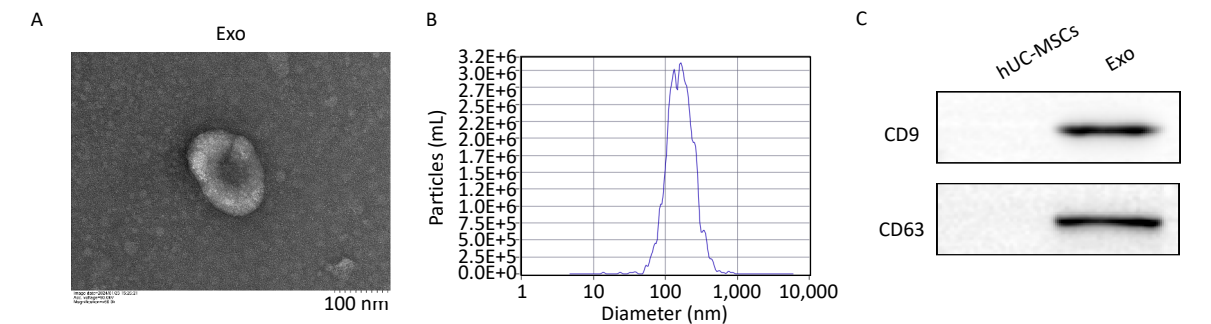


Supplementary Table S1. Sequences used in cell transfection

shRNA name	Sequences
si-TSC1-#1	Sense: GGUGUUGAUCACCAUGCUACC Antisense: UAGCAUGGUGAUCAACACCAA
si-TSC1-#2	Sense: CGGCUGAUGUUGUUCAGUACC Antisense: UACUGAACAAUCAGCCGAG
si-TSC1-#3	Sense: GACAGUAUAGAGAAAGAUAG Antisense: UAUCUUUCUCUAUACUGUCUU
miR-451 mimic	Sense: AAACCGUUACCAUACUGAGUU Antisense: AACUCAGUAAUGGUAACGGUUU
miR-451 inhibitor	AACUCAGUAAUGGUAACGGUUU

Supplementary Table S2. Primer sequences for qRT-PCR

Gene	Sequences
miR-451-RT	5'-CTCAACTGGTGTCTGGAGTCGGCAATTCAGTTGAGAACTCAGT-3'
miR-451	F: 5'-GCCGGAACCGTTACCATT-3'
URP	5'-CTCAACTGGTGTCTGGA-3'
U6-RT	F: 5'-CTCGTTTCGGCAGCACA-3' R: 5'-AACGCTTCACGAATTTGCGT-3'
TSC1	F: 5'-GTAAACACGTTGGTGGATT-3' R: 5'-GCTTTGCCTACATACTCATTC-3'
β-actin	F: 5'-GTCCTCACCTCCCAAAG-3' R: 5'-GCTGCCTCAACACCTCAACCC-3'



Supplementary Figure S1. Characterization of hUCMSC-Exos. A, The ultrastructure of hUCMSC-Exo was analyzed by transmission electron microscopy. Scale bar = 100 nm. B, Measurement of hUCMSC-Exos size distribution by Nanoparticle Tracking Analysis. C, Expression of the protein markers CD9 and CD63, which are commonly found in exosomes, was determined by western blot.