

**Table SI.** Characteristics of studies included in the present meta-analysis.

ID	Refs.	Year	Animal model					Extracellular vesicle treatment			Outcome measure			
			Sex and species	Animal number	Occlusion method	Occlusion time	Anesthetic	EVs source	Therapy time	Administration method	Therapy dose	Measure time	Primary outcomes	Secondary outcomes
1	Seifali <i>et al</i> (13)	2020	male Wistar rats	T:24 C:6 E:6	filament insertion	1 h	isoflurane	HUCPVCs	2 h after stroke	Lateral ventricle	50 µg EVs	1, 3, 7 days after stroke	1. neurobehavioral tests 2. apoptotic rate	
2	Wang <i>et al</i> (14)	2022	male/female C57BL/6j mice	T:120 C:9 E:9	filament insertion	0.5 h	isoflurane	BMSCs	Immediately, 6 h, 48 h, 96 h after administration	Intravenous administration	2x10 <sup>6</sup> EVs	3, 7 days after stroke	1. neurofunction score 2. infarct volumes	
3	Hu <i>et al</i> (15)	2022	male ICR mice	T:32 C:14 E:14	filament insertion	1.5 h	isoflurane	ASCs	1-7 days after stroke	tail vein	100 µg EVs	3, 7, 14 days after stroke	1. neurobehavioral tests 2. infarct volumes	miRNA analysis
4	Gregorius <i>et al</i> (16)	2021	male C57BL/6j mice	T:39 C:10 E:9	filament insertion	40 min	isoflurane	BMSCs	1, 3, 5 days after stroke	tail vein	200 µl EVs	1, 7, 14, 21, 28, 35, 42, 56 days after stroke	1. neurobehavioral tests 2. infarct volumes	
5	Dumbrava <i>et al</i> (17)	2022	male SD rats	T:99 C:15 E:15	thread loops blockage	1.5 h	isoflurane	BMSCs	1, 3, 7 days after stroke	tail vein	2x10 <sup>6</sup> or 2x10 <sup>7</sup> EVs	3, 7, 14, 21, 28 days after stroke	1. neurobehavioral tests 2. infarct volumes	
6	Hu <i>et al</i> (18)	2016	rats	T:45 C:15 E:15	filament insertion	0.5 h	not stated	BMSCs	1, 3, 5 days after stroke	Intravenous administration	2.46x10 <sup>4</sup> EVs	14, 28 days after stroke	1. neurobehavioral tests 2. infarct volumes	
7	Li <i>et al</i> (19)	2021	male C57BL/6 mice	T:80 C:18 E:18	filament insertion	2 h	isoflurane	DPSCs	2 h after administration	tail vein	100 µl Exos	7 day after stroke	1. neurobehavioral tests 2. infarct volume	expression of inflammatory factors: IL-6, IL-1β and TNF-α

8	Tian <i>et al</i> (20)	2021	C57BL/6 mice	not stated	filament insertion	1 h	not stated	neural progenitor cells	12 h after stroke	tail vein	100 µg EVs	24 h after administration	1.infarct volumes	1. expression of inflammatory factors: TNF-α, IL-1β, IL-6 2.miRNA analysis
9	Han <i>et al</i> (21)	2020	male SD rats	T:64 C:8 E:8	microbipolar coagulation	2 h	isoflurane	BMSCs	10 min after stroke	tail vein	100 µg EVs	1, 2 day after administration	1.neurological function tests 2.infarct volume 3. apoptotic rate	
10	Houa <i>et al</i> (22)	2021	male C57BL/6 mice	T:32 C:8 E:8	filament insertion	1 h	sodium pentobarbital	ASCs	3 consecutive days before stroke	lateral ventricle	100 mmol/d EVs	3 day after reperfusion	1.infarct volumes 2. apoptotic rate	miR-26a
11	Doepfner <i>et al</i> (23)	2015	male C57BL/6 mice	T:116 C:8 E:8	filament insertion	0.5 h	not stated	BMSCs	1, 3, 5 days after stroke	intravenous administration	2x10 <sup>6</sup> EVs	2 day after administration	1.analysis of motor coordination deficits 2.infarct volumes	
12	Heras-Romero <i>et al</i> (24)	2022	male Wistar rats	not stated	filament insertion	1 h	isoflurane	astrocyte cells	30 min after stroke	lateral ventricle	8.5x10 <sup>7</sup> EVs	1, 7, 14, 21 days after stroke	1. neurological function tests 2. infarct volumes	
13	Li <i>et al</i> (25)	2021	male ICR mice	T:57 C:12 E:15	filament insertion	1.5 h	isoflurane	M2 microglial cells	1-7 days after stroke	tail vein	4 µg/kg EVs	7, 14 days after stroke	1.neurological function tests 2.infarct volumes	miR-124
14	Barzegar <i>et al</i> (26)	2020	male C57BL/6 mice	C:5-10 E:5-10	filament insertion	1 h	ketamine and xylazine	hPMSCs	at the time of reperfusion	intravenous administration	2x10 <sup>6</sup> EVs	24 h after stroke	1.neurobehavioral tests 2.infarct volumes	
15	Feng <i>et al</i> (27)	2021	male C57BL/6J mice	T:96 C:24 E:12	filament insertion	1 h	sodium pentobarbital	BMSCs	24 h after stroke	tail vein	200 µg EVs	24 h after stroke	1. neurobehavioral tests 2. infarct volume 3. apoptotic rate	miR-132

16	Song <i>et al</i> (28)	2019	male ICR mice	T:48 C:8 E:8	filament insertion	1 h	isofluran e	M2 microglial cells	3 days stroke	after tail vein		100 µg EXO	3 day after stroke	1. neurobehavioral tests 2. infarct volume 3. apoptotic rate	miR-124
17	Liu <i>et al</i> (29)	2021	male ICR mice	T:60 C:6 E:6	filament insertion	1 h	isofluran e	M2 microglial cells	3 days stroke	after tail vein		100 µg EVs	3 day after stroke	infarct volume	1. expression of inflammato ry factors: IL-18 and IL-1β 2. miR-135a-5 p
18	Dong <i>et al</i> (30)	2021	male Wister rats	T:24 C:4 E:4	filament insertion	not stated	isofluran e	hUCBMS Cs	Not stated	intravenous administration		3x10 <sup>11</sup> EXO	28 day after stroke	1. neurobehavioral tests 2. infarct volume	miR-32a-3p
19	Liu <i>et al</i> (31)	2022	male SD rats	T:15 C:5 E:5	filament insertion	2 h	ketamine and xylazine	hBMSCs	24 h before stroke	internal jugular vein		50 mg EXO	8 h after stroke	1. neurobehavioral tests 2. infarct volume 3. apoptotic rate	Expression of inflammato ry factors: IL-18, IL-1b, TNF-a
20	Xie <i>et al</i> (32)	2023	male C57BL 6 mice	T:20 C:5 E:5	filament insertion	2 h	sodium pentobar bital	BMSCs	3, 4 day after stroke	tail vein		200 µl EXO	28 day after stroke	1. neurobehavioral tests 2. infarct volume	miR-206

MSCs, mesenchymal stem cells; BMSCs, bone marrow MSCs; hBMSCs, human BMSCs; EVs, extracellular vesicles; hPMSCs, human placental MSCs; HUCPCs, human umbilical cord perivascular cells; ASCs, adipose-derived stem cells; DPSCs, dental pulp stem cells; hUCBMSCs, human umbilical cord blood MSCs; miR, microRNA.