

Supplementary Information

Extracellular vesicles derived from MSCs activates dermal papilla cell *in vitro* and promotes hair follicle conversion from telogen to anagen in mice

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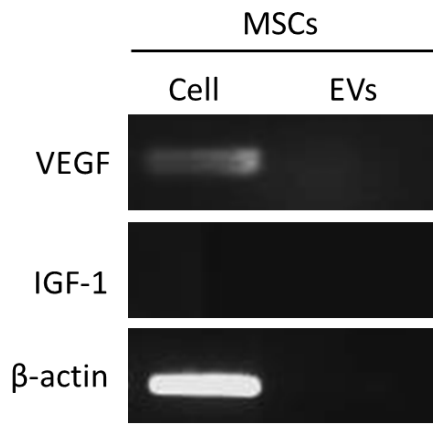
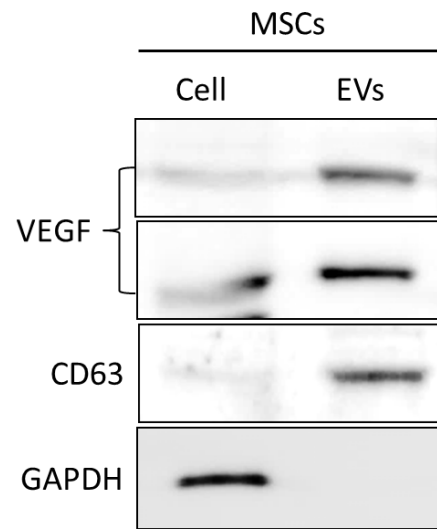
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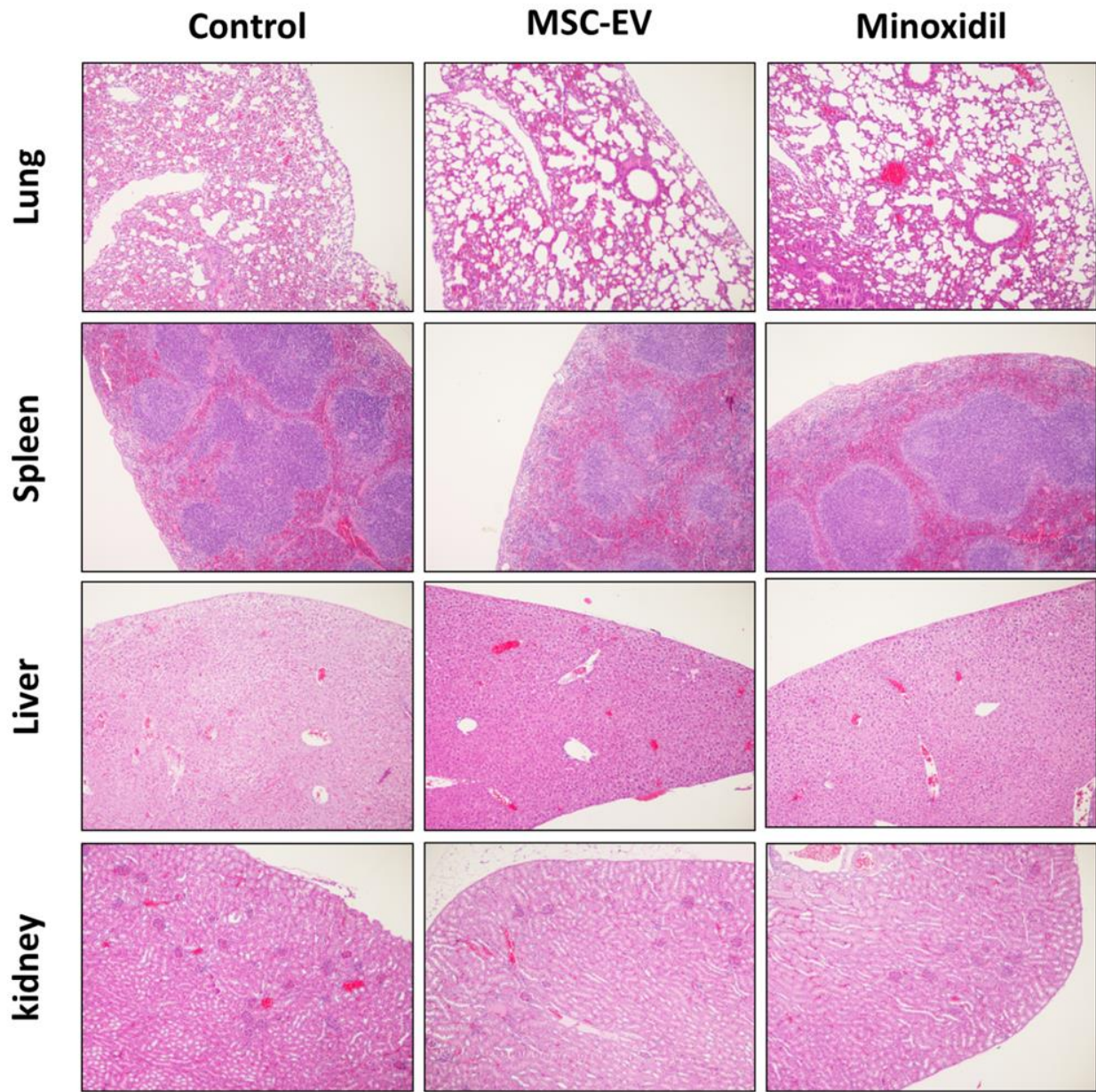
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Supplementary Figure – 1: Identification of growth factor mRNAs and proteins in MSC-EV. (A) mRNAs (growth factor) expression in MSC cells and MSC-EVs. (B) Western blot analysis for VEGF protein in MSC cells and MSC-EVs. CD63 and GAPDH were used as internal loading controls.



Supplementary Figure - 2: Microscopic examination of organs from mice in the different groups. Lung, liver, splenic, and kidney tissues were stained with H&E, and sections were examined under 20× magnification.

Table - S1: List of antibodies used in this study

Antibody	Company	Dilution
ALIX	Abcam	1:5000
CD63	Abcam	1:5000
GM130	Abcam	1:4000
Calnexin	Abcam	1:4000
Cytochrome c	Abcam	1:4000
pERK	Cell signaling	1:5000
ERK	Cell signaling	1:5000
pAKT	Cell signaling	1:5000
AKT	Cell signaling	1:5000
PCNA	Cell signaling	1:6000
Wnt3a	Abcam	1:5000
Wnt5a	Abcam	1:5000
Versican	ABR	1:5000
Bcl-2	Cell signaling	1:6000
GAPDH	Abcam	1:10000
HRP conjugated anti-rabbit	Cell signaling	1:4000
HRP conjugated anti-mouse	Cell signaling	1:4000

Table – S2: List of primers used in this study

Gene	Forward primer	Reverse primer
VEGF	5'-GCGAGTCTGTGTTTTTGCAG-3'	5'-TCTTCAAGCCATCCTGCGTG-3'.
IGF-1	5'-TCAACAAGCCACAGGGTAT-3'	5'-ACTCGTGCAGAGCAAAGGAT-3'
KGF	5'-AATTCCAAGTCCACTGTCC-3'	5'-GACATGGATCCTGCCAACTT-3'
HGF	5'-ACACCAGGGTGATTGAGACC-3'	5'-CGAGGCCATGGTGCTATACT-3'
β -actin	5'- GGGAAATCGTGCGTGACATT - 3'	5'-GGAGTTGAAGGTAGTTTCGT- 3'