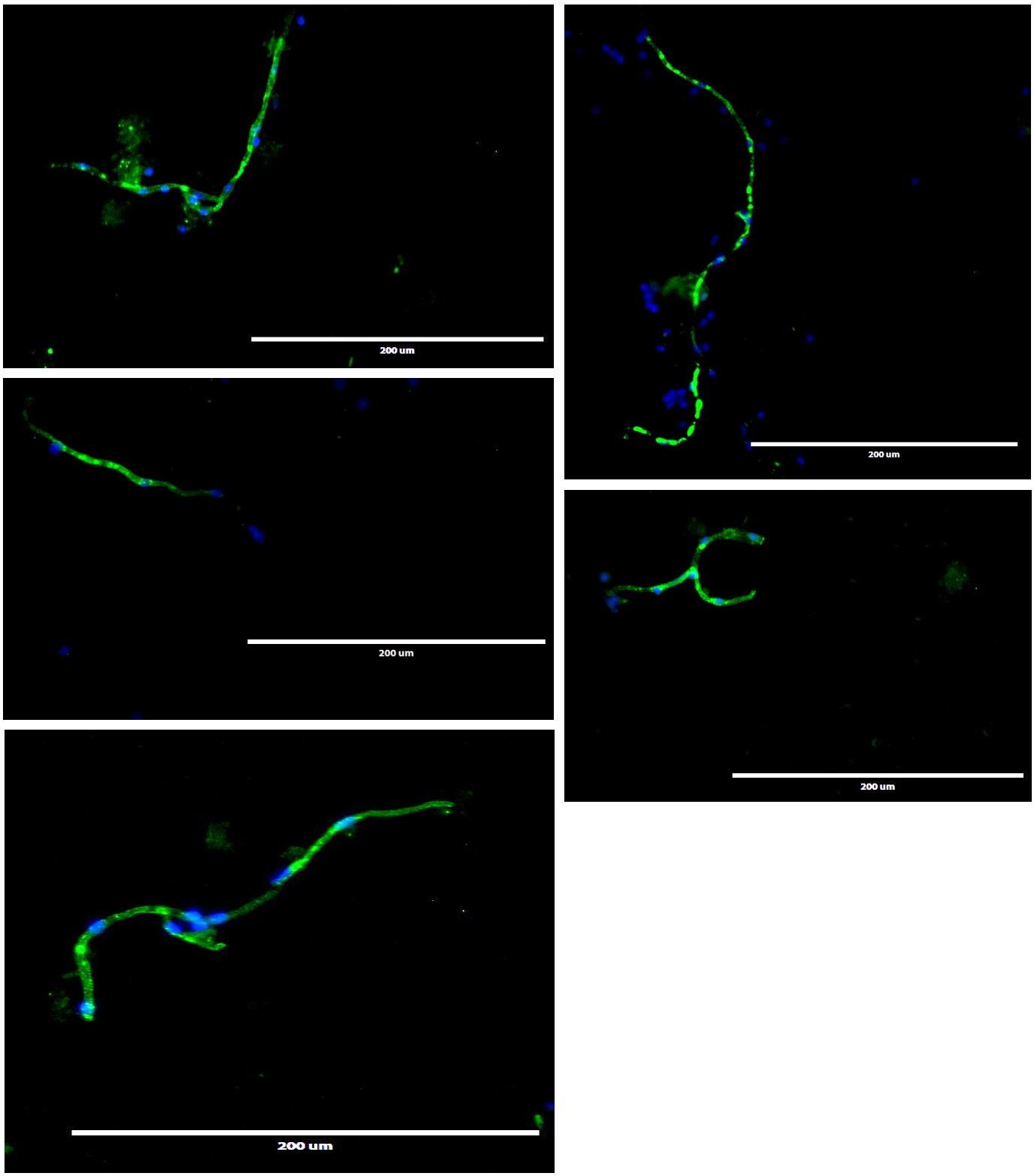
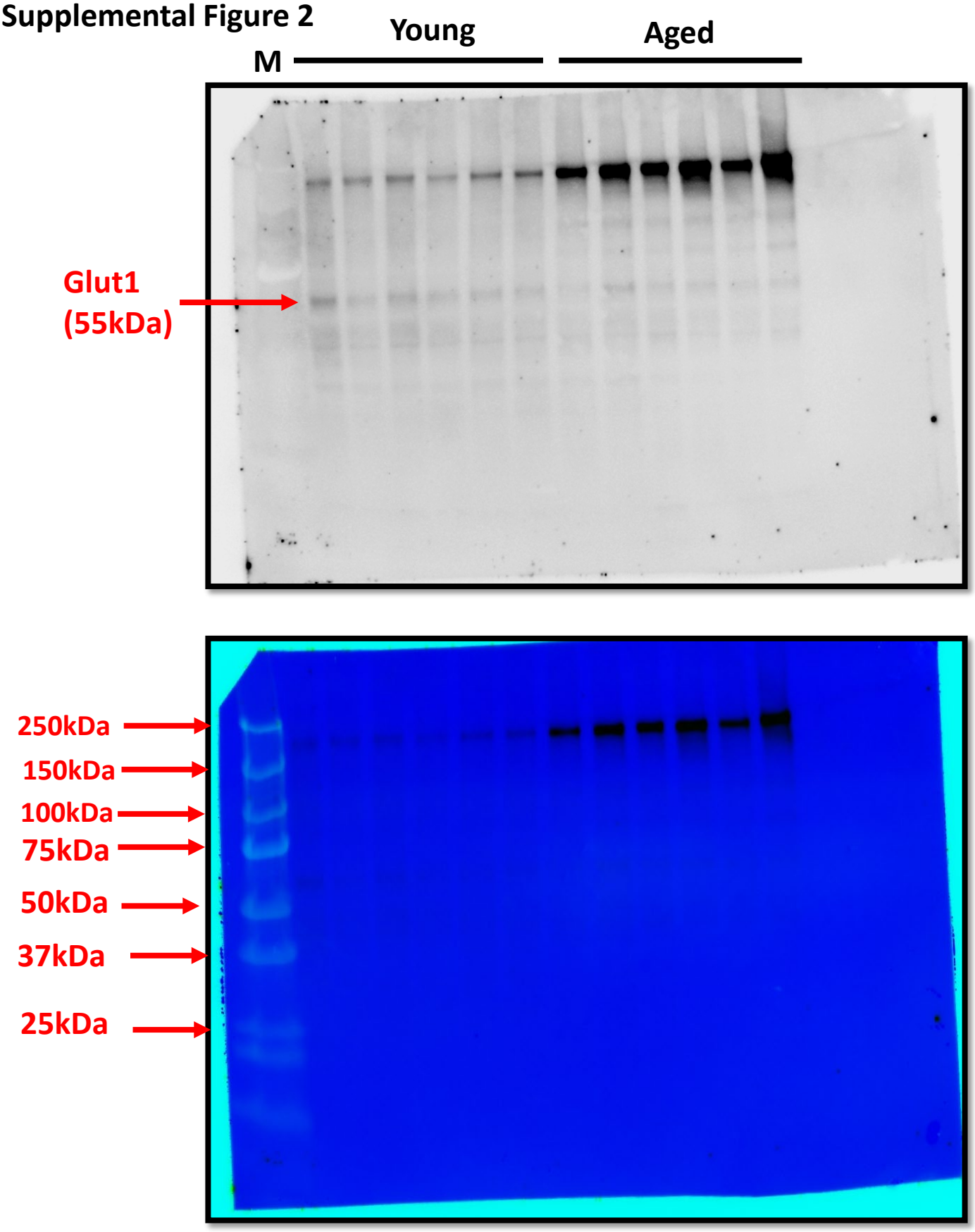
Supplemental Figure 1



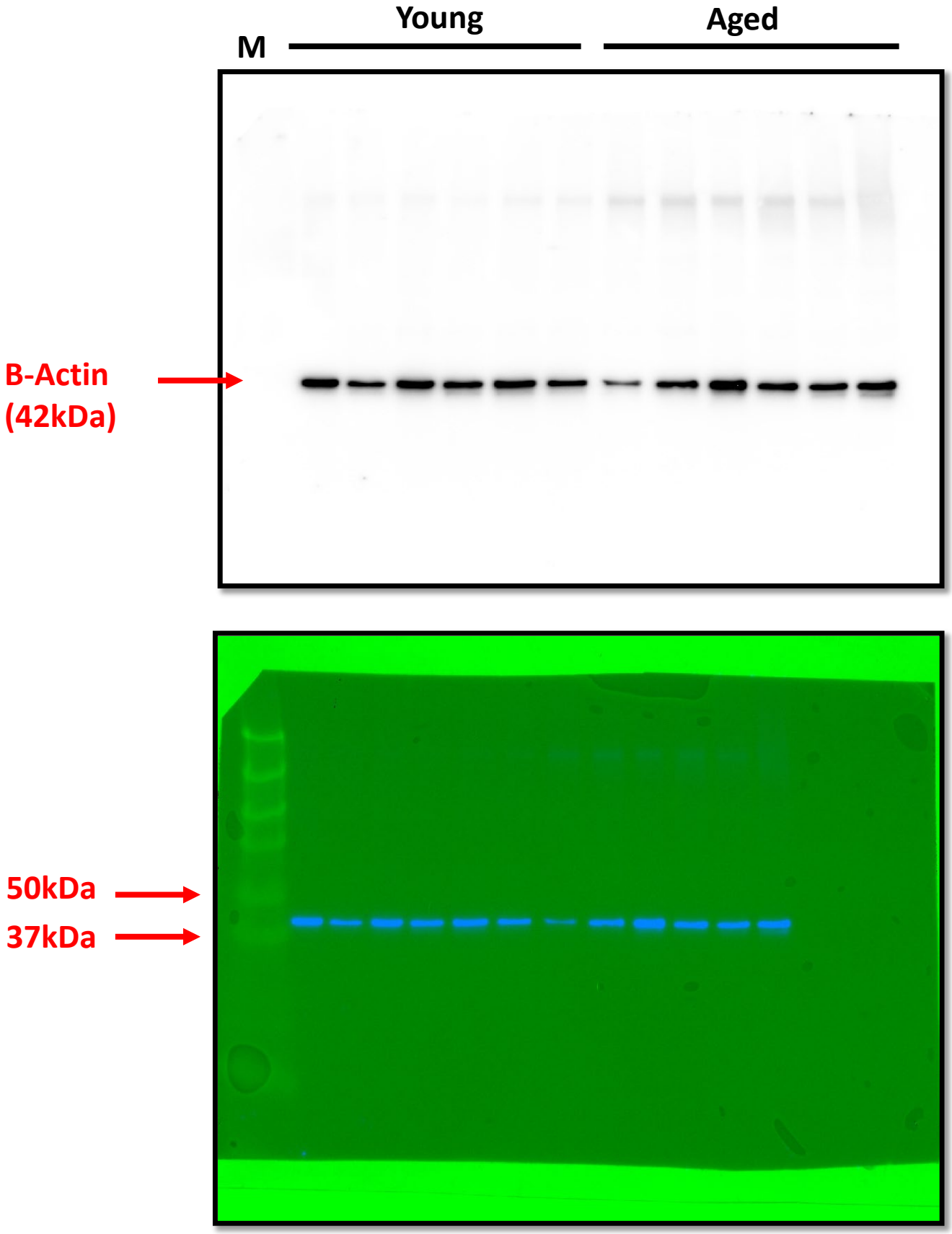
Immunohistochemical analysis of Pericytes in the brain microvessels. Microvessels were fixed in 4% paraformaldehyde for 20 minutes at RT followed by washing and blocking (2% BSA in PBST). Later the vessels were incubated overnight at 4^{o}C with NG2 antibody (Santa Cruz biotechnology, sc-53389; dilution of 1:500) followed by washing and incubation with 2nd antibody after two hours at room temperature (Alexa flour 488-conjugated anti-mouse, A11029, Life technologies). Vessels were washed placed on the glass slide with mounting media containing DAPI. Fluorescence images (20X) were acquired using EVOS microscope (Thermofisher). Representative images of microvessels with green fluorescence are shown identifying pericytes in the brain microvessels.

Supplemental Figure 2



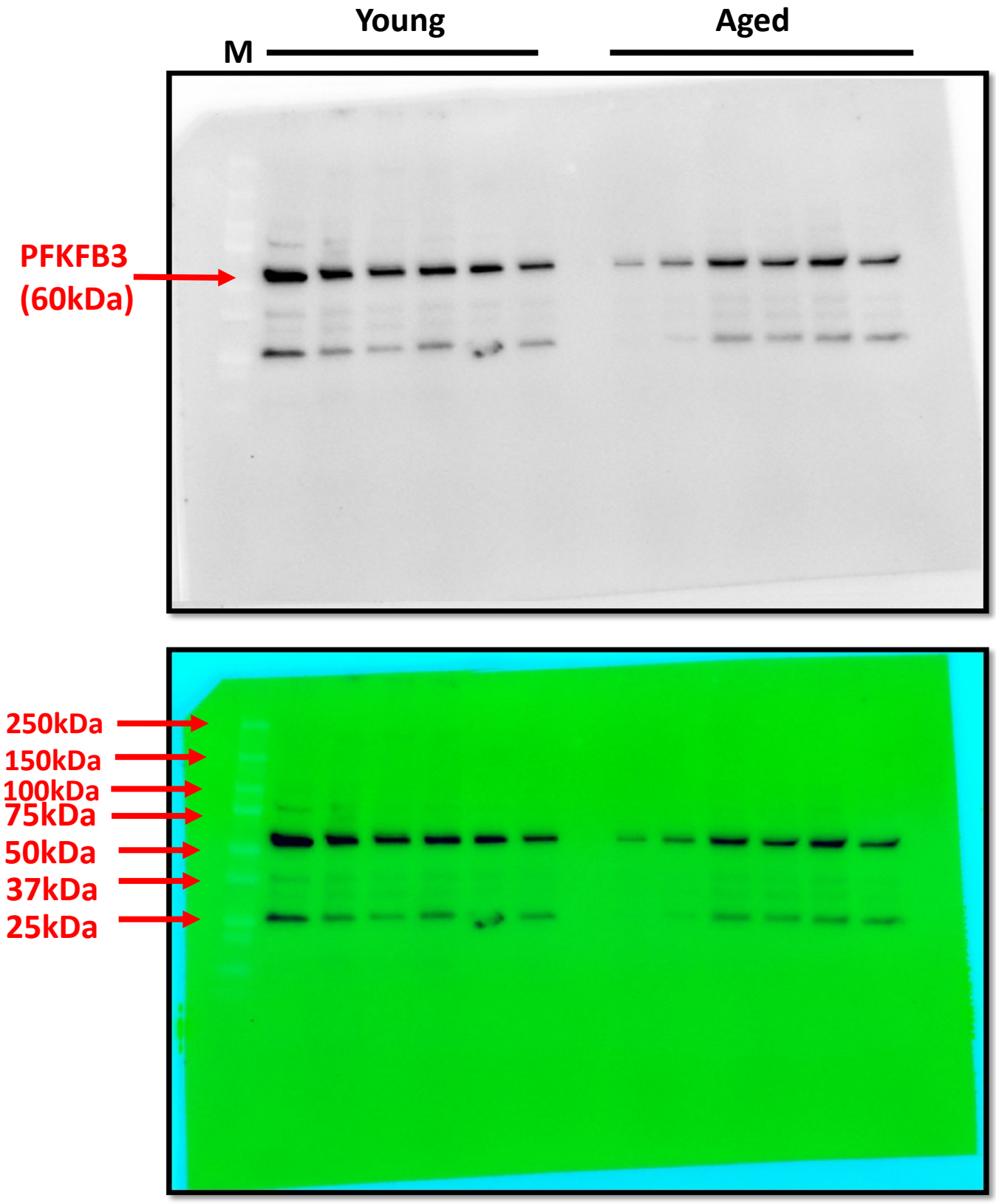
Original blot of GLUT1 in Figure 3A: Western blot analysis of Glucose transporter 1 (GLUT1). Blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with GLUT1 antibody (Novus Biologicals, NB110-39113) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 17-18 mice / phenotype. M, Marker

Supplemental Figure 3



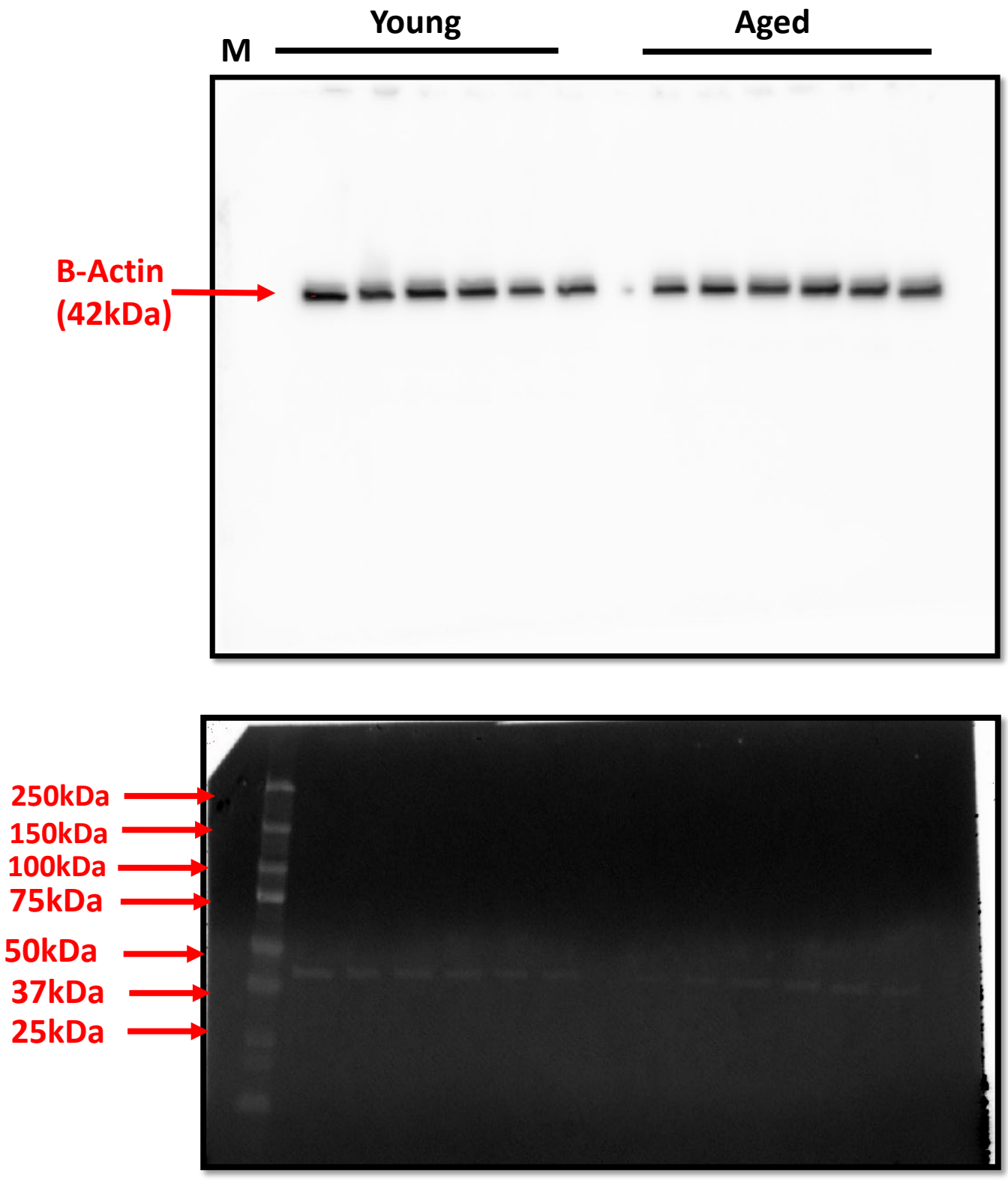
Original blot of β-Actin in and Figure 3A: Western blot analysis of β-Actin. Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with β-Actin antibody (Sigma, A5441) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 6 mice / phenotype. M, Marker

Supplemental Figure 4



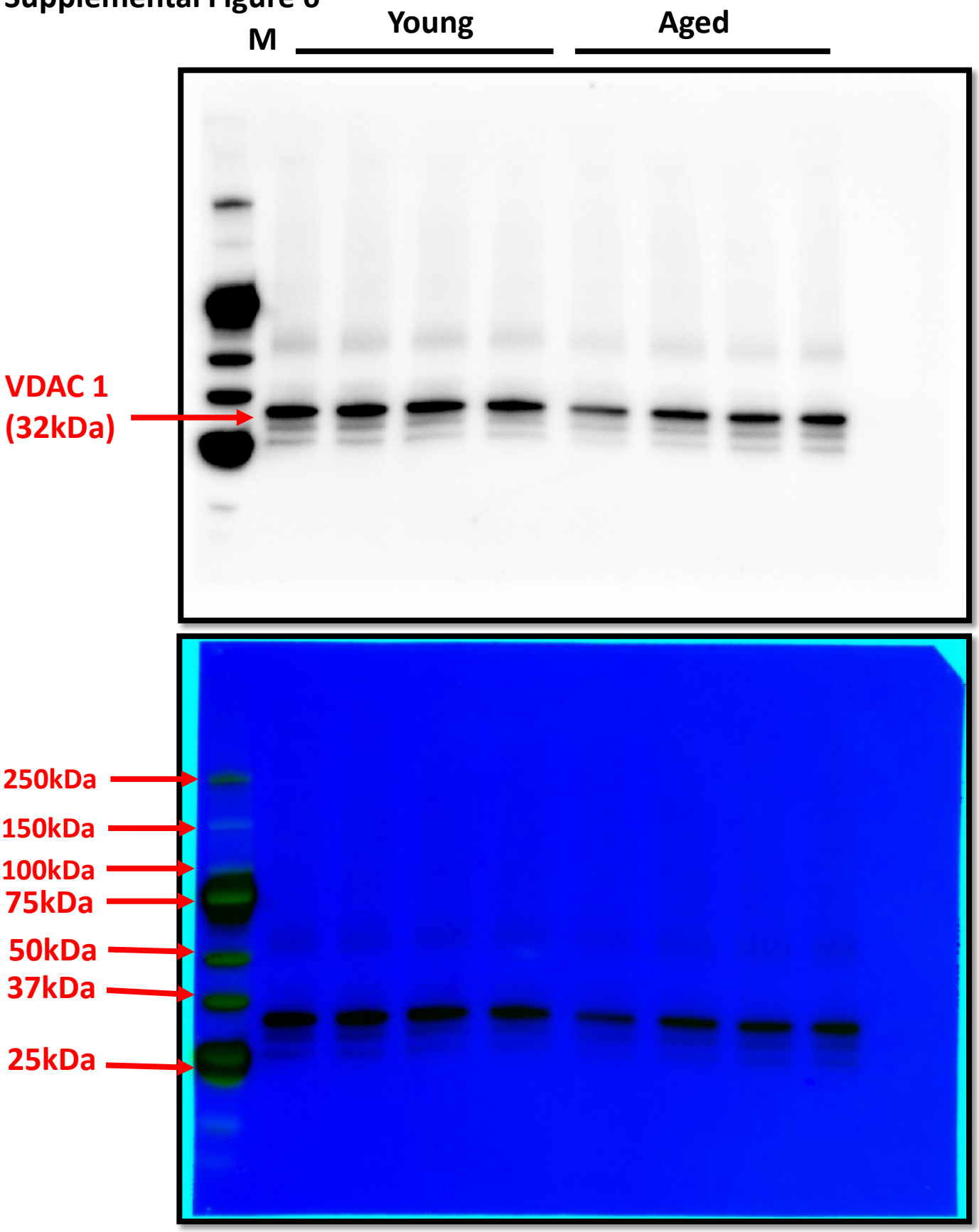
Original blot of PFKFB3 in Figure 3: Western blot analysis of 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3 (PFKFB3). Blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with PFKFB3 antibody (Cell Signaling Technology, 13123S) at a dilution of 1:5000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:10000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 12 mice / phenotype. M, Marker

Supplemental Figure 5



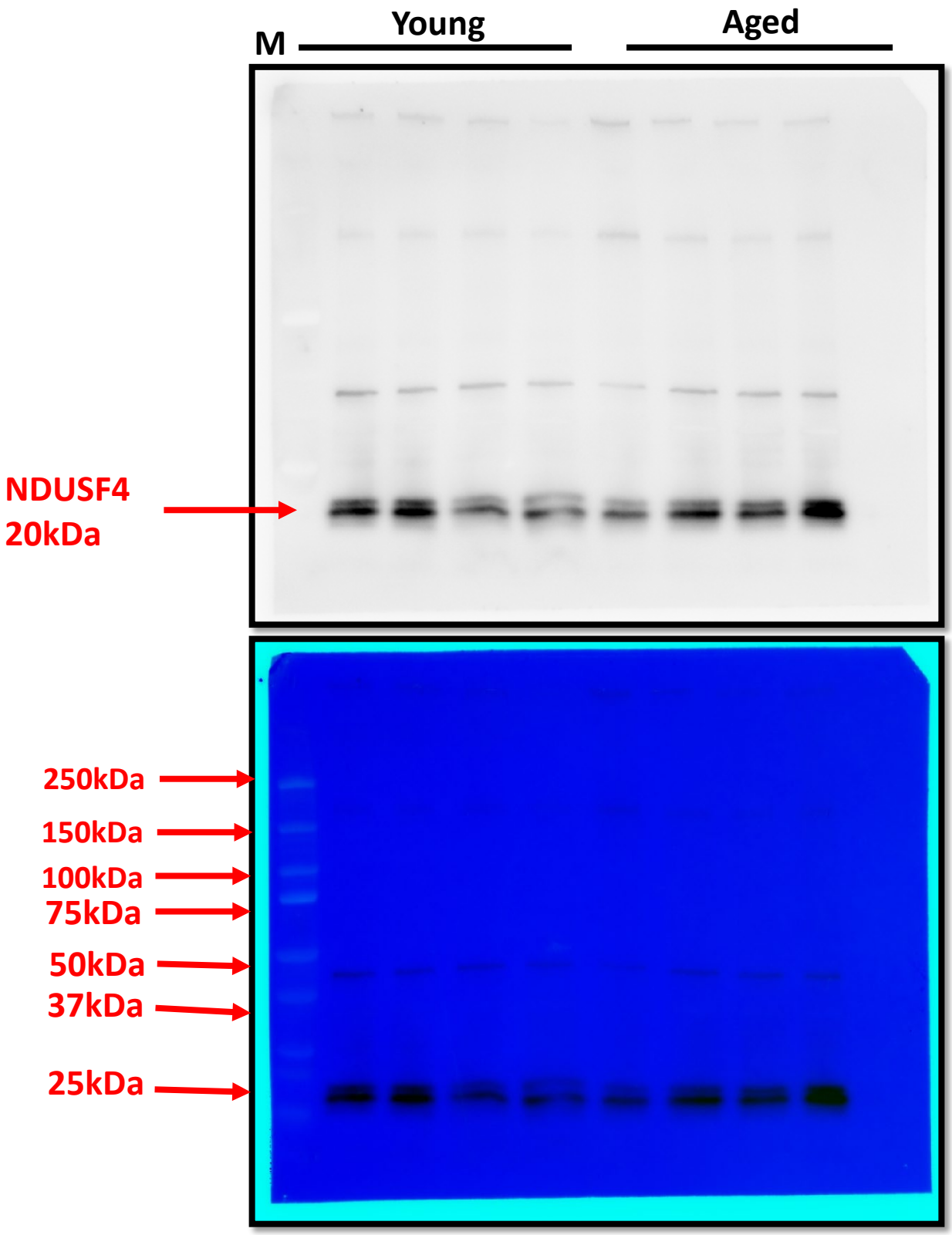
Original blot of β-Actin in and Figure 3C: Western blot analysis of β-Actin. Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with β-Actin antibody (Sigma, A5441) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 6 mice / phenotype. M, Marker

Supplemental Figure 6



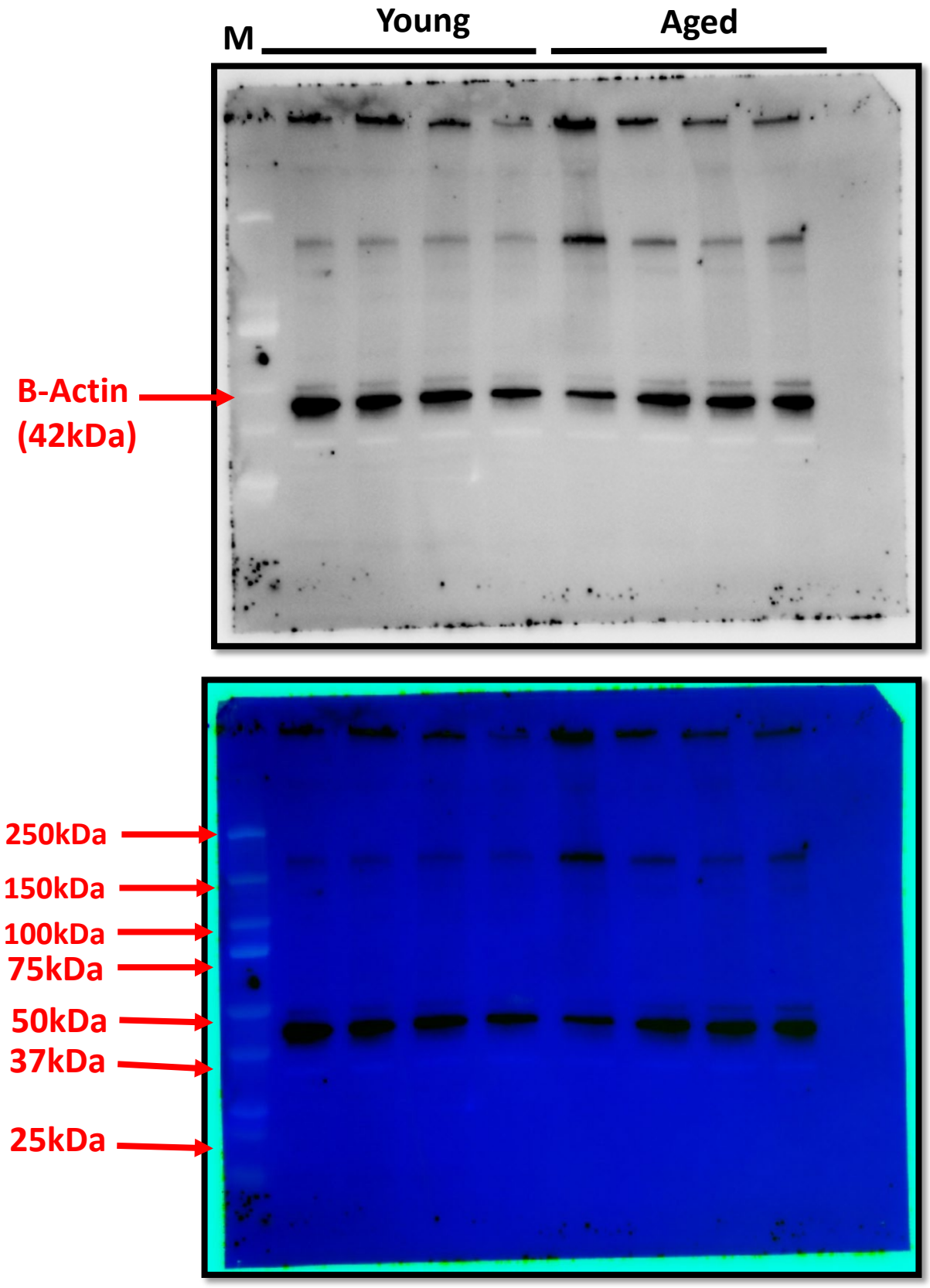
Original blot of VDAC in Figure 5:Western blot analysis of mitochondrial voltage-dependent anion channel (VDAC). Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with VDAC antibody (Abcam, ab15895) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker

Supplemental Figure 7



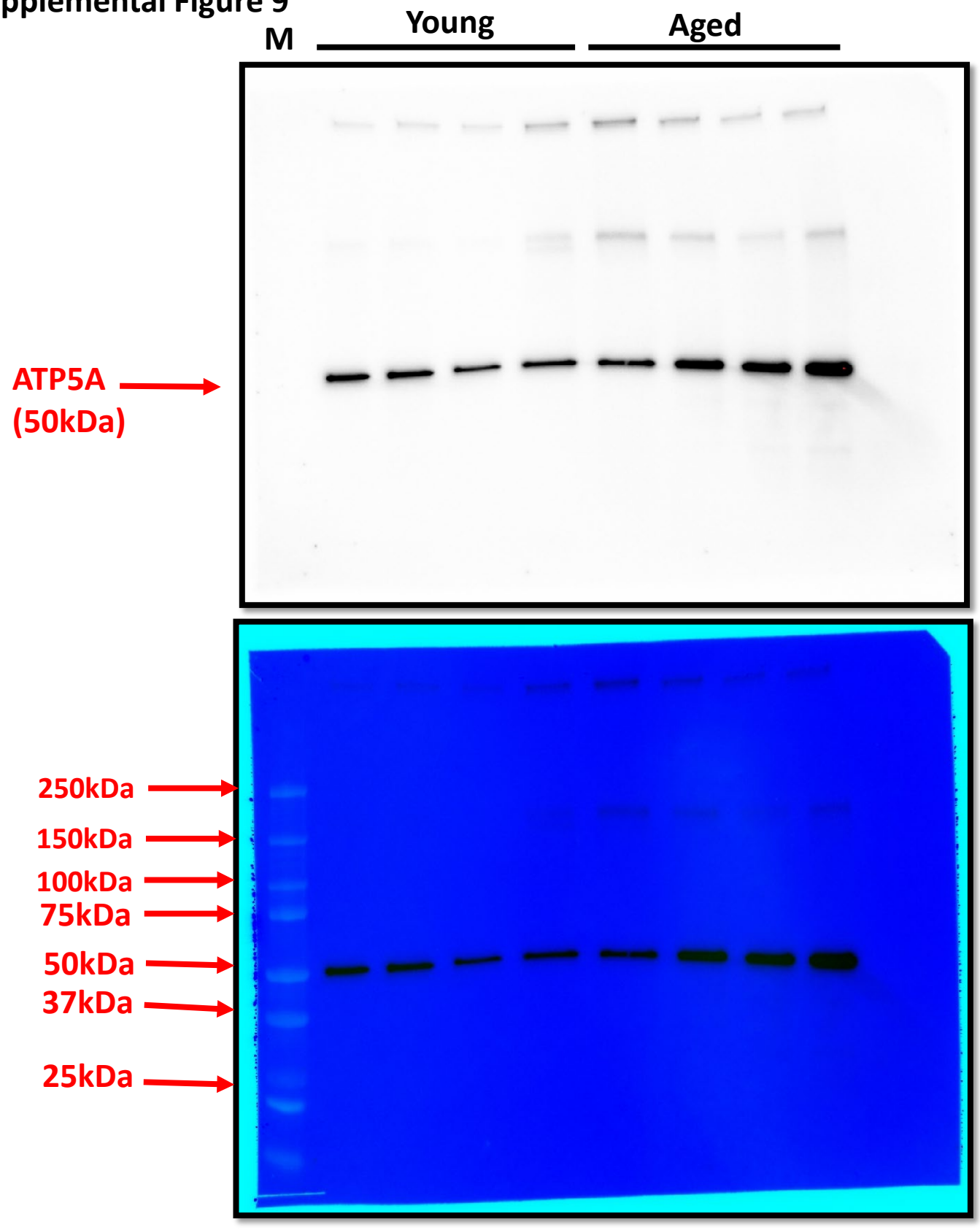
Western blot analysis of NADH:ubiquinone oxidoreductase subunit S4 (NDUSF4). Blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with NDUSF4 antibody (Santa Cruz, sc-100567) at a dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker

Supplemental Figure 8



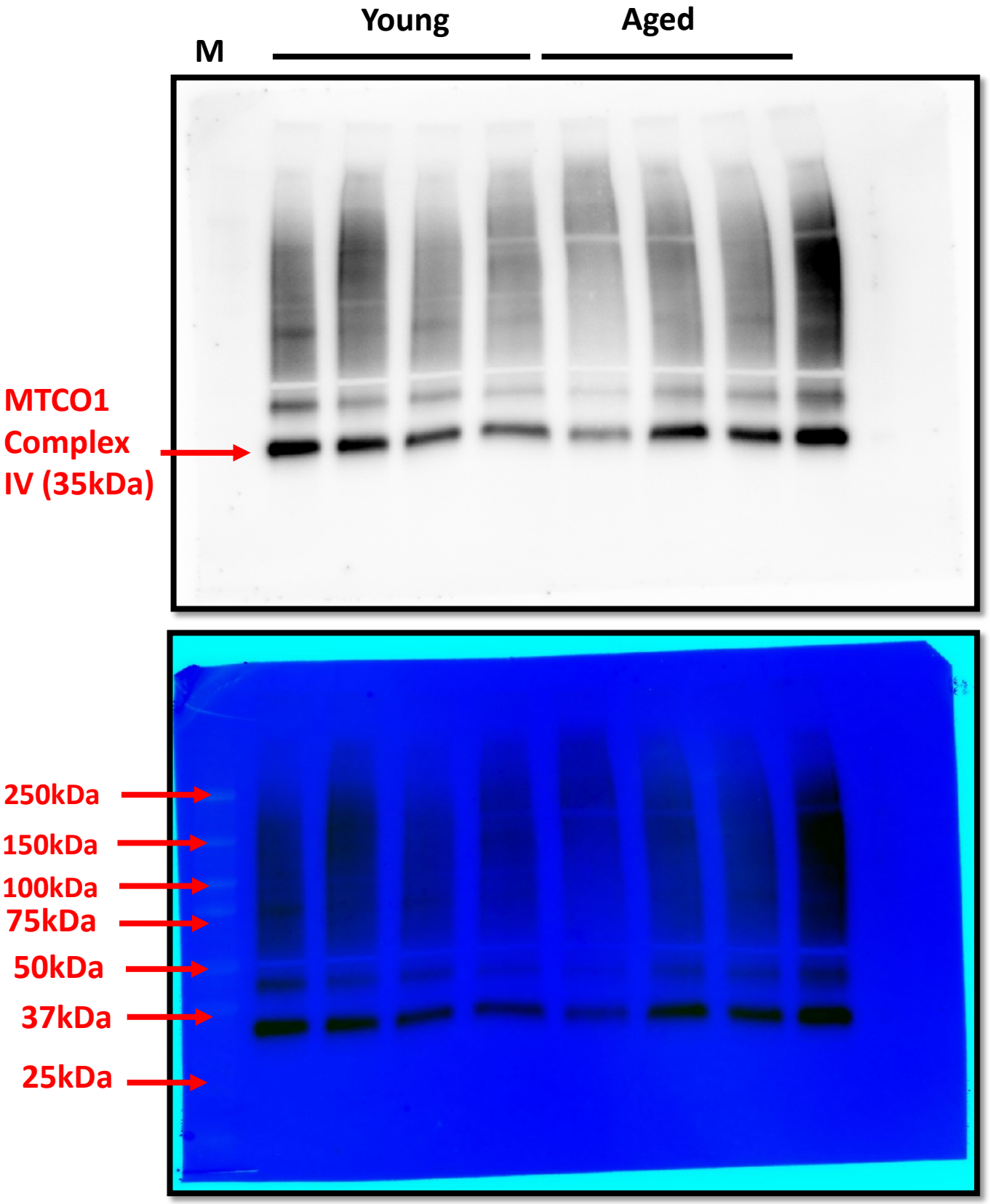
Original blot of β-Actin in and Figure 5: Western blot analysis of β-Actin. Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with β-Actin antibody (Sigma, A5441) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker

Supplemental Figure 9



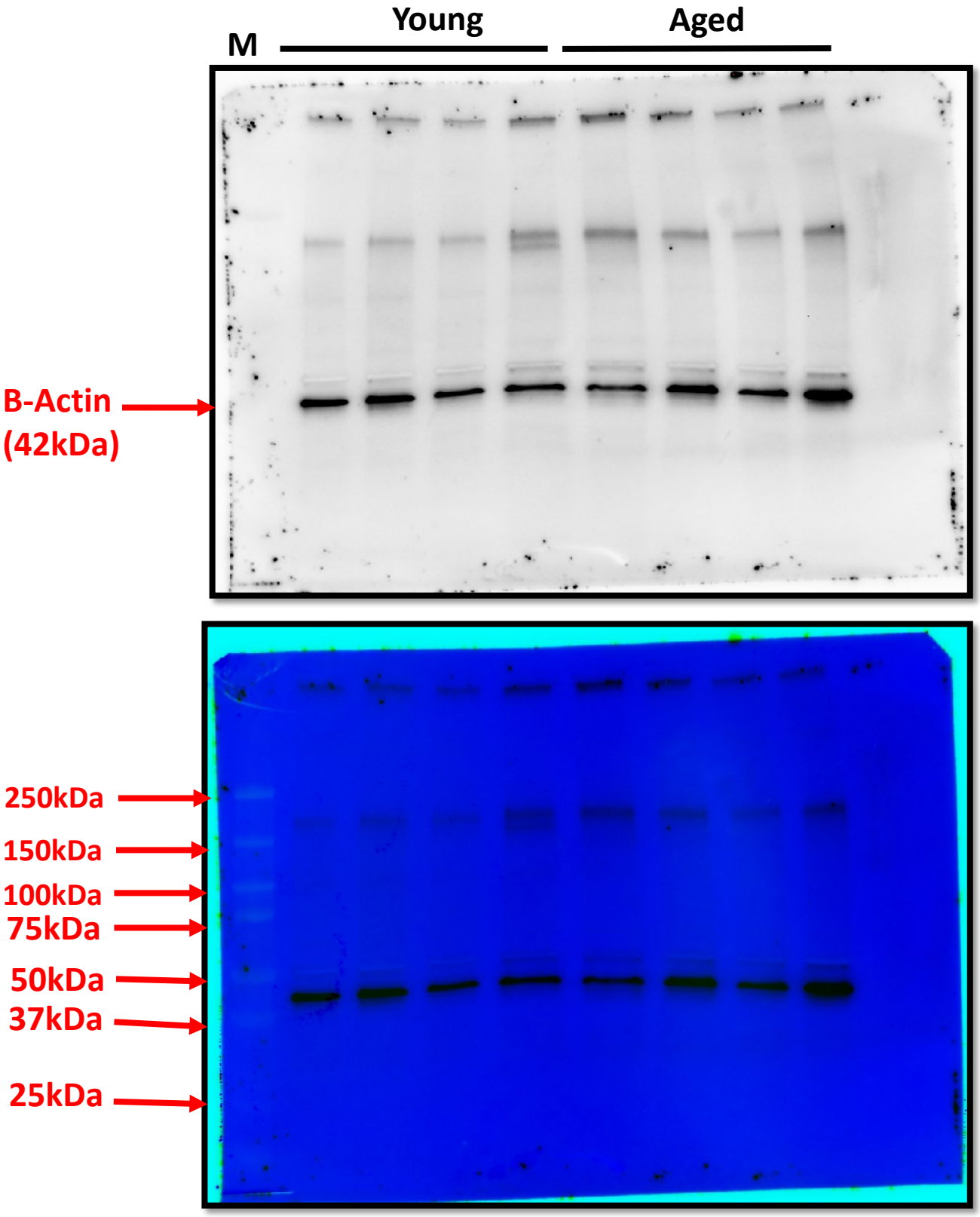
Original blot of ATP5A in Figure 5: Western blot analysis of mitochondrial complex V (ATP Synthase F1 Subunit Alpha, ATP5A). Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with ATP5A antibody (Santa Cruz, sc-136178) at a dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker

Supplemental Figure 10



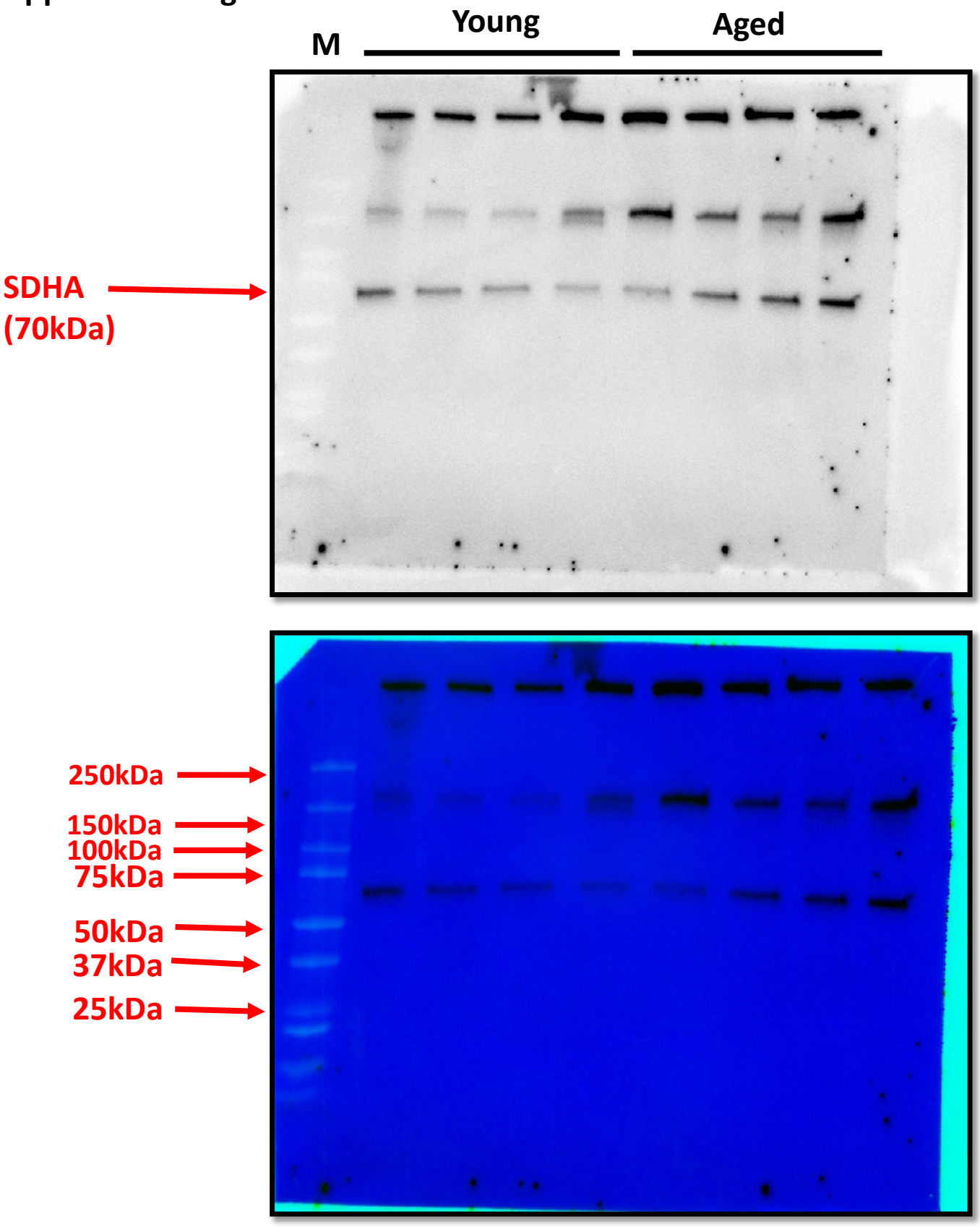
Original blot of MT-CO1 in Figure 5: Western blot analysis of complex IV (mitochondrially encoded cytochrome c oxidase I, MT-CO1). Blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with MT-CO1 antibody (Abcam, ab1470) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker.

Supplemental Figure 11



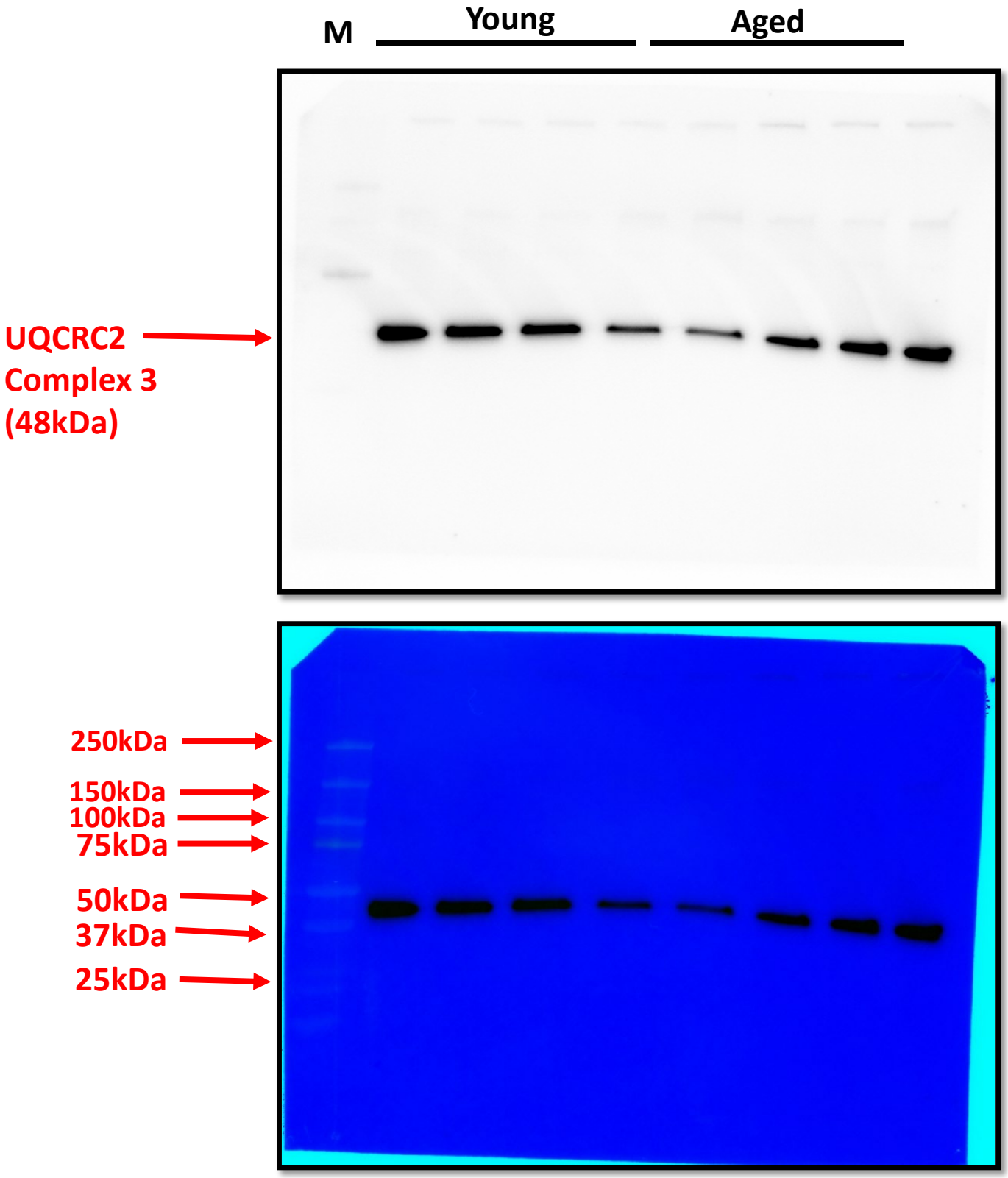
Original blot of β-Actin in and Figure 5: Western blot analysis of β-Actin. Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with β-Actin antibody (Sigma, A5441) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker

Supplemental Figure 12



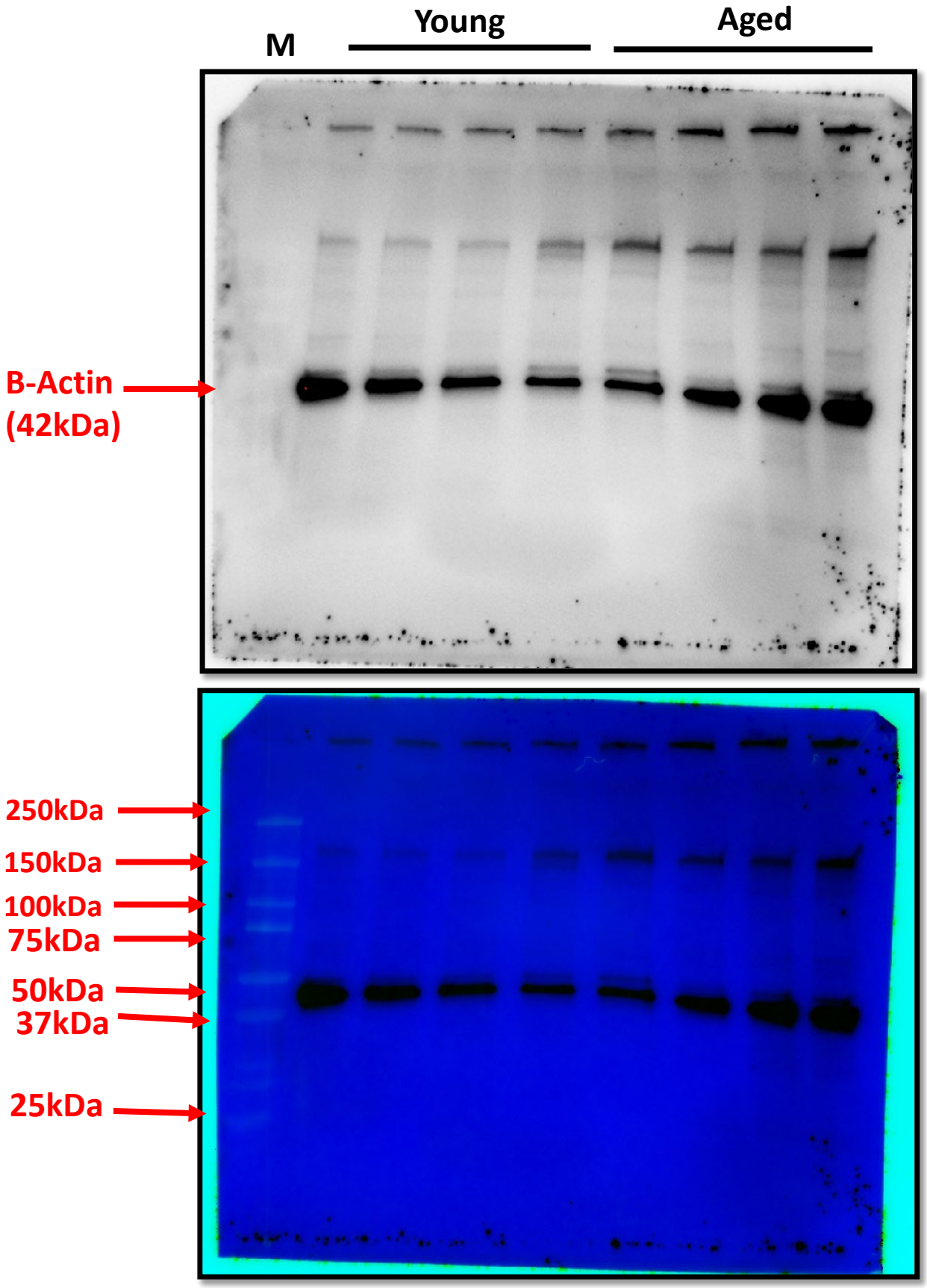
Original blot of SDHA in Figure 5: Western blot analysis of mitochondrial succinate dehydrogenase (SDH, complex 2). Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with SDHA antibody (Santa Cruz, sc-390381) at a dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker

Supplemental Figure 13



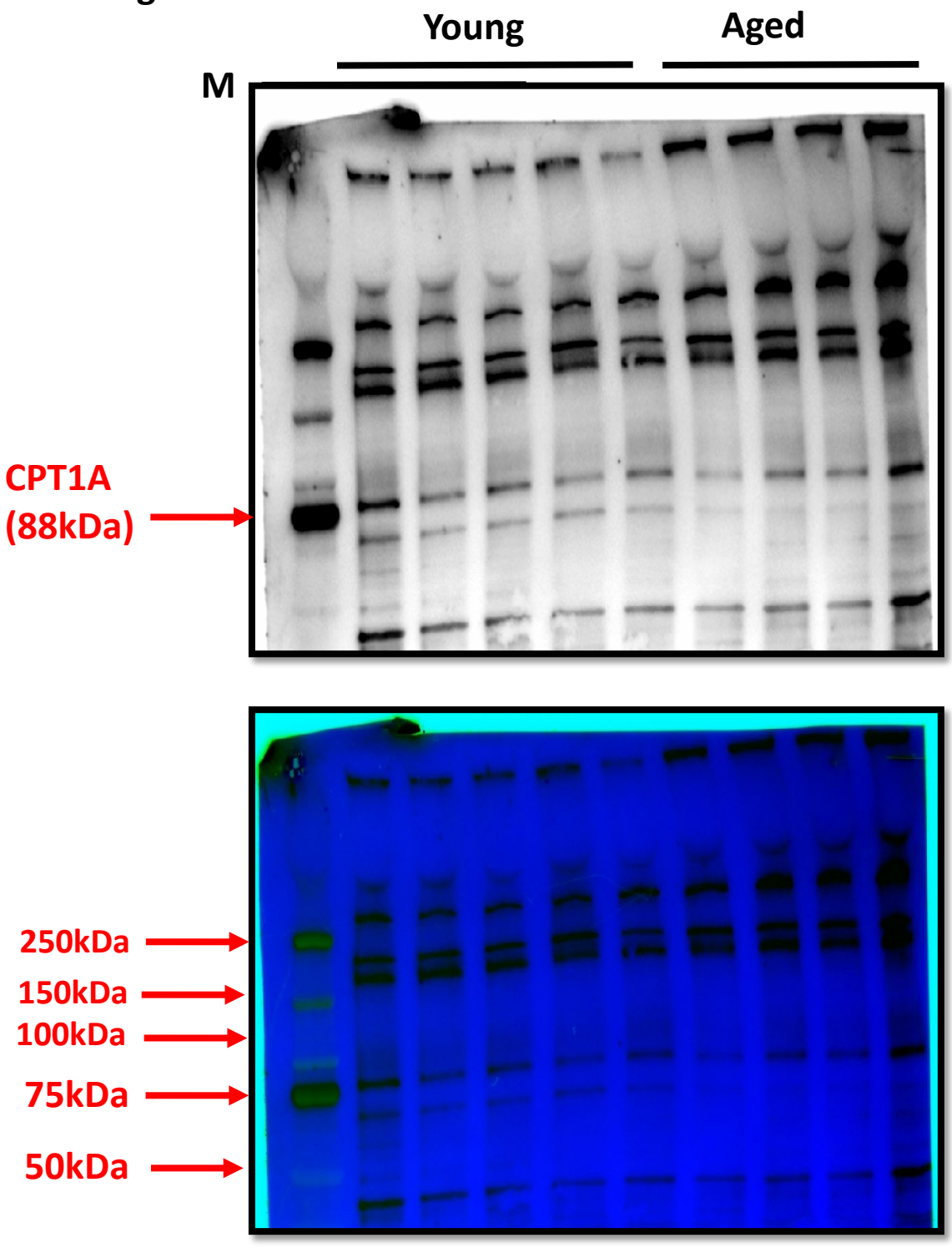
Original blot of UQCRC2 in Figure 5: Western blot analysis of mitochondrial complex III (ubiquinol-cytochrome c reductase complex core protein 2, UQCRC2). Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with UQCRC2 antibody (Santa Cruz, sc-390378) at a dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker

Supplemental Figure 14



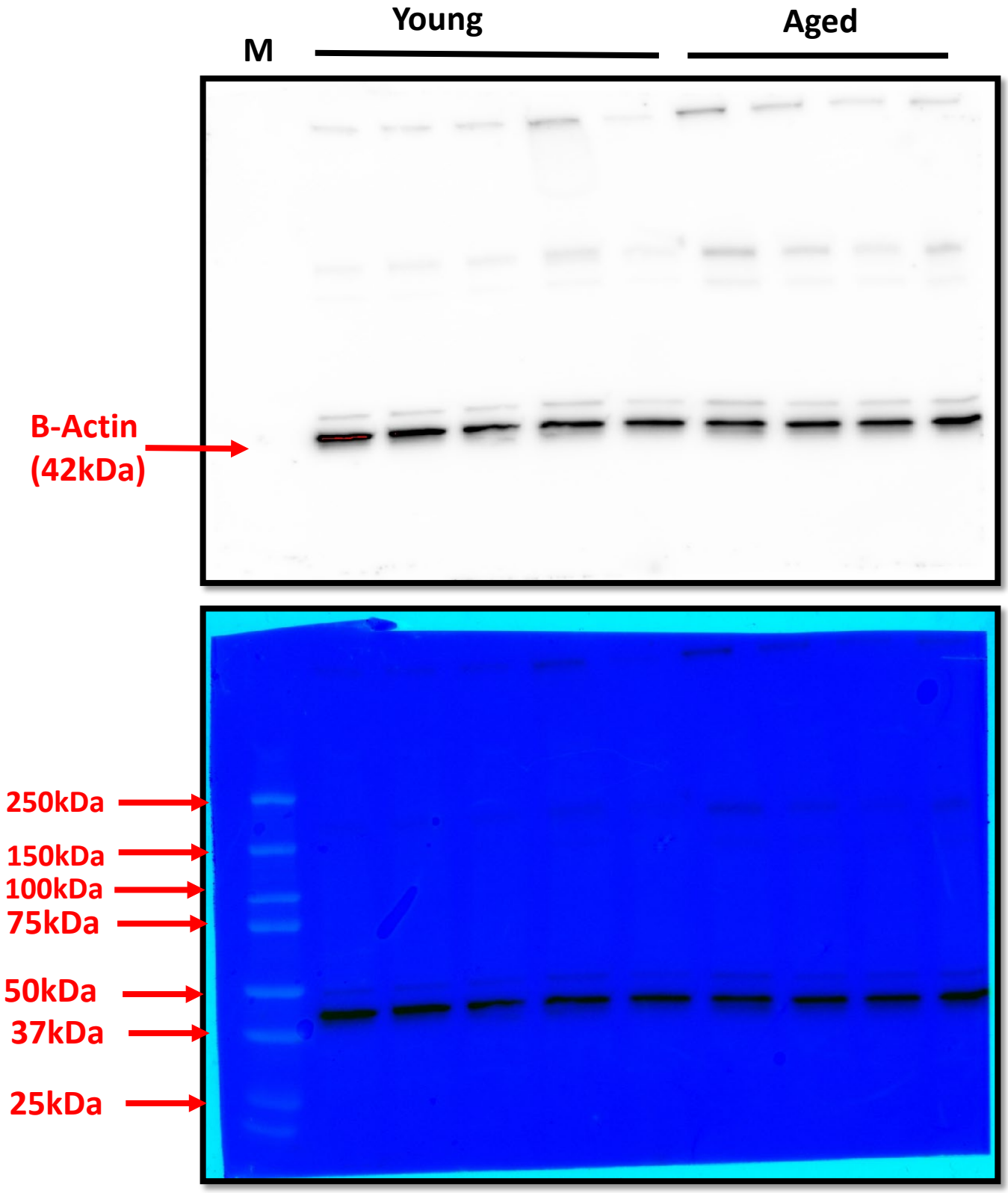
Original blot of β-Actin in and Figure 5: Western blot analysis of β-Actin. Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with β-Actin antibody (Sigma, A5441) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 10 mice / phenotype. M, Marker

Supplemental Figure 15



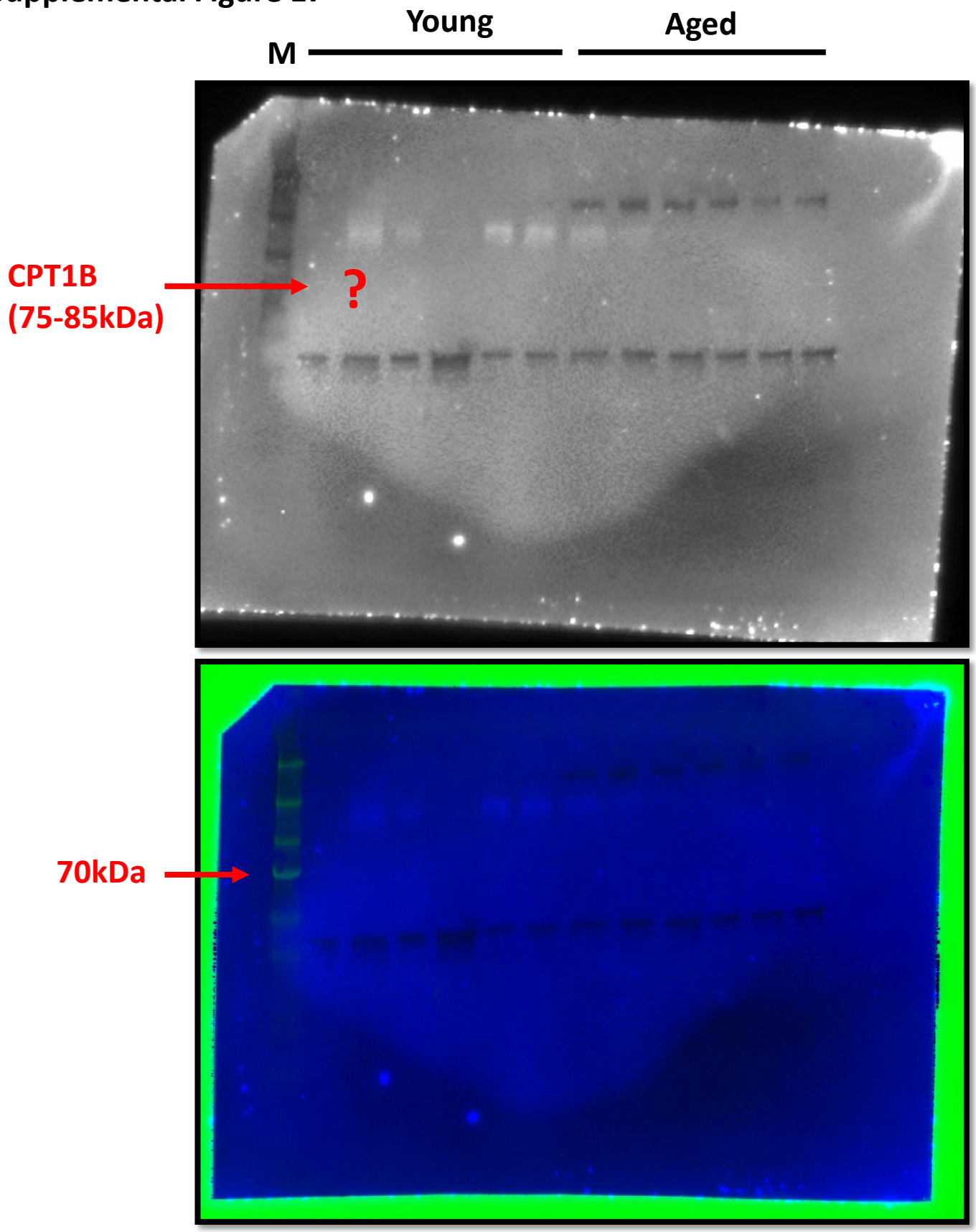
Original blot of CPT1A in Figure 6: Western blot analysis of Carnitine Palmitoyltransferase 1A (CPT1A). Blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with CPT1A antibody (Cell Signaling, NB100-53791) at a dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 11 mice / phenotype. M, Marker

Supplemental Figure 16



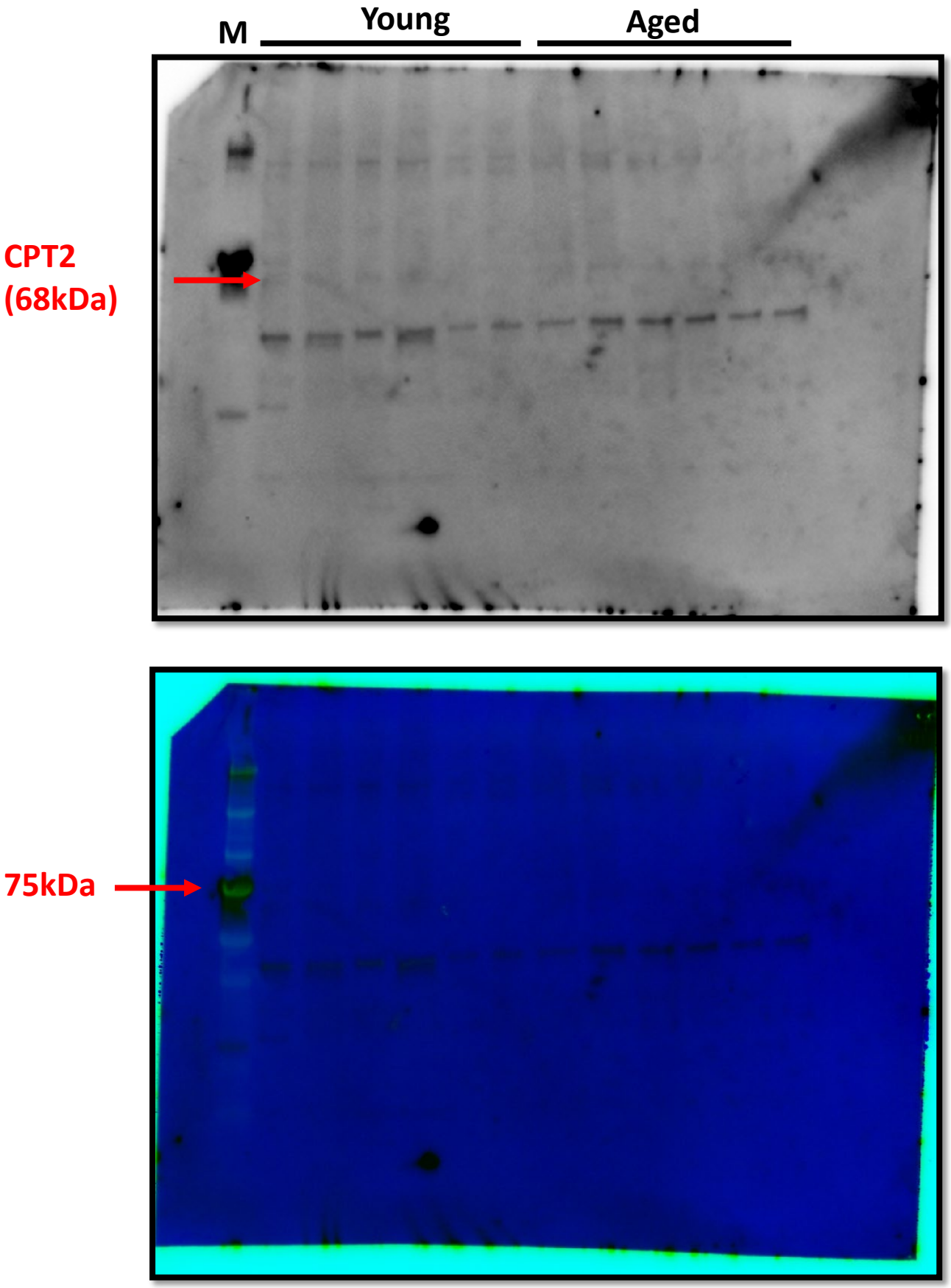
Original blot of β-Actin in and Figure 6 : Western blot analysis of β-Actin. Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with β-Actin antibody (Sigma, A5441) at dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 11 mice / phenotype. M, Marker

Supplemental Figure 17



Western blot analysis of Carnitine Palmitoyltransferase 1B (CPT1B). Western blot analysis of Carnitine Palmitoyltransferase 1B (CPT1B). Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with CPT1B antibody (Novus Biologicals, NBP1-59576) at a dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 6 mice / phenotype. M, Marker

Supplemental Figure 18



Western blot analysis of Carnitine Palmitoyltransferase 2 (CPT2). Stripped blots were blocked for one hour (2% BSA in TBST) followed by overnight incubation at 4°C with CPT2 antibody (Novus Biologicals, NBP1-51993) at a dilution of 1:1000. Blots were washed with TBST and incubated at room temperature for an hour with 2nd antibody (1:5000 dilution). Blots were washed and bands were developed using SuperSignal™ West Femto Maximum Sensitivity Substrate (Thermo Fisher Scientific) and images were taken using Bio-rad imager. N= 6 mice / phenotype. M, Marker