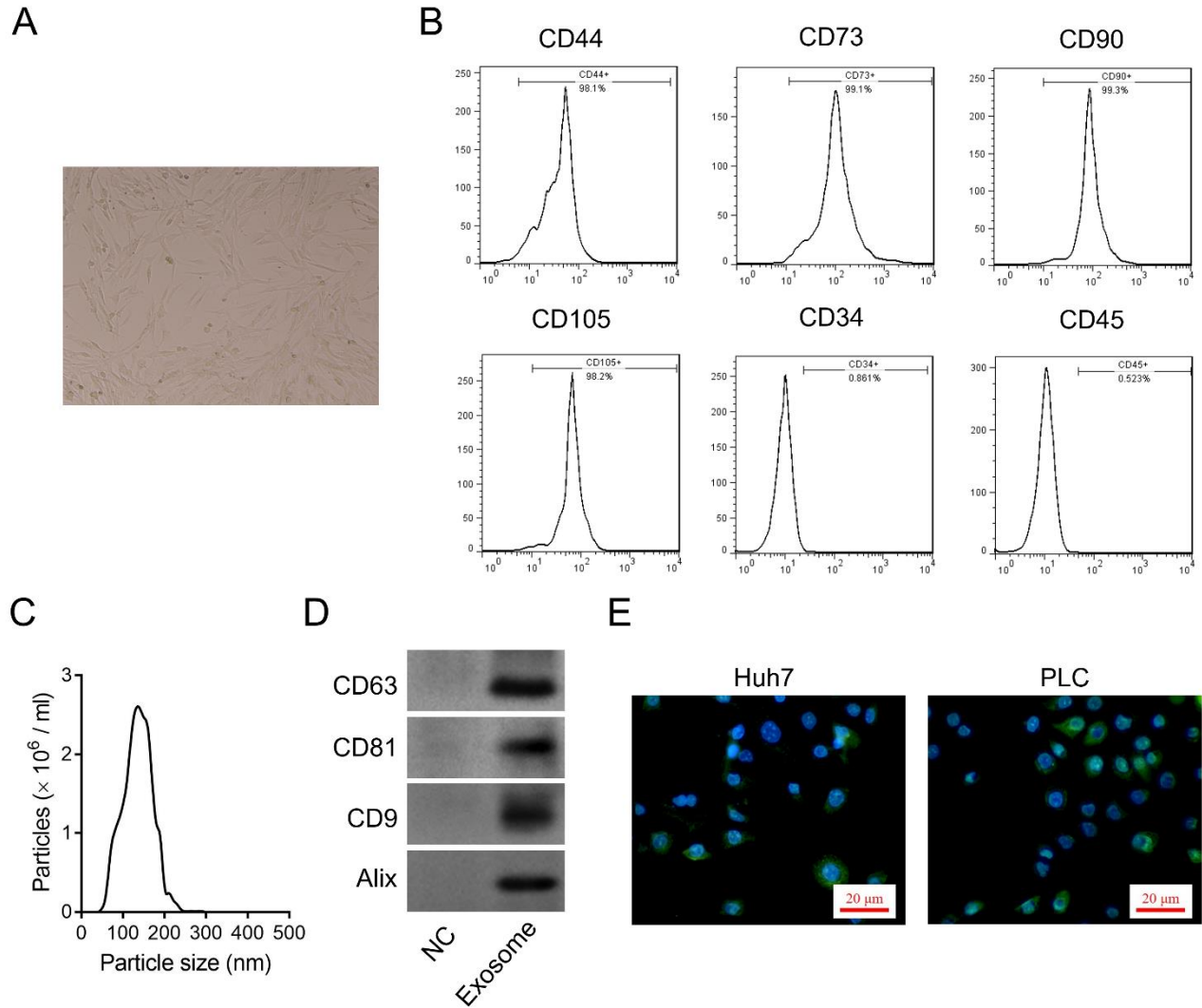
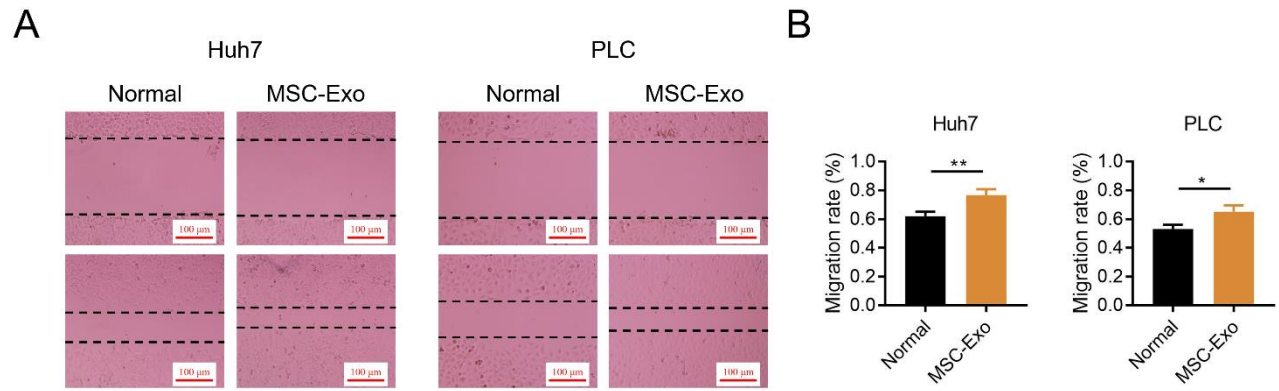


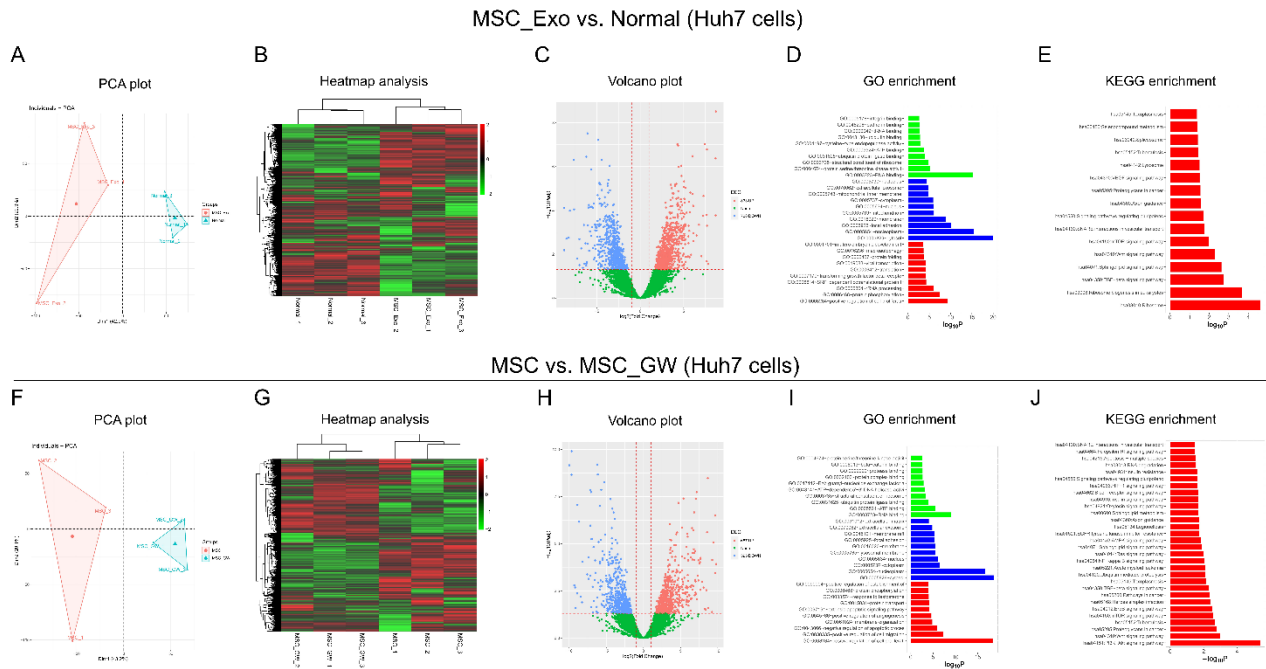
Supplementary Material



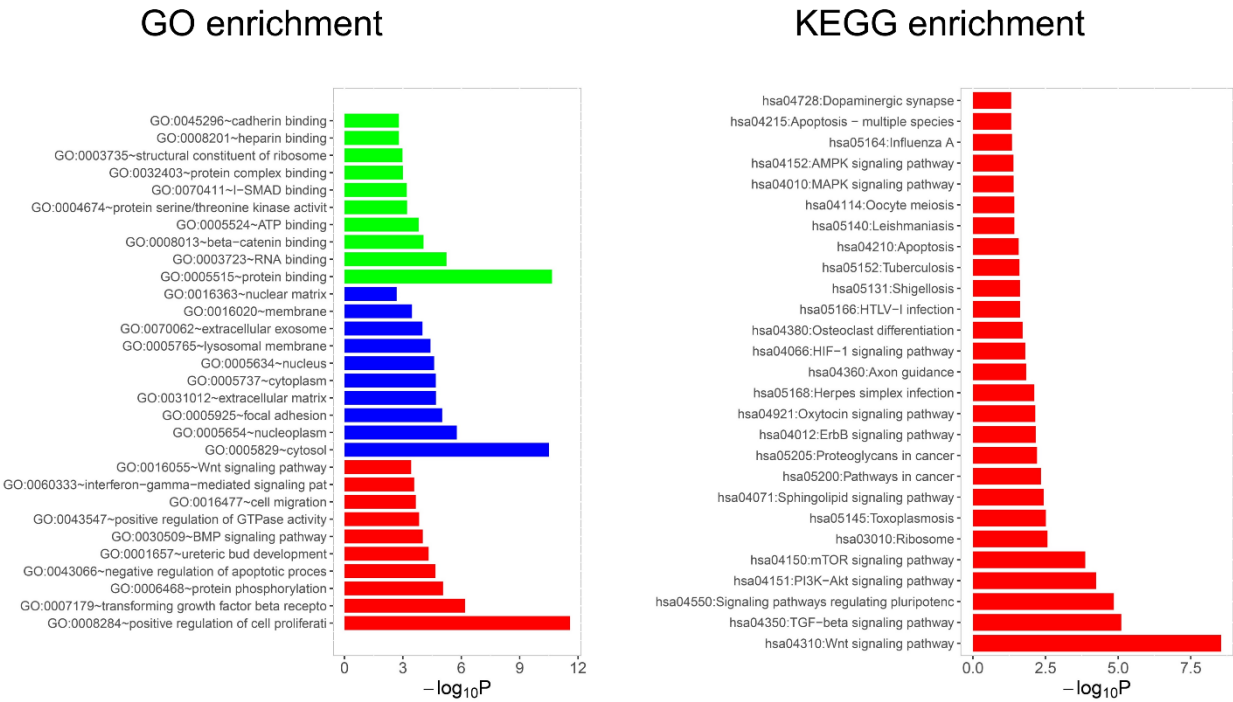
Supplementary Figure 1. Characterization of HCC-MSCs and their derived exosomes. HCC-MSCs under bright field (**A**); surface markers of HCC-MSCs (**B**); particle size analysis of HCC-MSCs derived exosomes (**C**); exosome marker analysis (**D**); observation of exosomes absorbed by HCC cells (**E**).



Supplementary Figure 2. Effect of HCC-MSCs on migration of HCC cells. Representative images of migration detection (**A**); Comparison of migration rate between groups (**B**).



Supplementary Figure 3. RNA sequencing in Huh7 cells. PCA (A), heatmap (B) and volcano plot (C) analyses between MSC_Exo group and normal group; GO (D) and KEGG (E) enrichment of DEGs between MSC_Exo group and normal group. PCA (F), heatmap (G) and volcano plot (H) analyses between MSC group and MSC_GW group; GO (I) and KEGG (J) enrichment of DEGs between MSC group and MSC_GW group.



Supplementary Figure 4. GO and KEGG enrichment of DEGs between MSC_Exo versus normal groups and MSC_GW versus MSC_GW group.

Supplementary table 1. Primers' sequence

Gene	Forward Primer (5'-3')	Reverse Primer (5'-3')
TMBIM6	AGCAGCACCTGAAGAAGGTC	TCAATATCAGGGAGCCCAAG
EEF2	ATGAGGGCAAGATGAAGCTG	ATGAAGGACGGGATGTTTAC
PRDX1	TCCCAAGCGCACCATTGCTCA	CACAGAGCGGCCAACGGGAA
GAPDH	GAGTCCACTGGCGTCTTCAC	ATCTTGAGGCTGTTGTCATACTTCT

Supplementary table 2. Antibodies applied in western blot.

Antibody	Company	Dilution
Primary Antibody		
CD63 antibody	Abcam (UK)	1:1000
CD81 antibody	Abcam (UK)	1:1000
CD9 antibody	Abcam (UK)	1:2000
Alix antibody	Abcam (UK)	1:2000
TMBIM6 antibody	Abcam (UK)	1:1000
EEF2 antibody	Abcam (UK)	1:1000
PRDX1 antibody	Abcam (UK)	1:10000
E-cadherin antibody	CST (USA)	1:1000
N-cadherin antibody	CST (USA)	1:1000
Vimentin antibody	CST (USA)	1:1000
Slug antibody	CST (USA)	1:1000
p-PI3K antibody	Abcam (UK)	1:500
PI3K antibody	Abcam (UK)	1:1000
p-AKT antibody	Abcam (UK)	1:1000
AKT antibody	Abcam (UK)	1:1000
GAPDH antibody	Abcam (UK)	1:5000
Secondary Antibody		
Goat Anti-Rabbit IgG-HRP	Abcam (UK)	1:5000