

## Supplementary Materials

### **Curcumin disrupts a positive feedback loop between ADMSCs and cancer cells in the breast tumor microenvironment via the CXCL12/CXCR4 axis**

Table S1. The qRT-PCR primer sets utilized in this study.

Figure S1. Assessment of the optimal time for NF- $\kappa$ B activation in ADMSCs when MCF7-CM was treated.

Figure S2. Measurement of the optimum time for NF- $\kappa$ B inhibition in MCF7 cells after curcumin treatment.

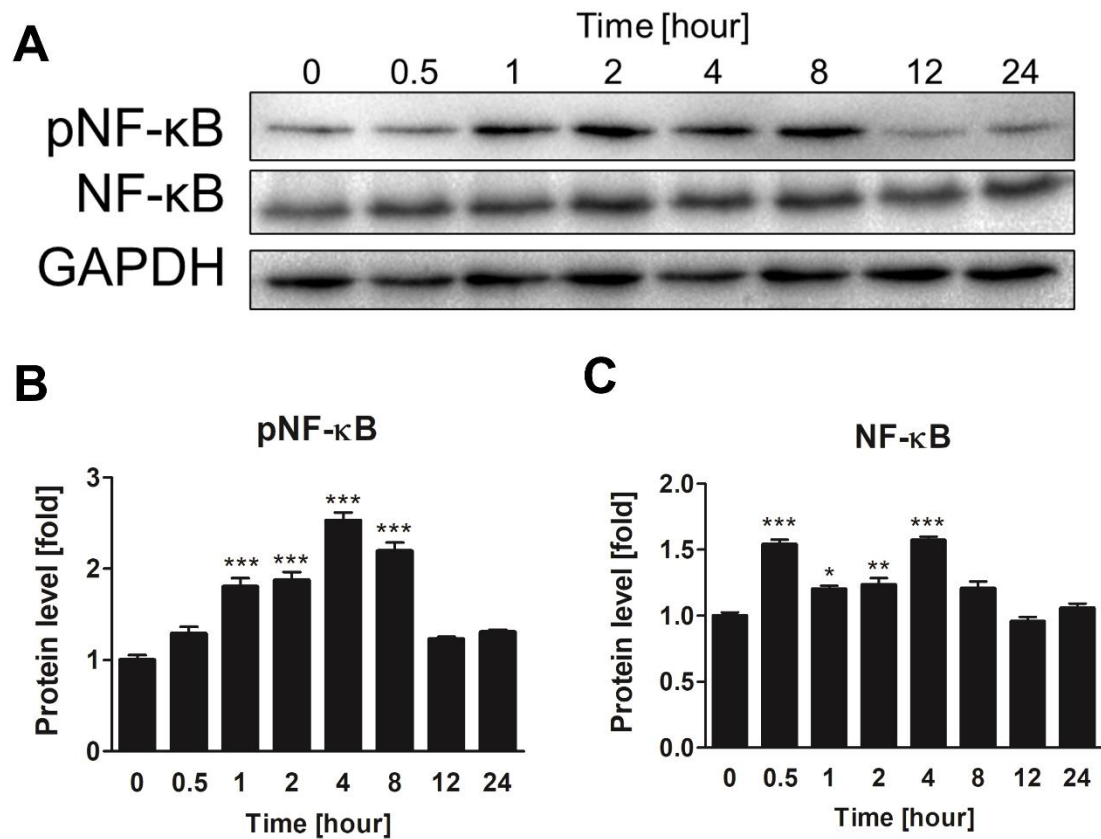
Figure S3. Determining the appropriate time for NF- $\kappa$ B activation in MCF7 cells following CAF-CM treatment.

Figure S4. The inhibitory effect of curcumin on the CXCL12/CXCR4 axis is independent of its antioxidant properties.

Table S1. The qRT-PCR primer sets utilized in this study.

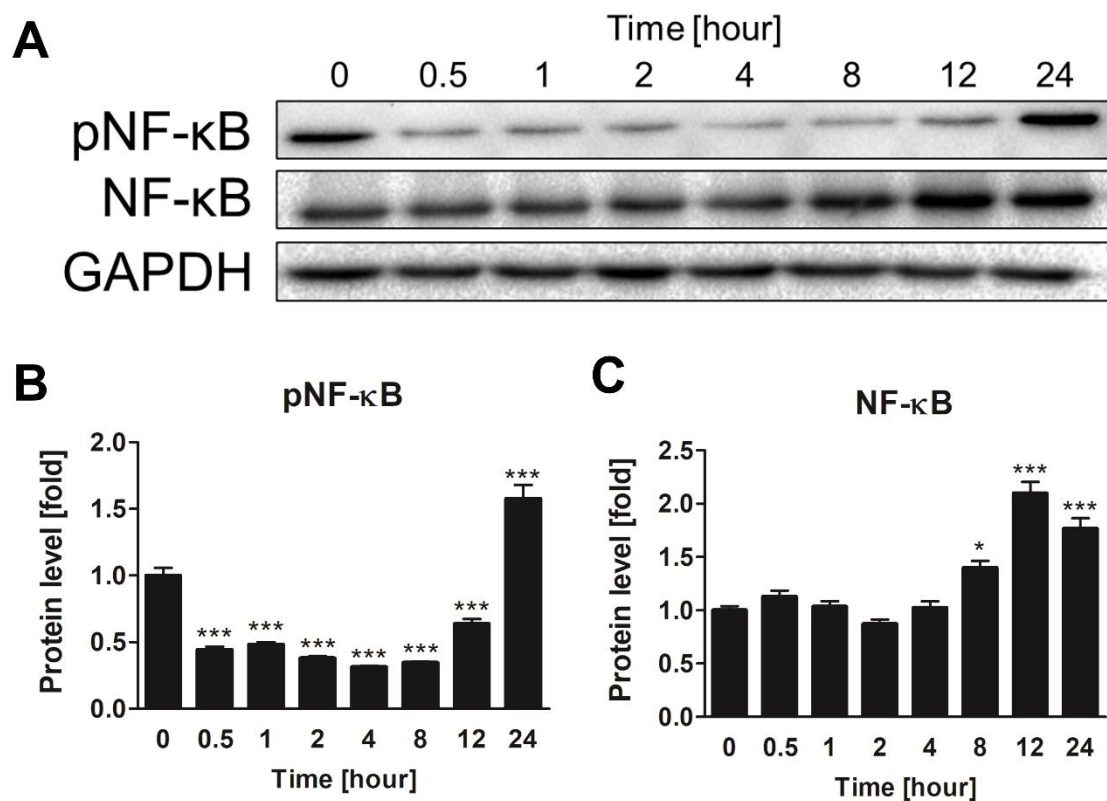
Gene	Sequence (5' → 3')	
<b>GAPDH</b>	F	TATGACAACAGCCTCAAGAT
	R	GAGTCCTTCCACGATACC
<b>Vimentin</b>	F	AGGCAAAGCAGGAGTCCACTGA
	R	ATCTGGCGTTCCAGGGACTCAT
<b><math>\alpha</math>-SMA</b>	F	GCTTGTCAGGGCTTGTCCA
	R	TTGAAGCGGAAGTCTGGGAA
<b>FN1</b>	F	ACAACACCGAGGTGACTGAGAC
	R	GGACACAACGATGCTTCCTGAG
<b>CXCL12</b>	F	TGCCCTTCAGATTGTAGCCC
	R	GCCCTTCCCTAACACTGGTT
<b>CXCR4</b>	F	CAGATAACTACACCGAGGAA
	R	TGACCAGGATGACCAATC

Figure S1. Assessment of the optimal time for NF- $\kappa$ B activation in ADMSCs when MCF7-CM was treated.



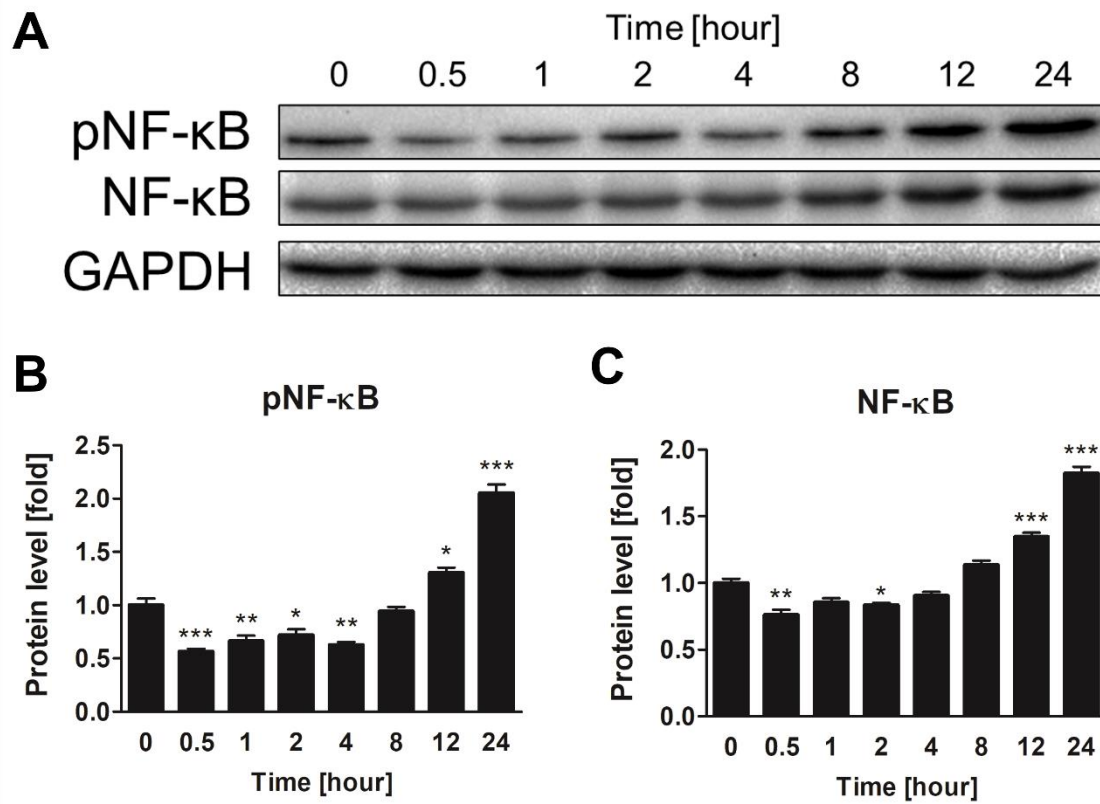
ADMSCs were exposed to 50% of MCF7-CM over a time range of 0-24 h to evaluate protein expressions of pNF- $\kappa$ B and NF- $\kappa$ B, which were subsequently quantified through immunoblot analysis. \*  $p < 0.05$ , \*\*  $p < 0.01$ , and \*\*\*  $p < 0.001$  compared to the 0-hour group.

Figure S2. Measurement of the optimum time for NF- $\kappa$ B inhibition in MCF7 cells after curcumin treatment.



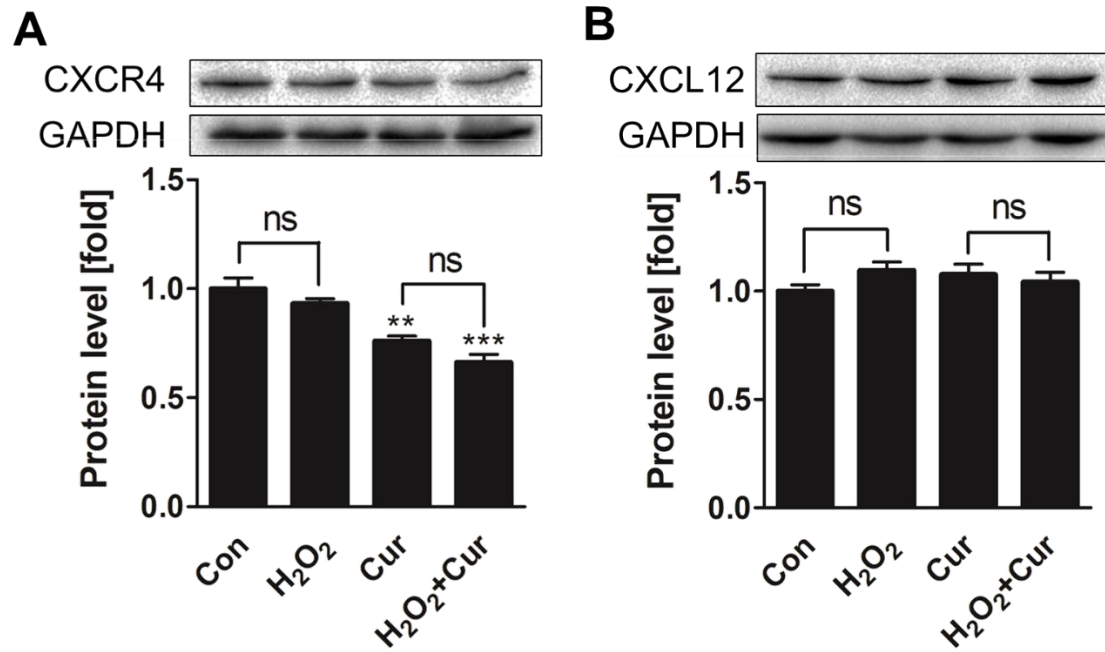
A concentration of 20  $\mu$ M curcumin was treated to MCF7 breast cancer cells over a time ranging from 0 to 24 h. This treatment aimed to assess the protein expressions of pNF- $\kappa$ B and NF- $\kappa$ B. \*  $p < 0.05$  and \*\*\*  $p < 0.001$  compared to the 0-hour group.

Figure S3. Determining the appropriate time for NF- $\kappa$ B activation in MCF7 cells following CAF-CM treatment.



To determine the ideal time point for NF- $\kappa$ B activation in MCF7 cells following CAF-CM treatment, a time-course experiment was conducted. MCF7 cells were exposed to Cur-CM, and samples were collected at various time points ranging from 0 to 24 h. \*  $p < 0.05$ , \*\*  $p < 0.01$ , and \*\*\*  $p < 0.001$  compared to the 0-hour group.

Figure S4. The inhibitory effect of curcumin on the CXCL12/CXCR4 axis is independent of its antioxidant properties.



Protein levels of both (A) CXCR4 and (B) CXCL12 were assessed using an immunoblot assay. ADMSCs were seeded at a concentration of  $1 \times 10^5$  cells/mL and subjected to treatment with 100  $\mu$ M of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) either alone or in combination with 20  $\mu$ M of curcumin for 24 h. \*\*  $p < 0.01$  and \*\*\*  $p < 0.001$  compared to the control group; Con: control; H<sub>2</sub>O<sub>2</sub>: 100  $\mu$ M of H<sub>2</sub>O<sub>2</sub> treatment group; Cur: 20  $\mu$ M of curcumin treatment group.