the motor cortex of young (3M) mice 1-4; lane 5-8: Protein samples from the motor cortex of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
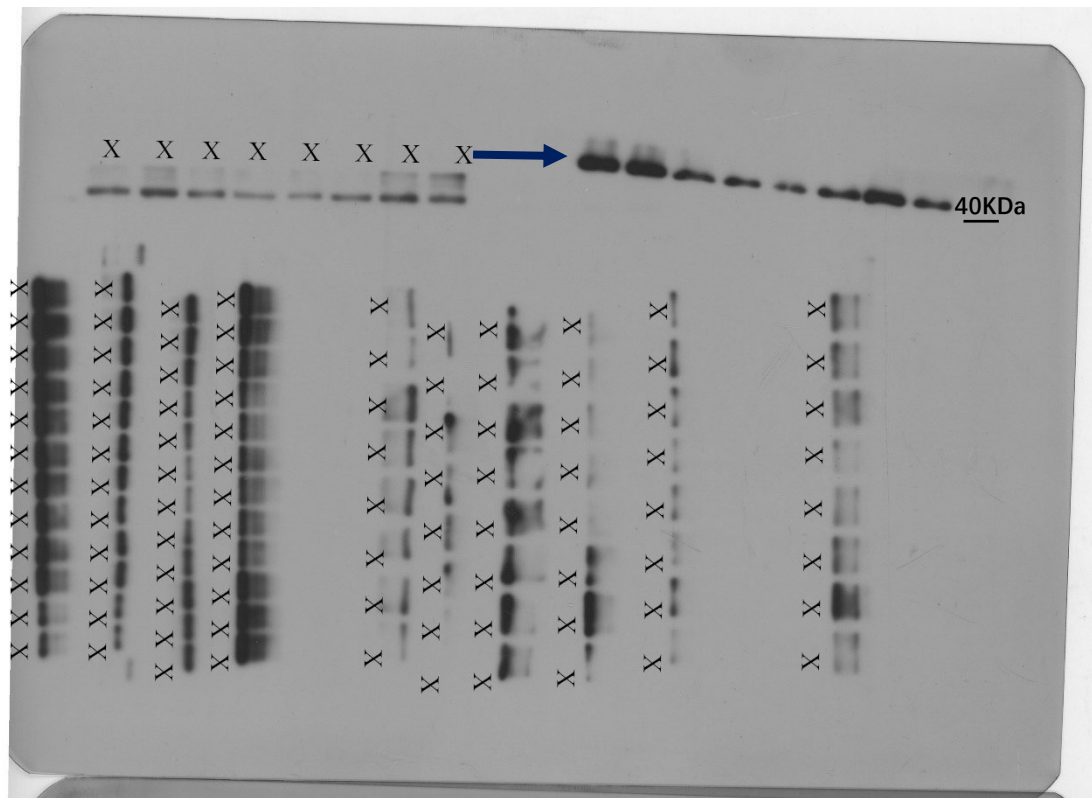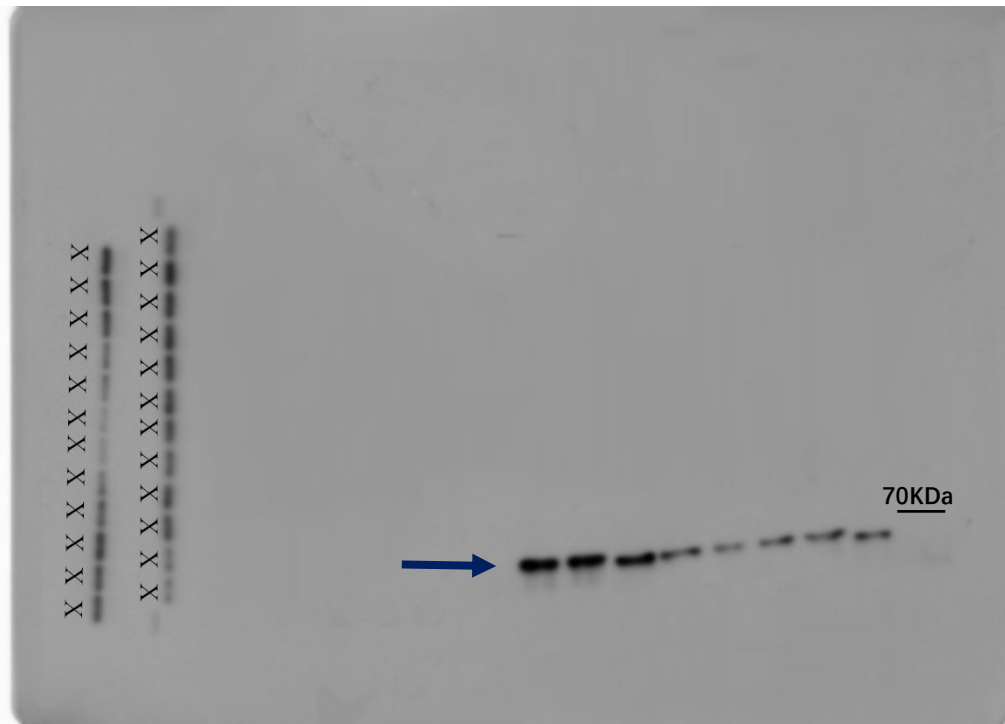
Actin

40KDa

Loading order ⟶

Identity of experimental samples:

lane 1-4: Protein samples from the motor cortex of young (3M) mice 1-4; lane 5-8: Protein samples from the motor cortex of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S1I _Fig

Menin

Loading order ——————————————▶

Identity of experimental samples:

lane 1-4: Protein samples from the visual cortex of young (3M) mice 1-4; lane5-8: Protein samples from the visual cortex of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
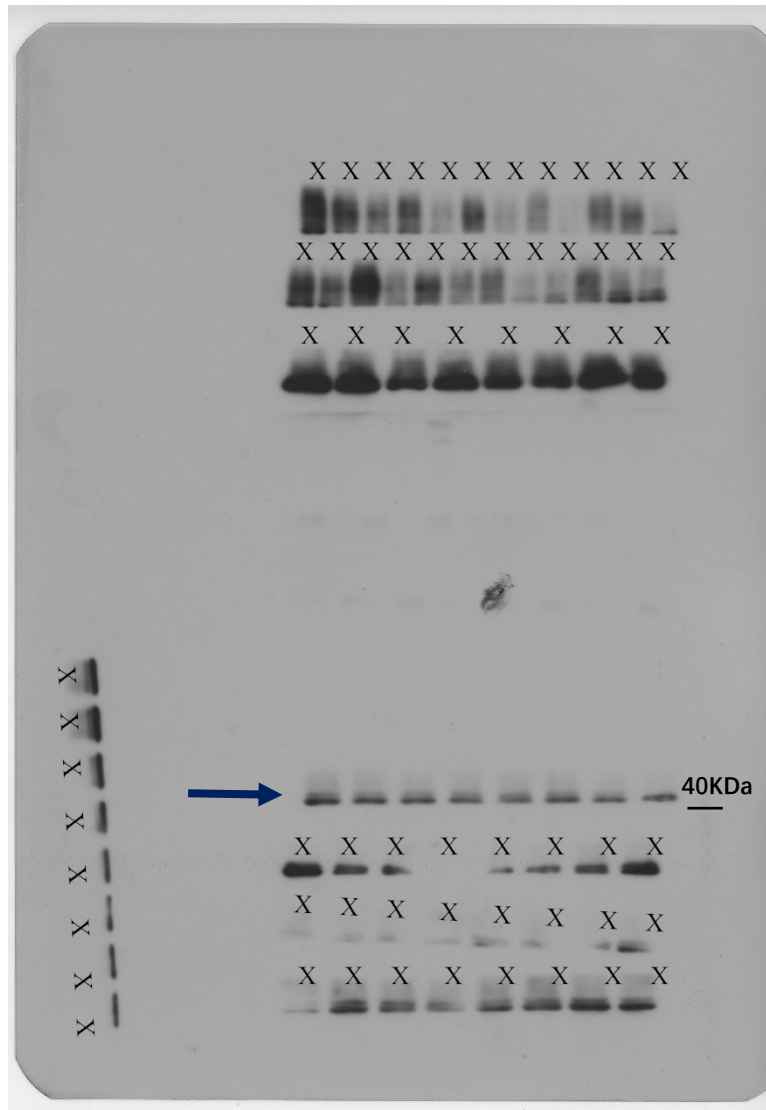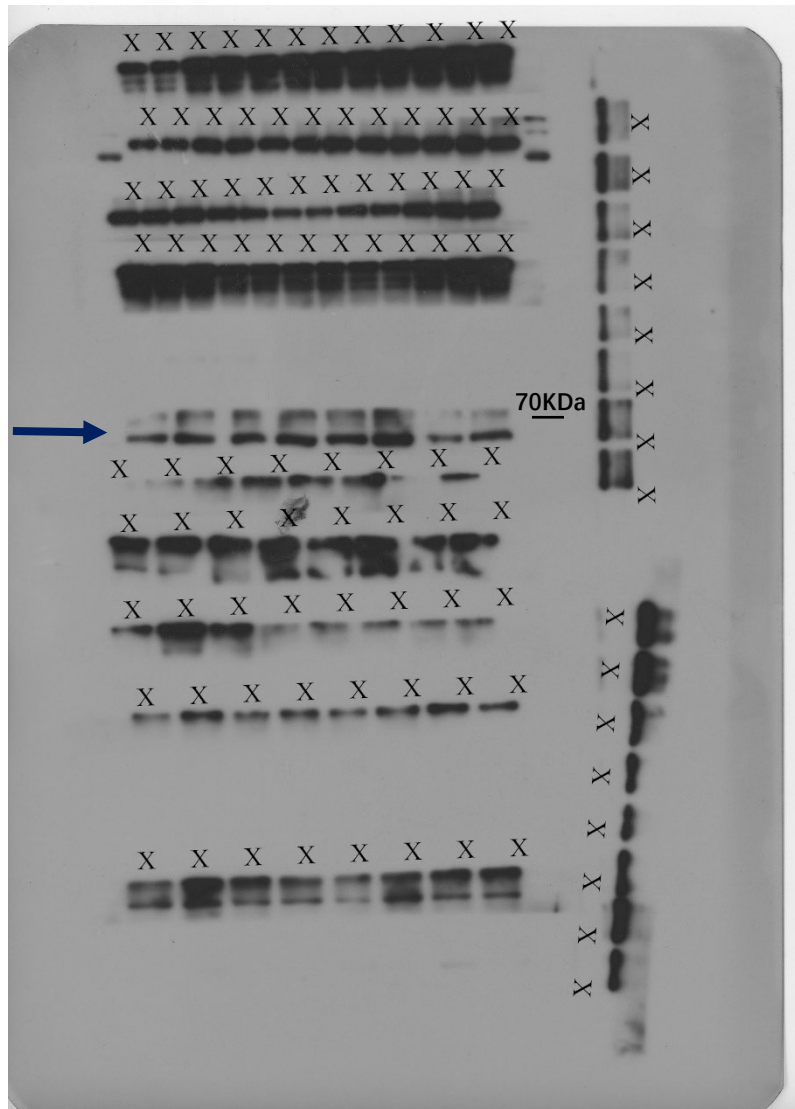
Actin

Loading order ⟶

Identity of experimental samples:

lane 1-4: Protein samples from the visual cortex of young (3M) mice 1-4; lane 5-8: Protein samples from the visual cortex of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S1K _Fig

Menin

Loading order ⟶

Identity of experimental samples:

lane 1-4: Protein samples from the cerebellum of young (3M) mice 1-4; lane 5-8: Protein samples from the cerebellum of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
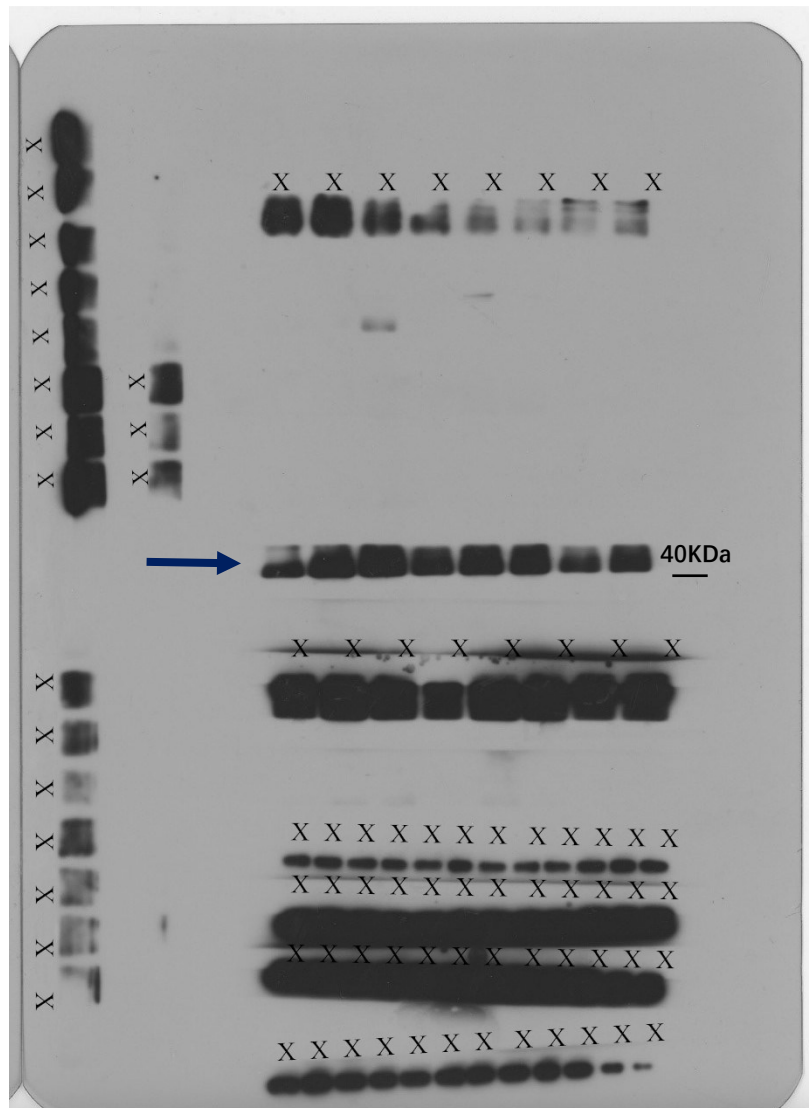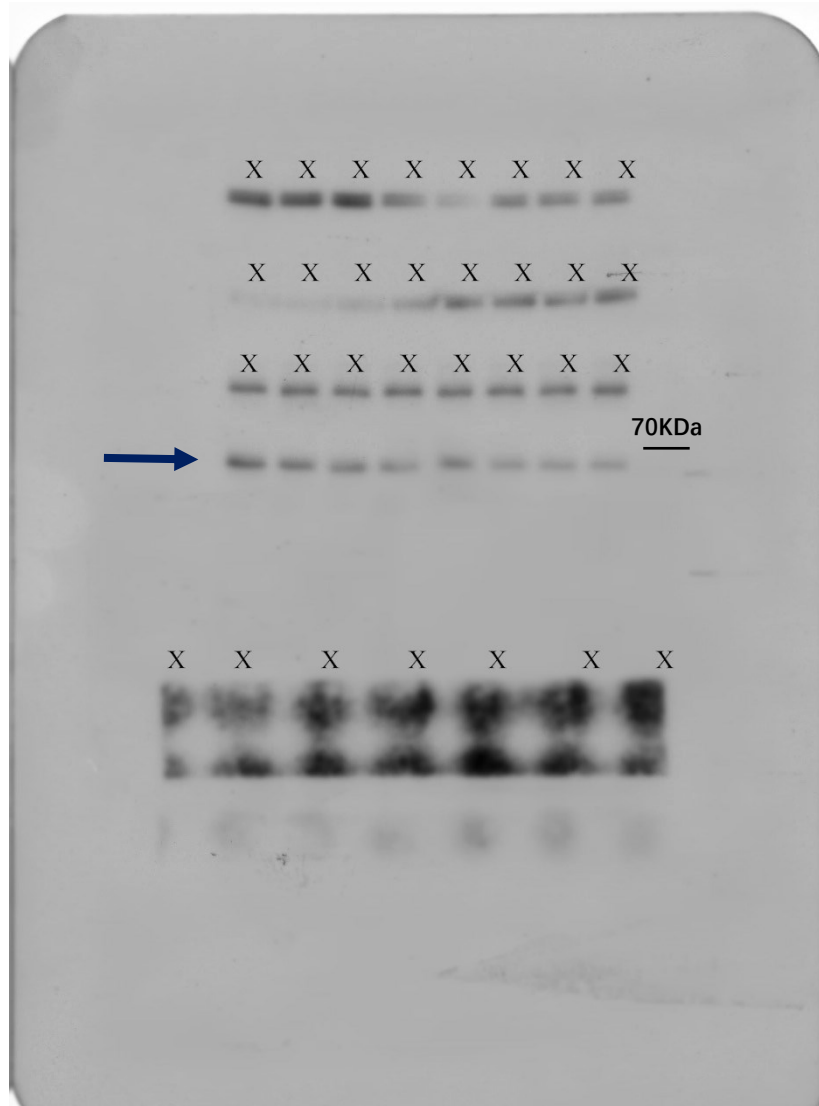
Actin

Loading order ⟶

Identity of experimental samples:

lane 1-4: Protein samples from the cerebellum of young (3M) mice 1-4; lane 5-8: Protein samples from the cerebellum of old (20M) mice 1-4.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S1S _Fig
Menin

Loading order ————————————————▶

Identity of experimental samples:

lane 1-2: Protein samples from the hypothalamus of 3M wildtype mice 1-2; lane 3-4: Protein samples from the hypothalamus of 10M wildtype mice 1-2; lane 5-6: Protein samples from the hypothalamus of 16M wildtype mice 1-2; lane 7-8: Protein samples from the hypothalamus of 20M wildtype mice 1-2.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

Actin

40KDa

Loading order ———————————▶

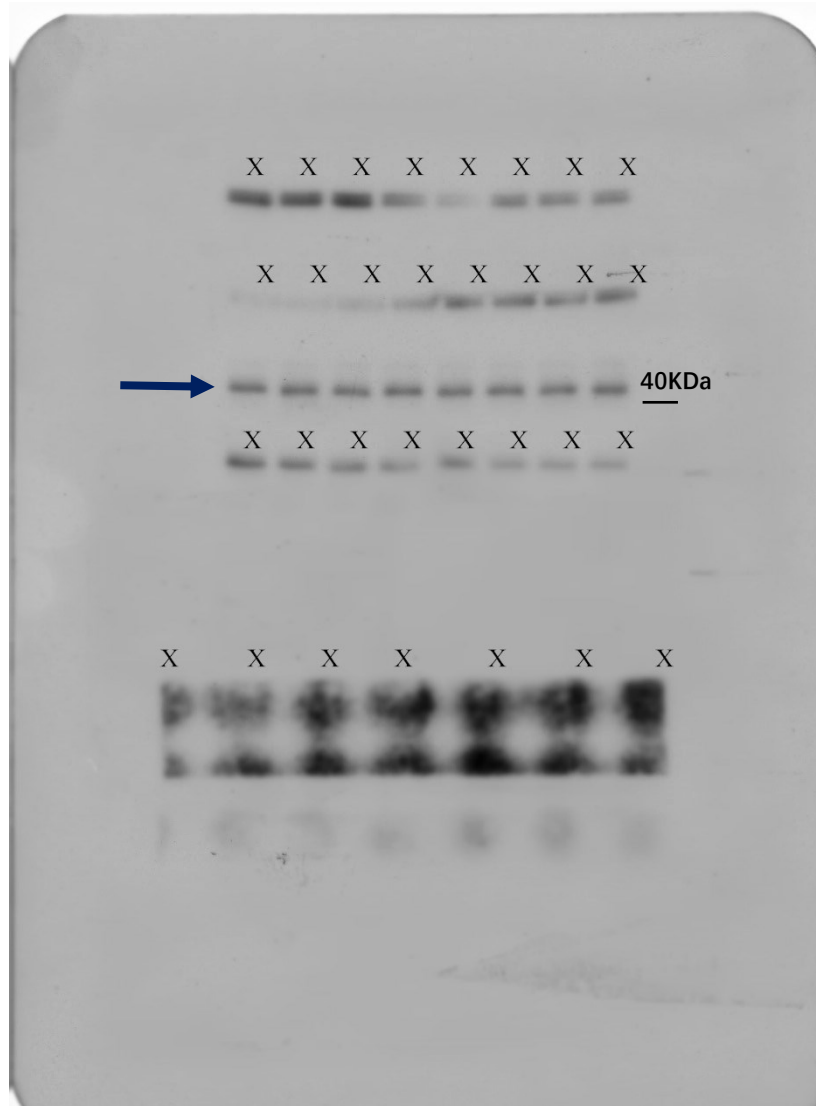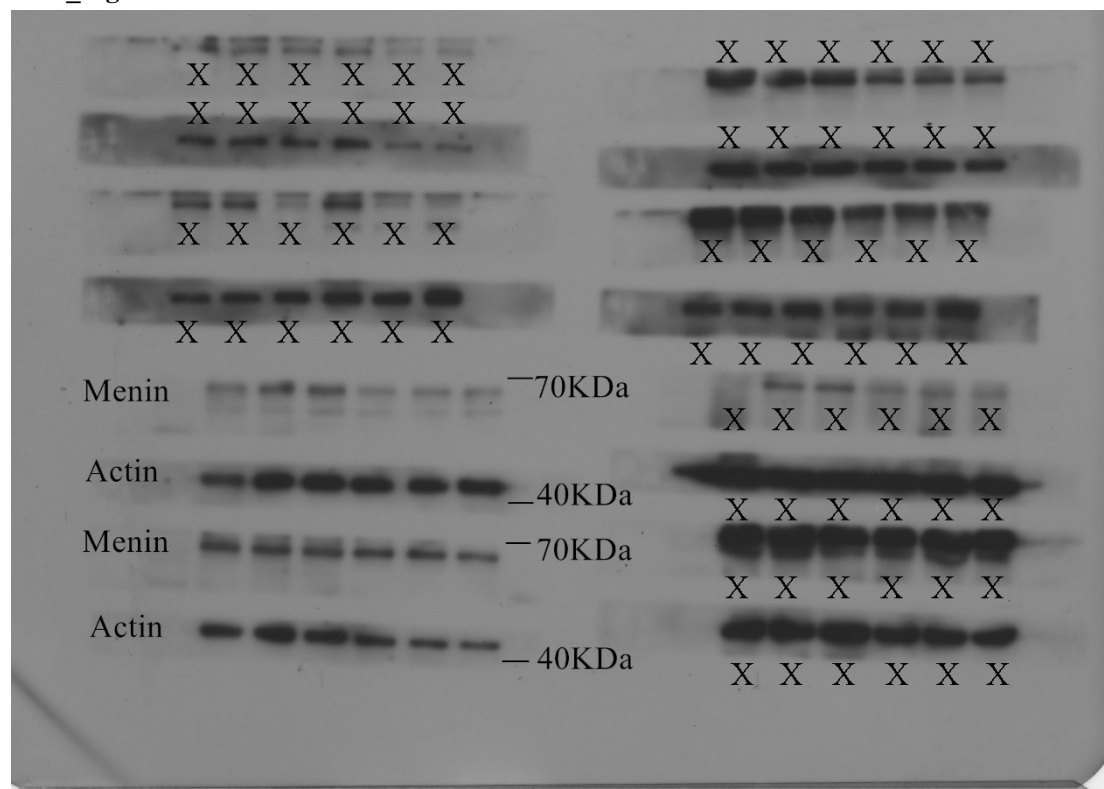**Identity of experimental samples:**

lane 1-2: Protein samples from the hypothalamus of 3M wildtype mice 1-2; lane 3-4: Protein samples from the hypothalamus of 10M wildtype mice 1-2; lane 5-6: Protein samples from the hypothalamus of 16M wildtype mice 1-2; lane 7-8: Protein samples from the hypothalamus of 20M wildtype mice 1-2.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

SourceData_Gel_ S4 _Fig

S4A _Fig

Loading order ──────────────►

Identity of experimental samples:

lane 1-3: Protein samples from the adrenal grand of 6M male wildtype mice 1-3; lane4-6: Protein samples from the adrenal grand of 6M male ScKO mice 1-3; lane 1-3: Protein samples from the adrenal grand of 6M male wildtype mice 1-3; lane 4-6: Protein samples from the adrenal grand of 6M male ScKO mice 1-3;

lane 1-3: Protein samples from the adrenal grand of 6M female wildtype mice 1-3; lane 4-6: Protein samples from the adrenal grand of 6M female ScKO mice 1-3;
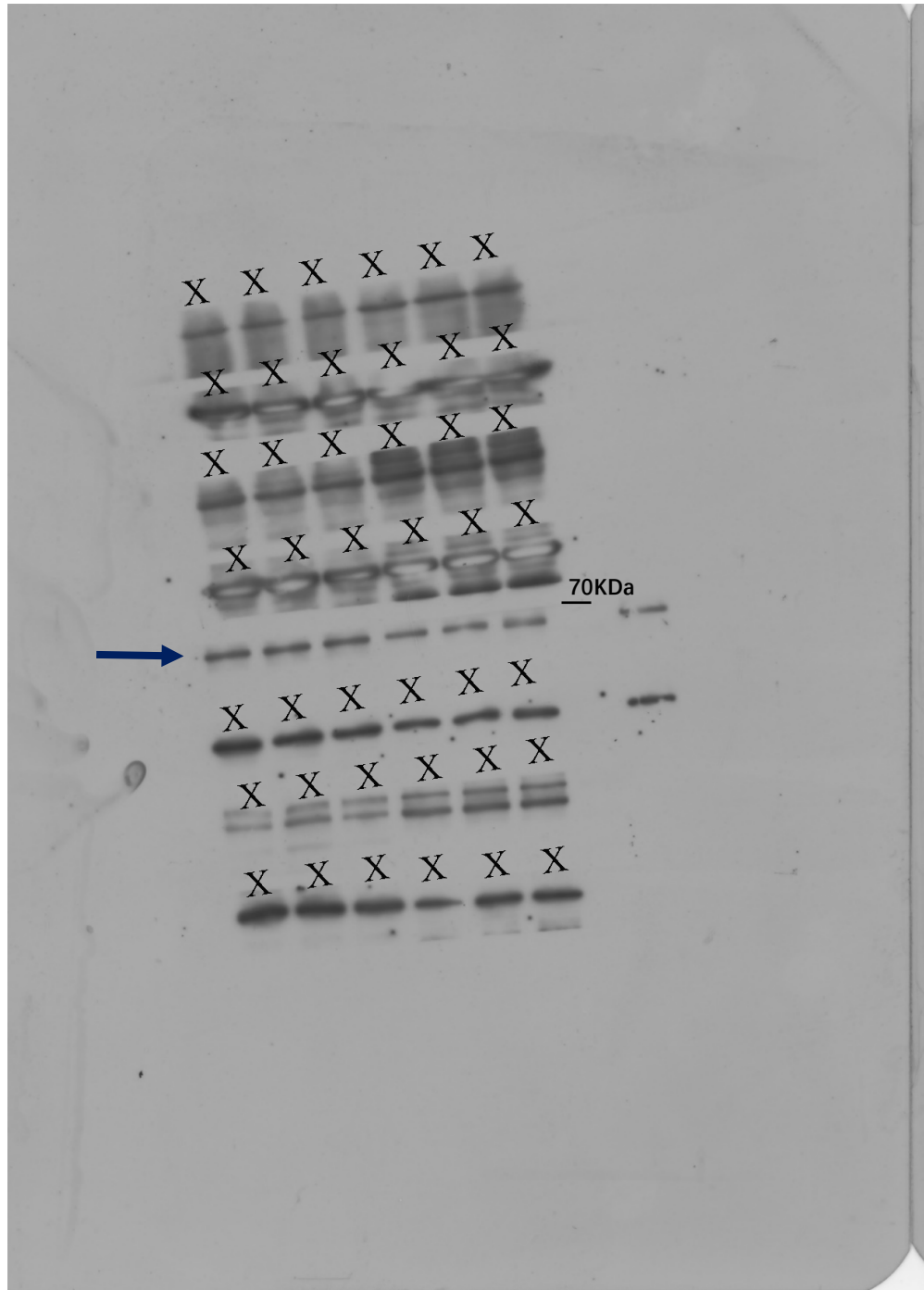
lane 1-3: Protein samples from the adrenal grand of 6M female wildtype mice 1-3; lane 4-6: Protein samples from the adrenal grand of 6M female ScKO mice 1-3;

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S4C _Fig

Menin

70KDa

Loading order ⟶

Identity of experimental samples:

lane 1-3: Protein samples from the pituitary of 6M male wildtype mice 1-3; lane 4-6: Protein samples from the pituitary of 6M male ScKO mice 1-3;

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

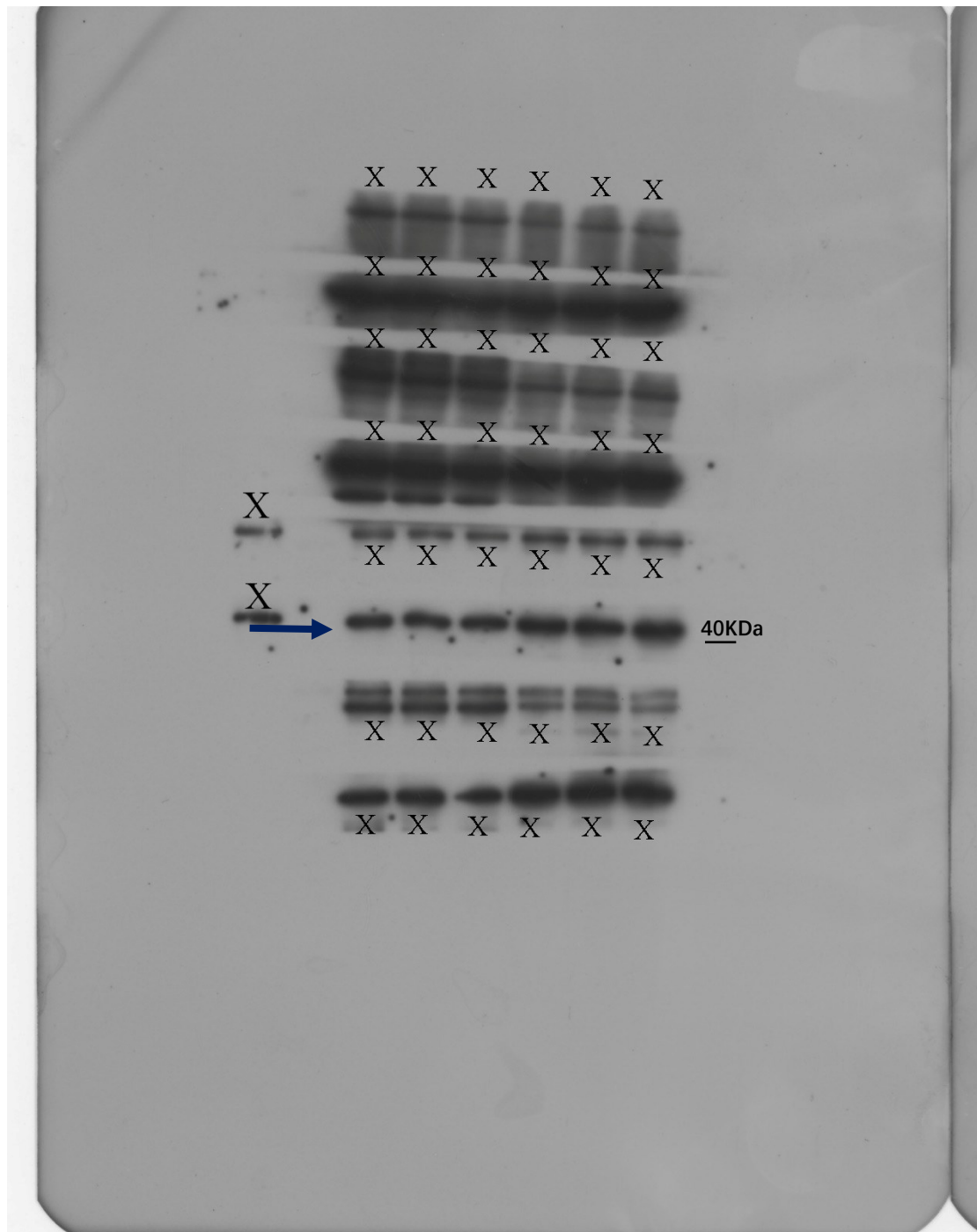**Actin**

Loading order ——————————➤

Identity of experimental samples:

lane 1-3: Protein samples from the pituitary of 6M male wildtype mice 1-3; lane 4-6: Protein samples from the pituitary of 6M male ScKO mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).
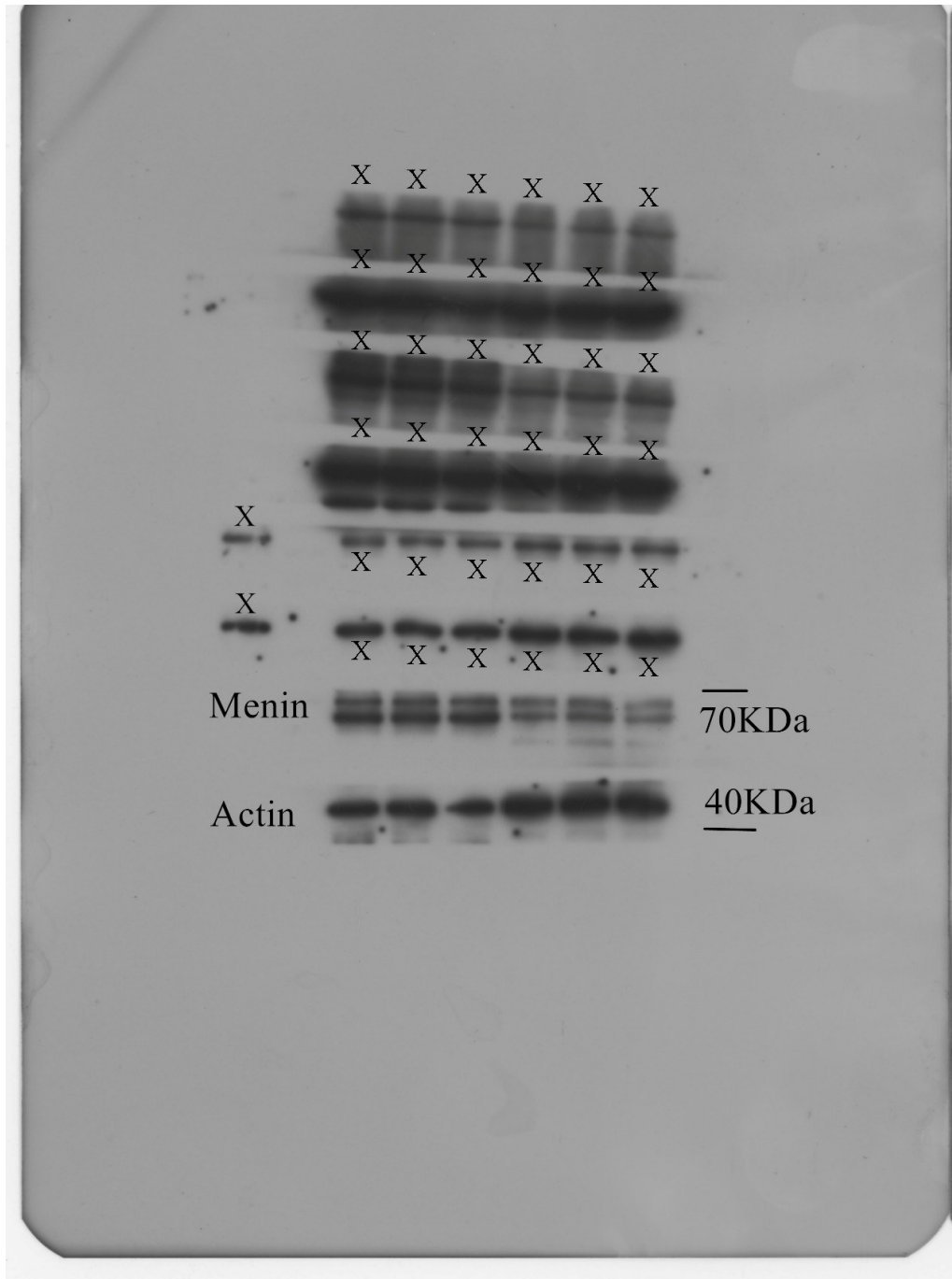
Loading order $\longrightarrow$

Identity of experimental samples:

lane 1-3: Protein samples from the pituitary of 6M female wildtype mice 1-3; lane 4-6: Protein samples from the pituitary of 6M female ScKO mice 1-3;
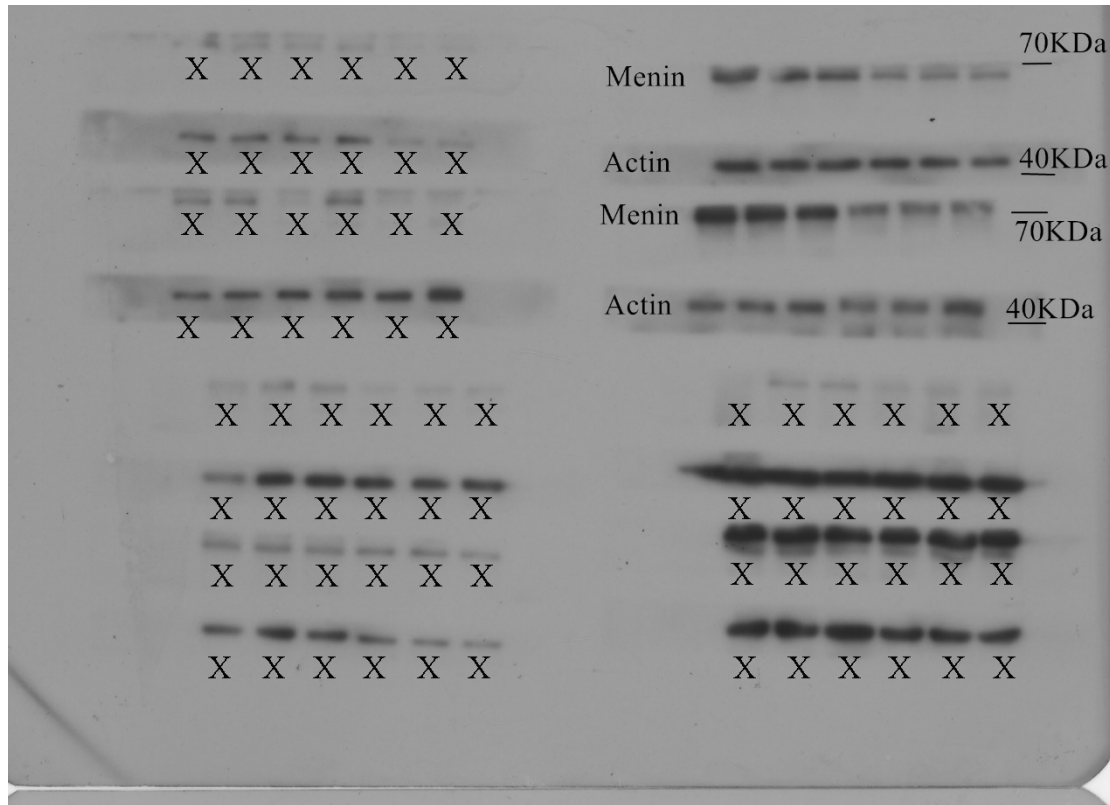
lane 1-3: Protein samples from the pituitary of 6M female wildtype mice 1-3; lane 4-6: Protein samples from the pituitary of 6M female ScKO mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S4E _Fig

Loading order ─────────────────▶

Identity of experimental samples:

lane 1-3: Protein samples from the sexual grand of 6M male wildtype mice 1-3; lane 4-6: Protein samples from the sexual grand of 6M male ScKO mice 1-3;

lane 1-3: Protein samples from the sexual grand of 6M male wildtype mice 1-3; lane 4-6: Protein samples from the sexual grand of 6M male ScKO mice 1-3;

lane 1-3: Protein samples from the sexual grand of 6M female wildtype mice 1-3; lane 4-6: Protein samples from the sexual grand of 6M female ScKO mice 1-3;
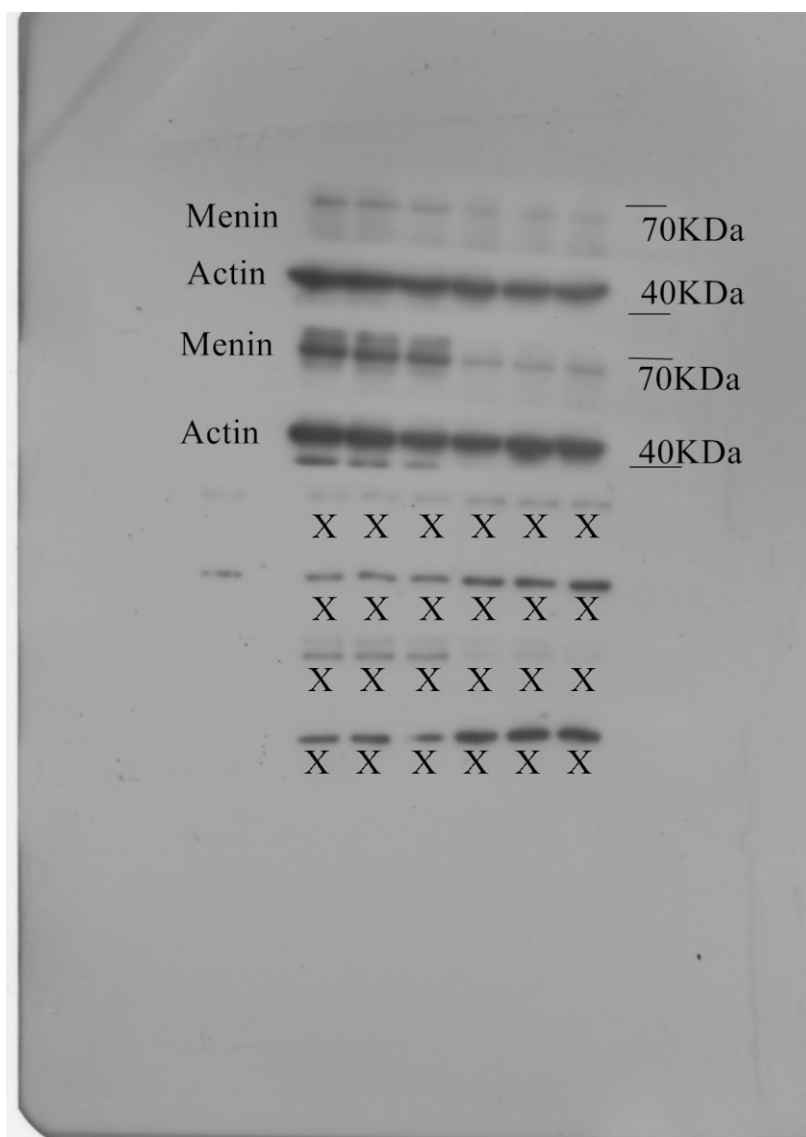
lane 1-3: Protein samples from the sexual grand of 6M female wildtype mice 1-3; lane 4-6: Protein samples from the sexual grand of 6M female ScKO mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA).

S4G _Fig

Loading order ⟶

Identity of experimental samples:

lane 1-3: Protein samples from the spleen of 6M male wildtype mice 1-3; lane 4-6: Protein samples from the spleen of 6M male ScKO mice 1-3;

lane 1-3: Protein samples from the spleen of 6M male wildtype mice 1-3; lane 4-6: Protein samples from the spleen of 6M male ScKO mice 1-3;

lane 1-3: Protein samples from the spleen of 6M female wildtype mice 1-3; lane 4-6: Protein samples from the spleen of 6M female ScKO mice 1-3;

lane 1-3: Protein samples from the spleen of 6M female wildtype mice 1-3; lane 4-6: Protein samples from the spleen of 6M female ScKO mice 1-3.

Method used to capture the image:

Chemiluminescence. The bands were captured by developer and fixing solution on medical blue sensitive x-ray film (Baiyun, China), then the bands on the blots were scanned and analyzed with ImageJ (National Institutes of Health, Bethesda, MD, USA)