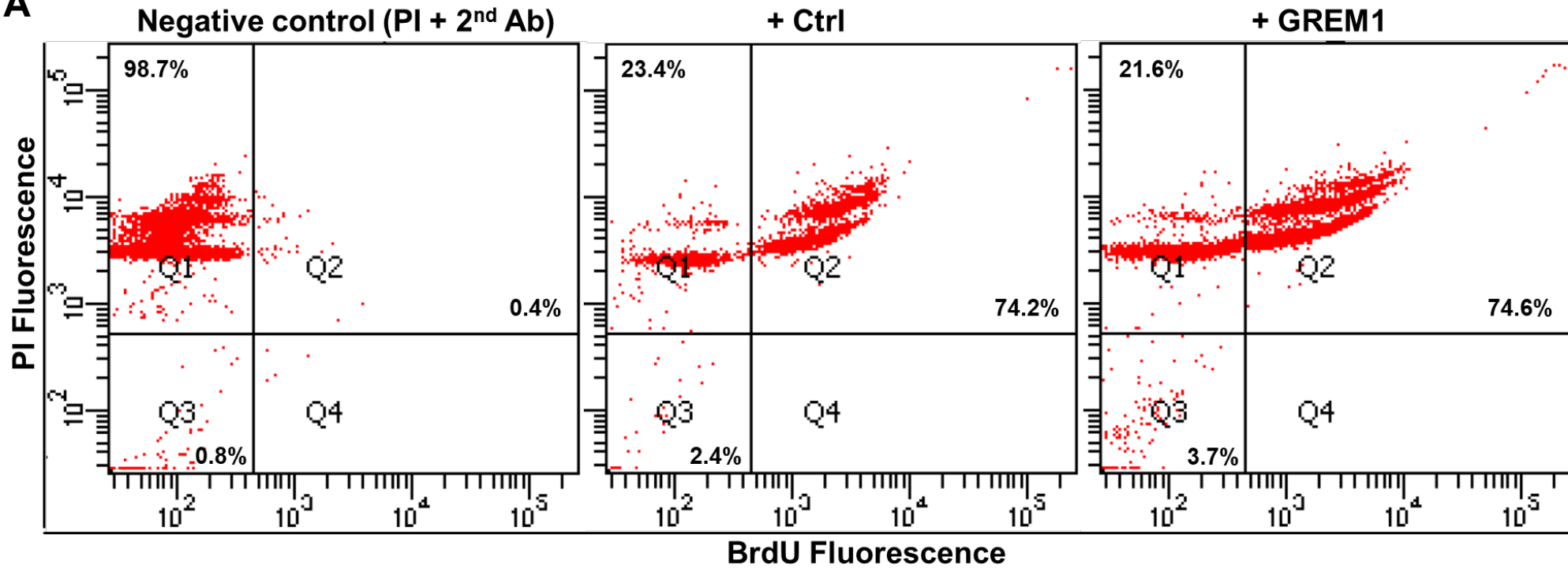
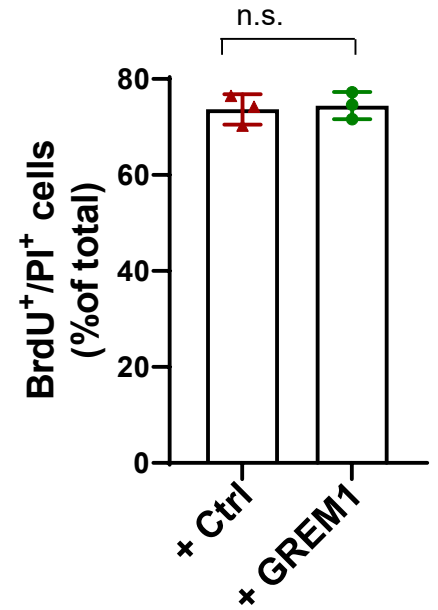


**A****B**

**Supplemental Figure S1. Overexpression of GREM1 in hMPCs does not alter the cells' ability to proliferate.** **A.** flow cytometry assay with BrdU and PI staining was performed to quantify the percentage of BrdU positive cells for the samples of hMPCs with or without GREM1 overexpression after 48-hour BrdU incorporation. **B.** Quantitative analysis for panel A. n.s., no significant difference.

Supplemental Figure S2. Full-length Western blot images

Figure 1B

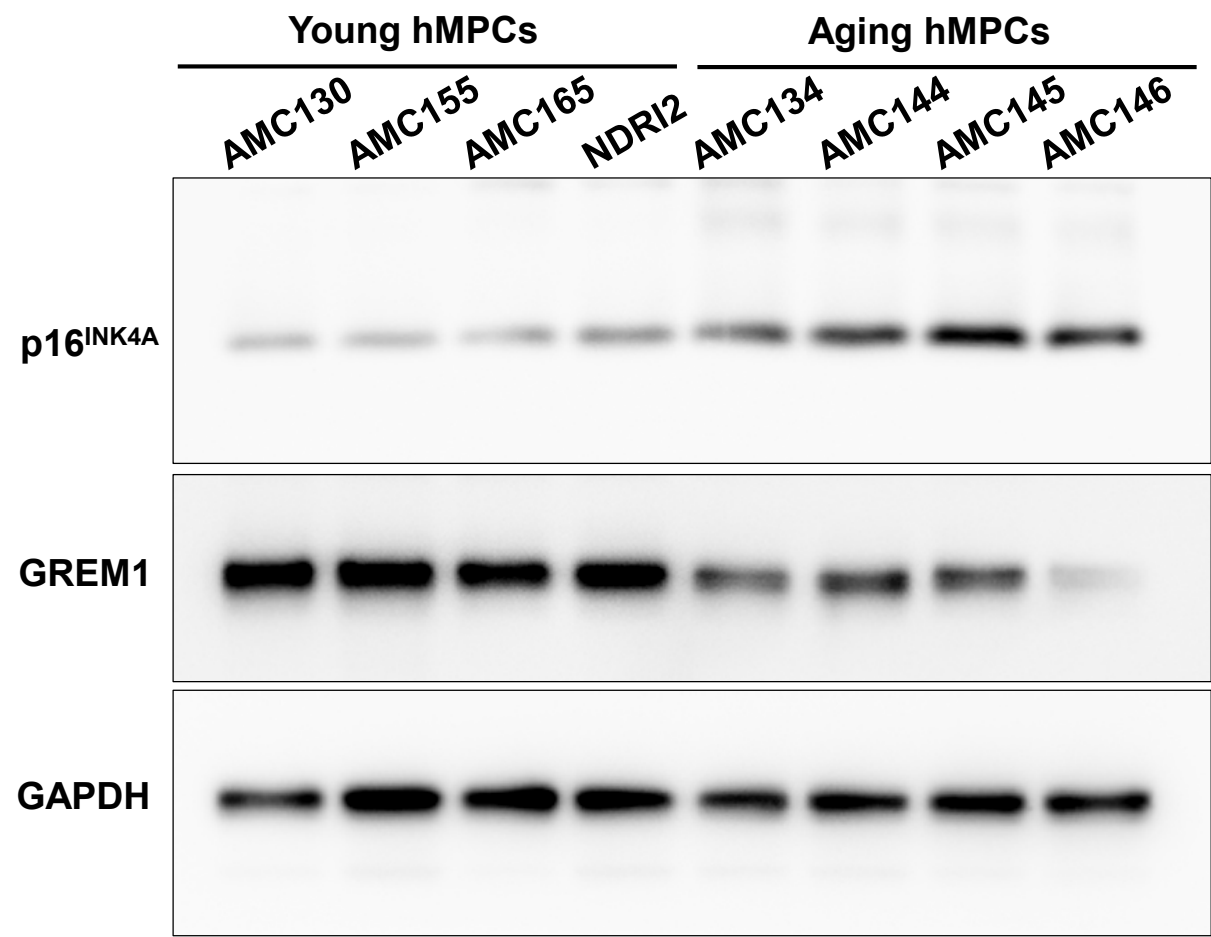


Figure 1D

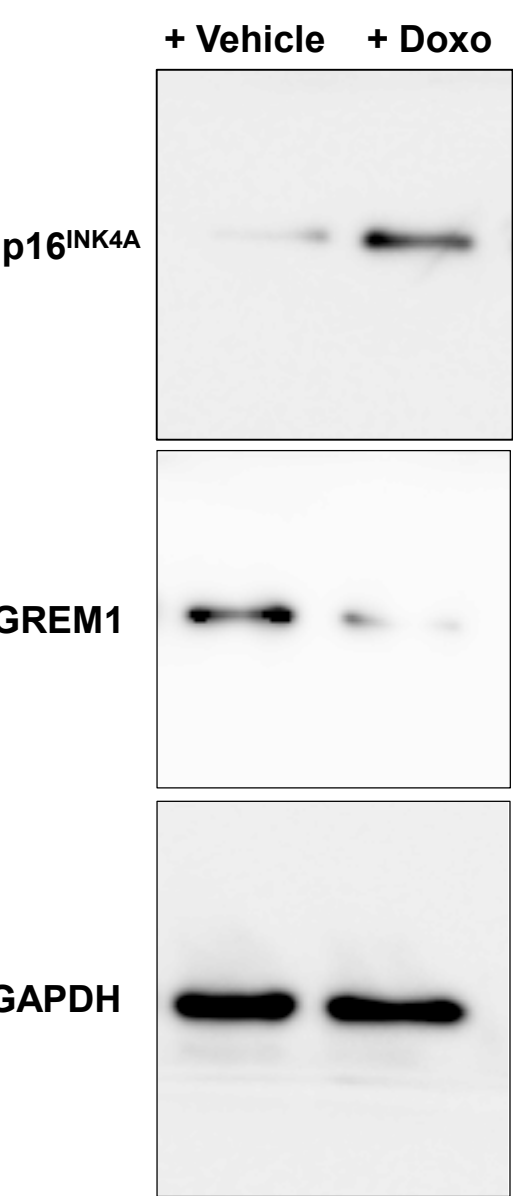
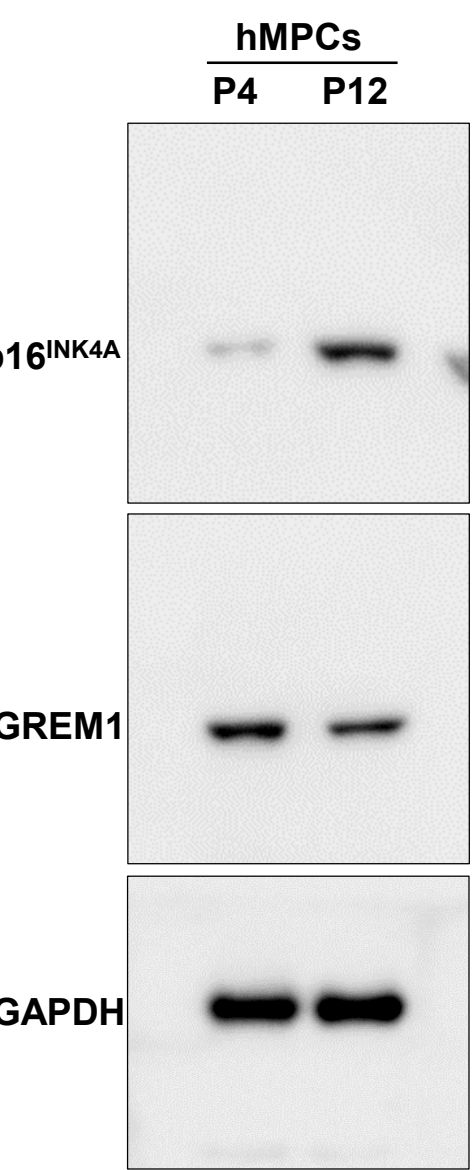


Figure 1E



Supplemental Figure S2. full-length Western blot images (continued)

Figure 2A

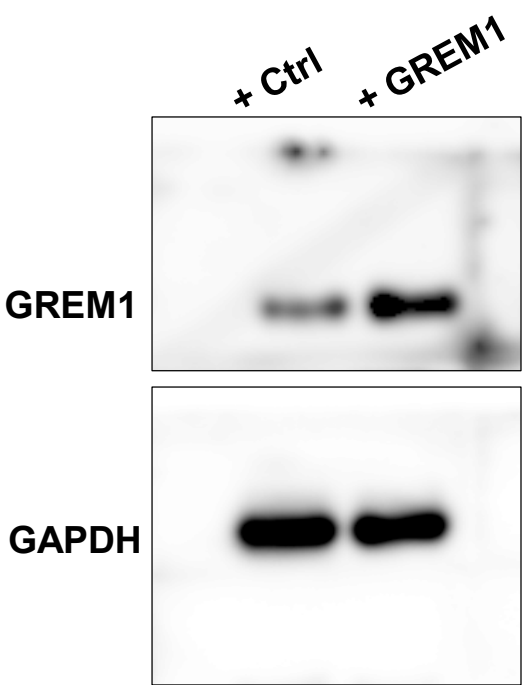


Figure 2C

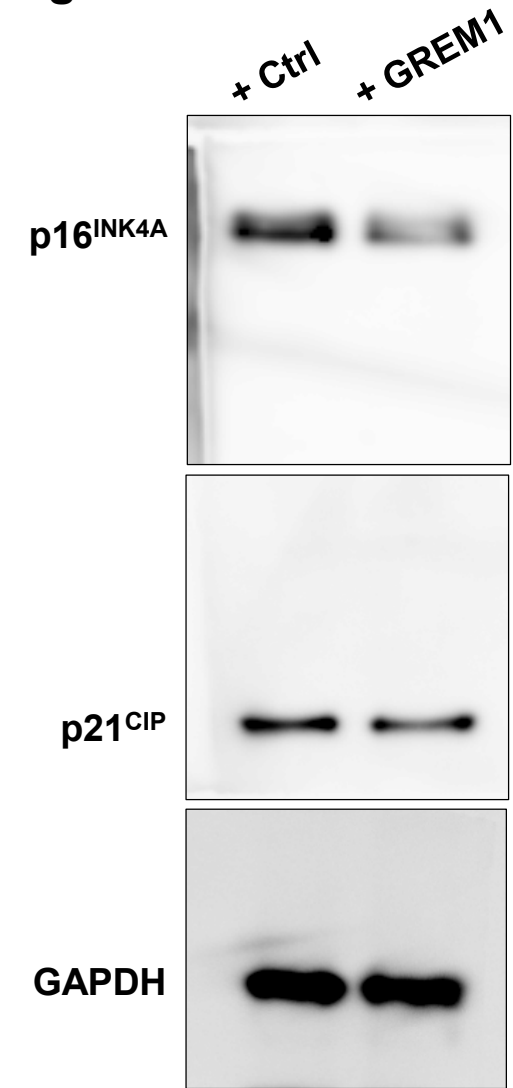
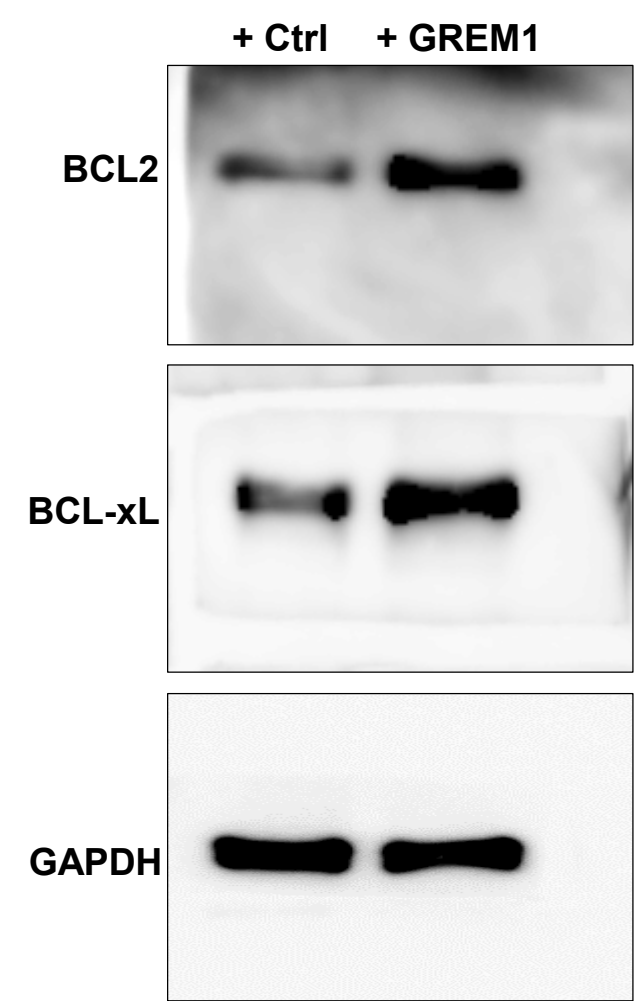


Figure 3E



Supplemental Figure S2. full-length Western blot images (continued)

Figure 4E

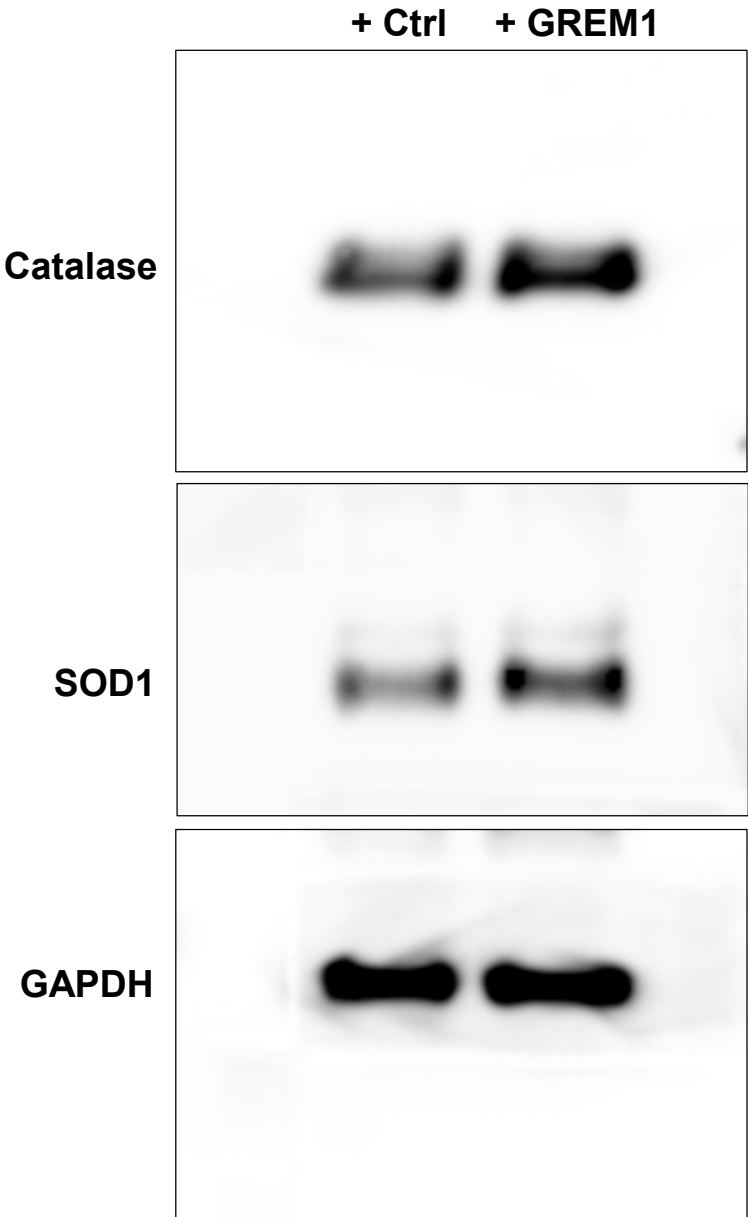
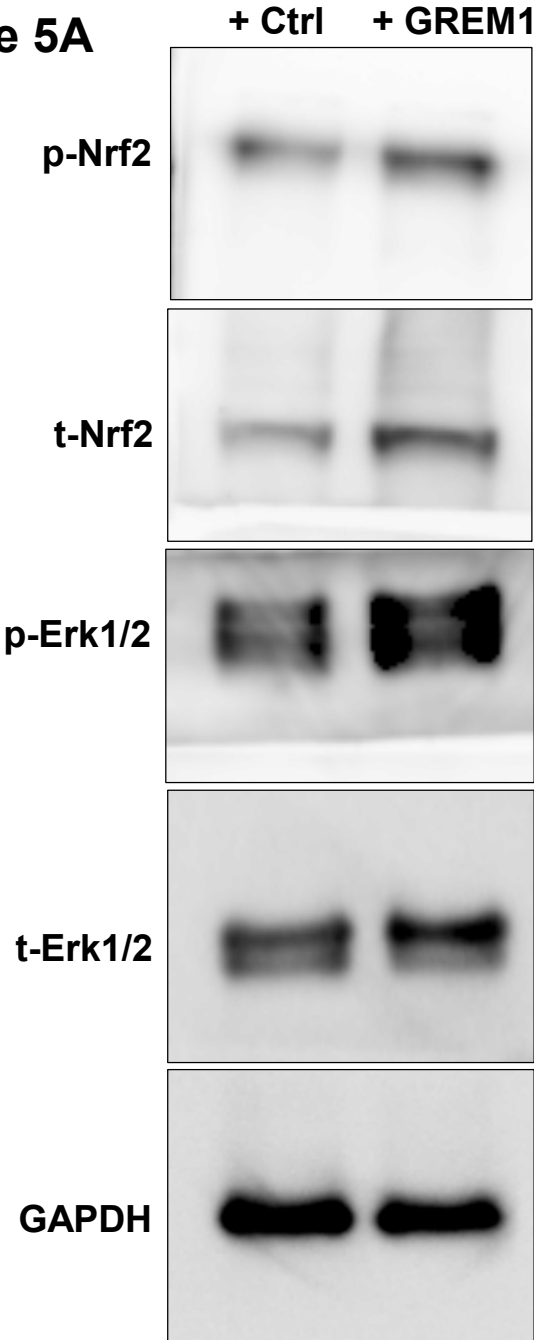


Figure 5A



**Table S1. List of primers for human genes used for the qPCR.**

<b>Genes</b>	<b>Forward Primer</b>	<b>Reverse Primer</b>
<b>GREM1</b>	GCAGGATAGTGGAGTGAGAAAG	TCAGCCTGTGTTCTGGTATTG
<b>CDKN2A (p16)</b>	GCACATTCATGTGGGCATTT	GACTCAAGAGAAGCCAGTAACC
<b>CDKN1A (p21)</b>	CGGAACAAGGAGTCAGACATT	AGTGCCAGGAAAGACAACACTAC
<b>FOXO1A</b>	TCATGTCAACCTATGGCAG	CATGGTGCTTACCGTGTG
<b>PSG5</b>	CCTGTGAACCTAAGAGTGAGAAC	TCTCGTGACACTGGGTAGAA
<b>BCL2L1</b>	TCAGGCTGCTTGGGATAAAG	AGGCTTCTGGAGGACATTTG
<b>BIRC3</b>	CAAGCCAGTTACCCTCATCTAC	CTGAATGGTCTTCTCCAGGTTC
<b>BCL2</b>	GCCAGGGTCAGAGTTAAATAGAG	GCCTCTCTTGCGGAGTATTT
<b>MCL1</b>	GTGAAGATGGTAGGGTGGAAAG	TCGGCGGGTAATCAATTCTATG
<b>CAT</b>	CTGGAGCACAGCATCCAATA	TCATTCAGCACGTTCCACATAGA
<b>SOD1</b>	GGCAAAGGTGGAAATGAAGAAA	CTCAGACTACATCCAAGGGAATG
<b>PRDX4</b>	GTGGATGAGACACTACGTTTGG	CCAGCTGGATCTGGGATTATTG
<b>PRDX6</b>	CCAACCATCCCTGAAGAAGAA	GGTGTGTAGCGGAGGTATTT
<b>GAPDH</b>	GGTGTGAACCATGAGAAGTATGA	GAGTCCTTCCACGATACCAAAG

**Table S2. List of antibodies against human proteins used for the Western blots.**

<b>Antigen</b>	<b>Catalog No.</b>	<b>IgG Type</b>	<b>Source</b>
<b>GREM1</b>	<b>ab140010</b>	<b>Rabbit</b>	<b>Abcam</b>
<b>p16<sup>INK4A</sup></b>	<b>92803</b>	<b>Rabbit</b>	<b>Cell signaling</b>
<b>p21<sup>CIP</sup></b>	<b>2947</b>	<b>Rabbit</b>	<b>Cell signaling</b>
<b>BCL-2</b>	<b>2870</b>	<b>Rabbit</b>	<b>Cell signaling</b>
<b>BCL2L1</b>	<b>2764</b>	<b>Rabbit</b>	<b>Cell signaling</b>
<b>SOD1</b>	<b>SC271014</b>		<b>Santa Cruz</b>
<b>Catalase</b>	<b>SC50508</b>	<b>Rabbit</b>	<b>Santa Cruz</b>
<b>ERK1/2</b>	<b>SC135900</b>	<b>Mouse</b>	<b>Santa Cruz</b>
<b>Phospho-ERK1/2</b>	<b>9154</b>	<b>Rabbit</b>	<b>Cell signaling</b>
<b>NRF-2</b>	<b>ab62352</b>	<b>Rabbit</b>	<b>Abcam</b>
<b>Phospho-NRF-2</b>	<b>ab76026</b>	<b>Rabbit</b>	<b>Abcam</b>
<b>GAPDH</b>	<b>2118</b>	<b>Rabbit</b>	<b>Cell signaling</b>