

Supplementary Table 1. Primer sequence

Name	Sequence (5'→3')
rat-U6-F	CTCGCTTCGGCAGCACATATACT
rat-U6-R	ACGCTTCACGAATTTGCGTGTC
hsa-miR-214-3p-F	CCGACAGCAGGCACAGACA
hsa-miR-214-3p-R	AGTGCAGGGTCCGAGGTATT
hsa-miR-214-3p-RT	GTCGTATCCAGTGCAGGGTCCGAGGTATTCGCACTGGTAACG A CACTGCC
hsa-miR-451a-F	CCGCGCAAACCGTTACCATTAC
hsa-miR-451a-R	AGTGCAGGGTCCGAGGTATT
hsa-miR-451a-RT	GTCGTATCCAGTGCAGGGTCCGAGGTATTCGCACTGGTAACG A CAACTCA
hsa-miR-196a-5p-F	CCGCGCGTAGGTAGTTTTCATGTT
hsa-miR-196a-5p-R	AGTGCAGGGTCCGAGGTATT
hsa-miR-196a-5p-RT	GTCGTATCCAGTGCAGGGTCCGAGGTATTCGCACTGGTAACG A CCCCCAAC
hsa-miR-3182-F	CCGCTGGCAGTGTCTTAGCT
hsa-miR-3182-R	AGTGCAGGGTCCGAGGTATT
hsa-miR-3182-RT	GTCGTATCCAGTGCAGGGTCCGAGGTATTCGCACTGGTAACG A CACAACC
hsa-U6-F	CTCGCTTCGGCAGCACA
hsa-U6-R	AACGCTTCACGAATTTGCGT

Supplementary Table 2. Particle concentration, size and protein concentration of EMPA-pretreated MSCs-derived small extracellular vesicles.

	MSC-sEV (n=3)	EMPA-sEV (n=3)	P value
NTA			
concentration (10 ⁶ Particles/μl)	4.33±0.17	4.73±0.12	0.055
Size (nm)	109.5±0.22	108.6±6.44	0.853
BCA protein assay			
protein concentration (μg/μl)	1.65±0.24	2.54±0.42	0.575

Data are described using mean ± standard deviation (SD).

Supplementary Figure 1. Concentration gradient of EMPA pretreated MSCs. CCK-8 analysis showed the cell viability of MSCs treated with EMPA at different concentrations at 24 h and 48 h respectively (n=4). Data are expressed as mean $\pm$ SEM. *** P < 0.001, **** P < 0.0001, ns: not significance.

