Stem cells ameliorate neurotrauma-induced visual disturbances and retinopathy via broad normalization of the β-catenin-related signaling pathway

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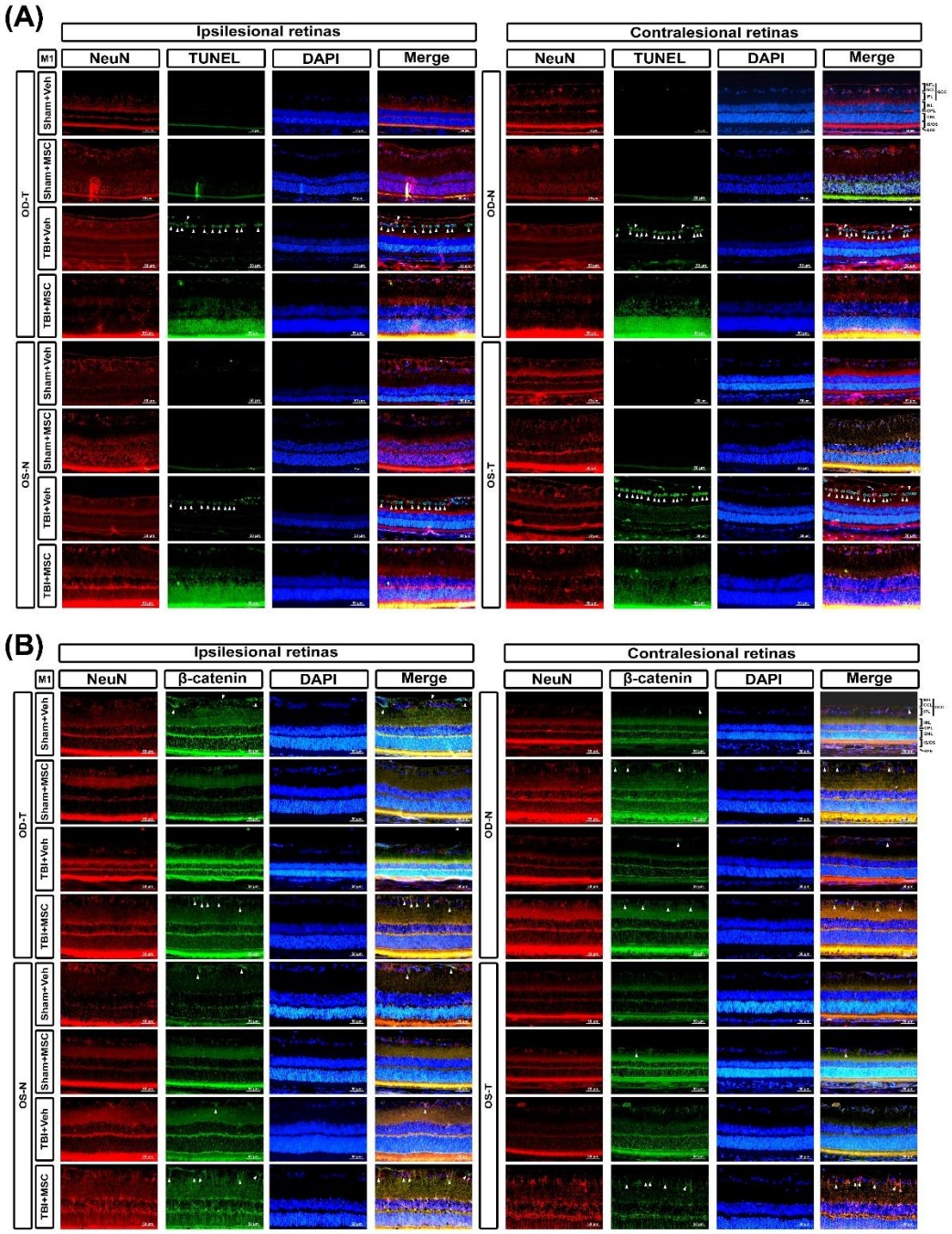
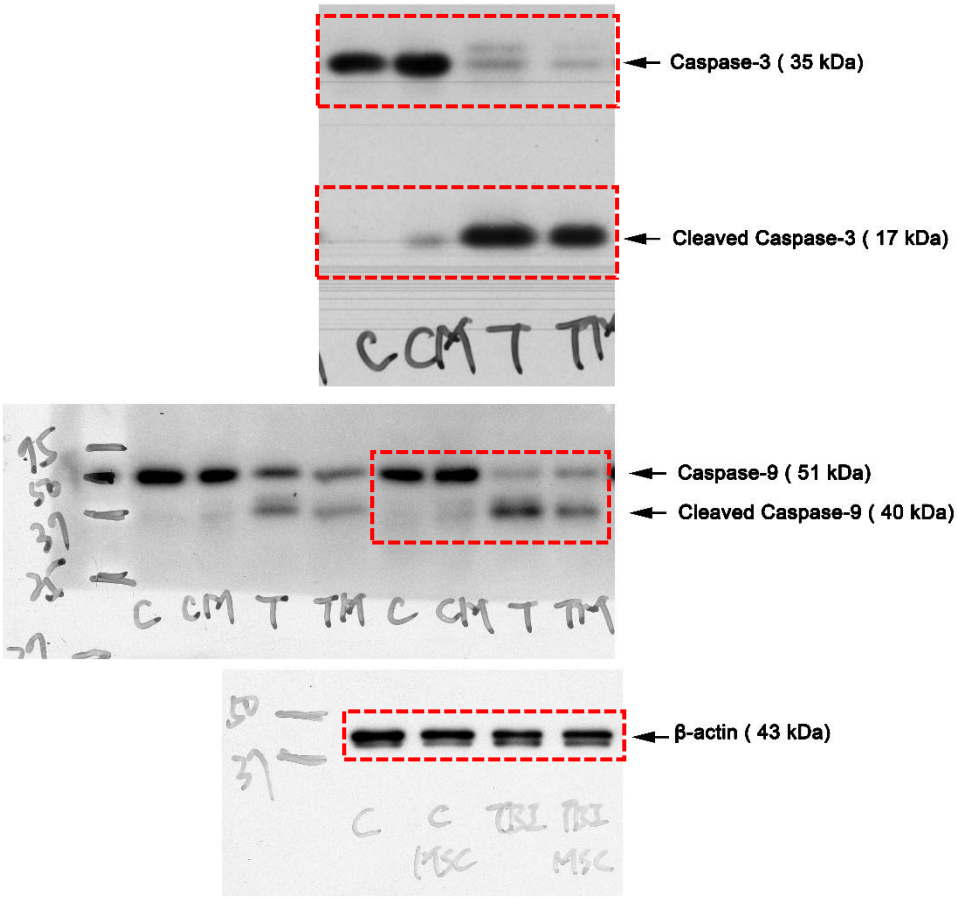
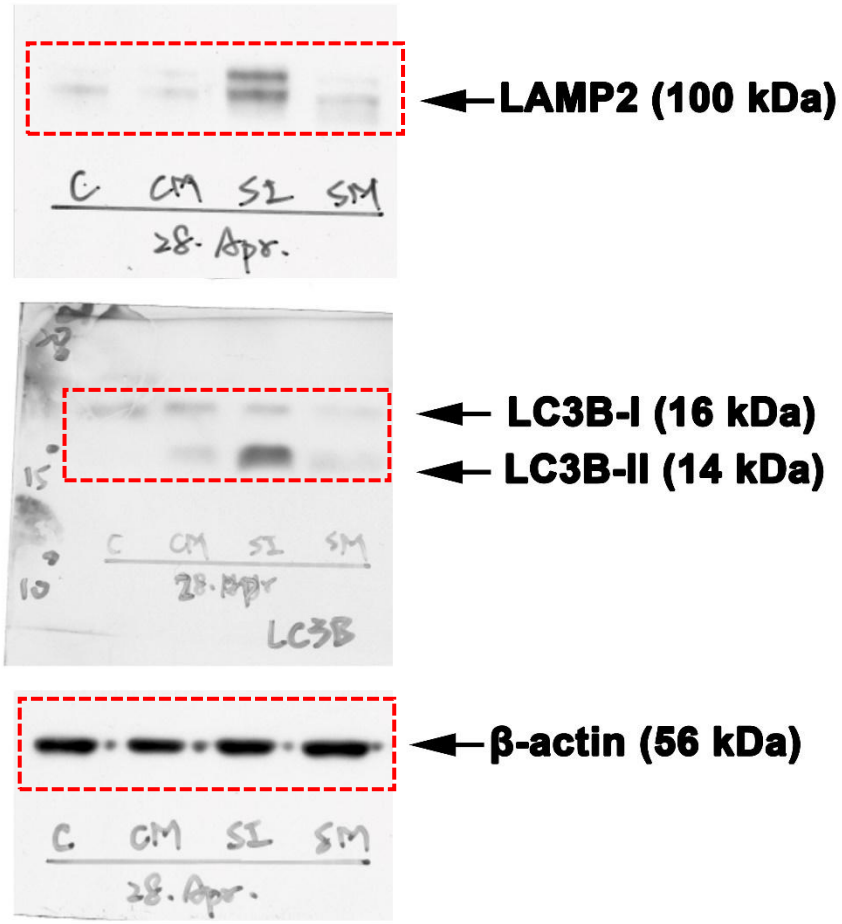


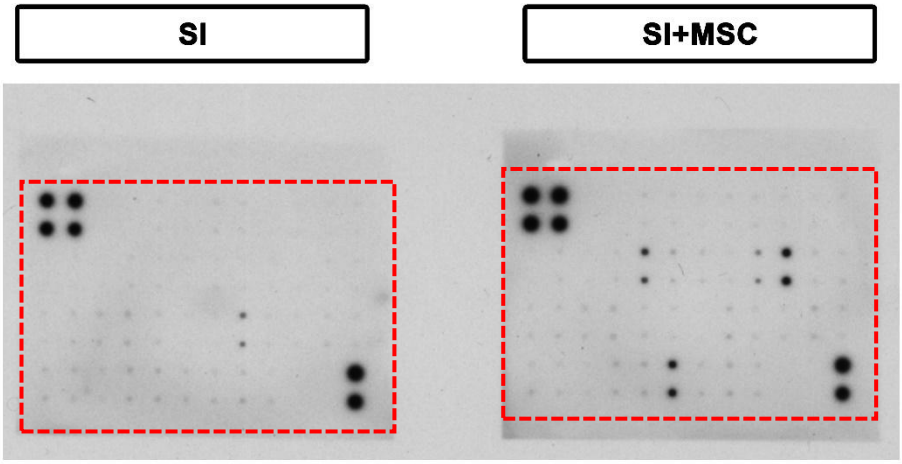
Supplementary Figure S1: Single-channel fluorescence images corresponding to Figure 4. Representative single-channel immunofluorescence images of NeuN (neuronal marker, red), TUNEL (apoptosis marker, green), β-catenin (green), and DAPI (nuclear marker, blue) from the retina of Sham+Veh, Sham+MSC, TBI+Veh, and TBI+MSC rats. These images provide a clearer visualization of individual fluorescence signals before merging in Figure 4A and B, ensuring accurate interpretation of neuronal apoptosis in the ganglion cell complex (GCC). Scale bar = 50 μm.



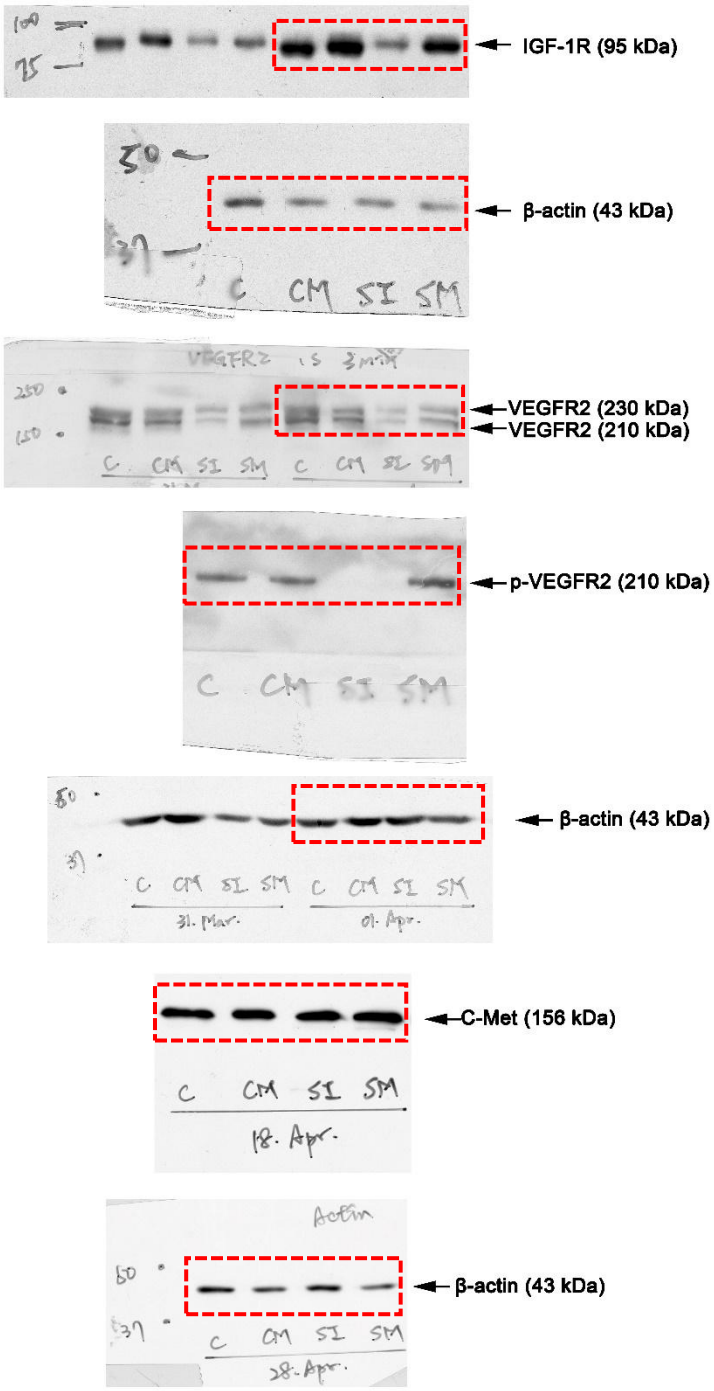
Supplementary Figure S2: Full-length Western blots corresponding to Figure 7C. Each lane is labeled by handwritten abbreviations on the original films: C = control (R28 without stretch injury), CM = C+MSC (control plus MSC coculture), T = SI (stretch-injured R28 cells), and TM = SI+MSC (stretch-injured R28 cells cocultured with MSCs). Red dashed boxes indicate the regions that were cropped and shown in the main figure; no non-adjacent lanes were spliced or rearranged, and any brightness/contrast adjustments were applied uniformly across the entire blot.



Supplementary Figure S3: Full-length Western blots corresponding to Figure 8E. Each lane is labeled by handwritten abbreviations on the original films: C = control (R28 without stretch injury), CM = C+MSC (control plus MSC coculture), T = SI (stretch-injured R28 cells), and TM = SI+MSC (stretch-injured R28 cells cocultured with MSCs). Red dashed boxes indicate the regions that were cropped and shown in the main figure; no non-adjacent lanes were spliced or rearranged, and any brightness/contrast adjustments were applied uniformly across the entire blot.

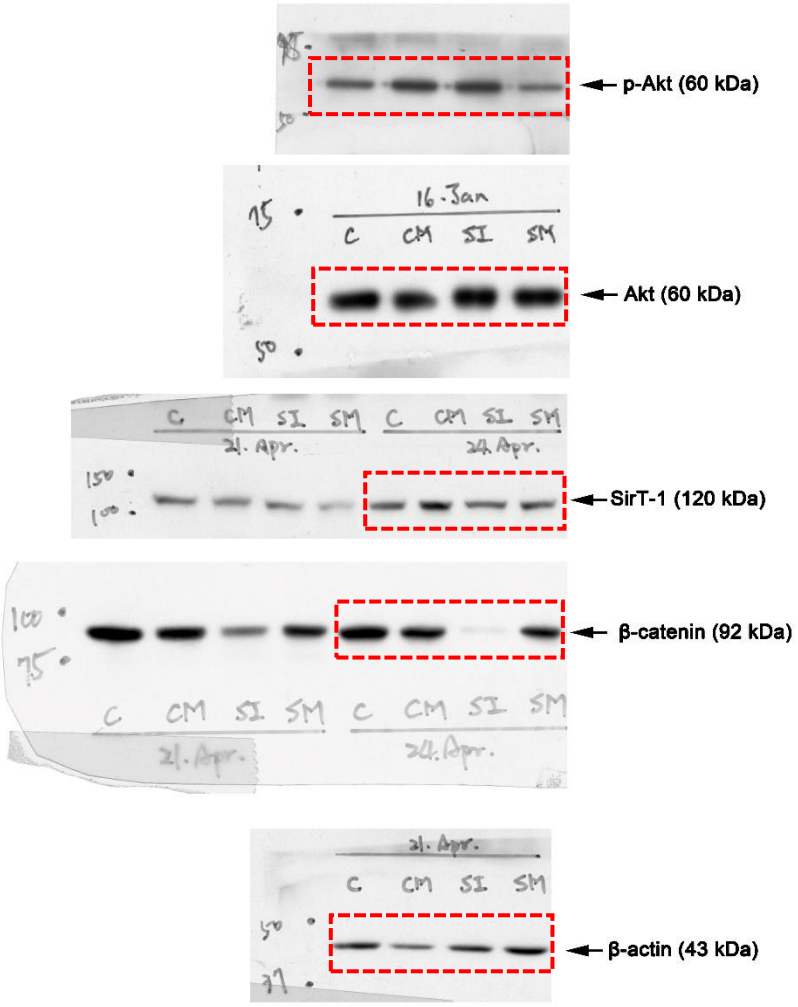


Supplementary Figure S4: Full-length membranes for the growth factor antibody array shown in Figure 9A. Each membrane corresponds to conditioned medium collected from stretch-injured R28 cells without MSC coculture (SI) or with MSC coculture (SI+MSC), as indicated by the handwritten labels on the original films. Labels printed on the right of each X-ray film indicate the capture antibodies spotted on the membrane. Red dashed boxes outline the regions that were cropped and presented in the main figure; no non-adjacent areas were spliced or rearranged, and any brightness/contrast adjustments were applied uniformly to the entire membrane.



Supplementary Figure S5: Full-length Western blots corresponding to Figure 9D. Each lane is labeled by handwritten abbreviations on the original films: C = control (R28 without stretch injury), CM = C+MSC (control plus MSC coculture), T = SI (stretch-injured R28 cells), and TM = SI+MSC (stretch-injured R28 cells cocultured with MSCs). Red dashed boxes indicate the regions that were cropped and shown in the main figure; no non-adjacent lanes were

spliced or rearranged, and any brightness/contrast adjustments were applied uniformly across the entire blot.



Supplementary Figure S6: Full-length Western blots corresponding to Figure 9E. Each lane is labeled by handwritten abbreviations on the original films: C = control (R28 without stretch injury), CM = C+MSC (control plus MSC coculture), T = SI (stretch-injured R28 cells), and TM = SI+MSC (stretch-injured R28 cells cocultured with MSCs). Red dashed boxes indicate the regions that were cropped and shown in the main figure; no non-adjacent lanes were spliced or rearranged, and any brightness/contrast adjustments were applied uniformly across the entire blot.