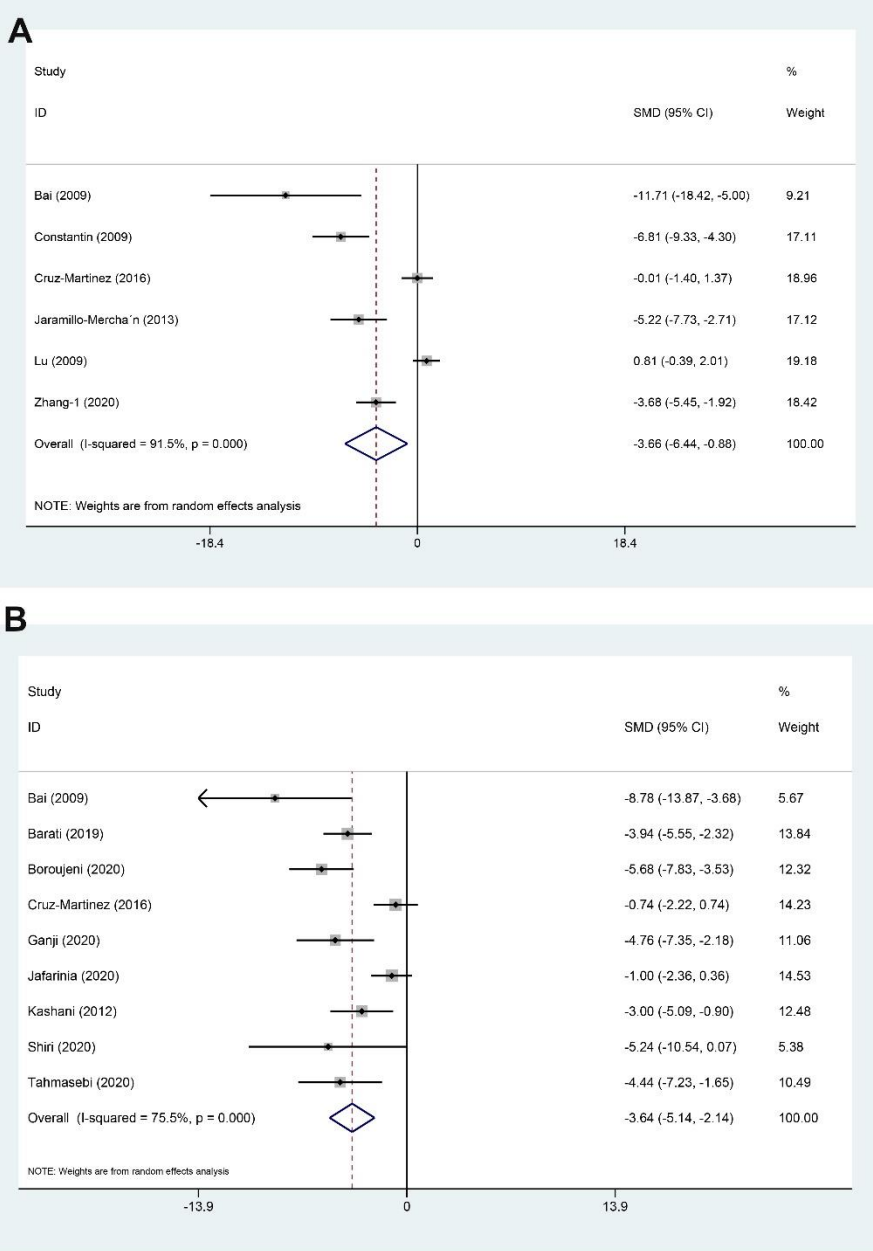
Supplementary Material

Supplementary Figures and Tables

Supplementary Figures



Supplementary Figure 1. Effect size of included comparisons. Forest plot showed mean effect size and 95 % confidence interval (CI) for (**A**) oligodendrocyte precursor cell (OPC) counts and (**B**) oligodendrocyte counts.

Supplementary Tables

Supplementary Table 1. PRISMA checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	2
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	2
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	Not Applicable
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	2
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	3
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it	2

		could be repeated.	
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	3
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	3
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	2
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	4
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	3-4
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	3-4
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	4
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	4
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	4
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	4
Risk of bias within	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	5

studies			
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	4-5
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	4-5
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	5-6
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	5
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	6
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	8
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	8
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	9

Supplementary Table 2. Characteristics of the studies included for the meta-analysis.

Author	Country	Sample size(MSC/control)	Species, strain	Gender	Methods of MS induction	MSC source	Dose	delivery route	Time of administration(dpi)	follow-up(days)
Abramowski, 2016 (1)	Germany	11/8	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	1×10^6	IV	11	14
Bai, 2009 (2)	USA	6/12	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC，human, xenogeneic	3×10^6	IV	16	45
		7/15							26	45
		10/12	mice, SJL	female	$PLP_{139-151}$, SC				16	60
Barati, 2019 (3)	Iran	10/10	mice, C57BL/6	male	cuprizone, oral	BM-MSC, mice, syngeneic	3×10^5	ICV	84	98
Barhum, 2010 (4)	Israel	16/25	mice, C3H.SW	female	MOG_{35-55}, SC	BM-MSC，human, xenogeneic	5×10^5	ICV	6	30
Boroujeni, 2020 (5)	Iran	10/10	mice, C57BL/6	male	cuprizone, oral	BM-MSC, mice, syngeneic	1×10^6	IN	84	114
Bravo, 2016 (6)	Spain	16/16	mice, C57BL/6	female	MOG_{35-55}, SC	DMSC, human, xenogeneic	1×10^6	IP	10, 14, 18, 20, 24	25
Constantin, 2009 (7)	Italy	10/10	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, mice, syngeneic	1×10^6	IV	23, 28	72
Cruz-Martinez, 2016 (8)	Spain	6/6	mice, C57BL/6	NR	cuprizone, oral	BM-MSC, mice, syngeneic	3×10^6	ICV	84	90
Dang, 2014 (9)	China	7/8	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	5×10^5	IV	10,15	30
Donders, 2014 (10)	Belgium	15/15	Rat, DA	female	MOG, SC	WJ-MSC, human, xenogeneic	2×10^6	IV	10-16	46
		11/9							28	46
Fathollahi, 2021 (11)	Iran	5/5	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, mice, syngeneic	5×10^5	IN	15,24	27

Fisher-Shoval, 2012 (12)	Israel	10/11	mice, C57BL/6	female	MOG, SC	PMSC, human, xenogeneic	2×10^5	ICV	14	26
Fransson, 2014 (13)	Sweden	10/10	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^4	IN	15	30
		10/10						IP		
Ganji, 2020 (14)	Iran	6/6	rat, Wistar	male	cuprizone, oral	ASC, human, xenogeneic	1×10^6	IV	21	49
Gerdoni, 2007 (15)	Italy	20/20	mice, SJL/J	female	$PLP_{139-151}$, SC	BM-MSC, mice, allogeneic	1×10^6	IV	12	72
Glenn, 2014 (16)	USA	3/3	mice, C57BL/6	female	MOG_{37-50}, SC	BM-MSC, mice, syngeneic	1×10^7	IP	3, 8	30
Gordon, 2008 (17)	UK	5/5	mice, C57BL/6	NR	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	7.5×10^5	IP	6	50
Gordon, 2010 (18)	UK	10/10	mice, C57BL/6	NR	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IV	6	50
Gramlich, 2020 (19)	USA	20/20	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IV	7	32
Grigoriadis, 2011 (20)	Austria	11/8	mice, C57BL/6	female	MOG_{35-55}, SC (severe)	BM-MSC, mice, syngeneic	5×10^5	ICV	8-10	100
		9/8			MOG_{35-55}, SC (mild)					
Guo, 2013 (21)	China	15/15	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IV	12	26
Hao, 2016 (22)	China	11/11	rat, Wistar	female	GPSCH, SC	BM-MSC, rat, syngeneic	1×10^6	IV	10	32
Hedayatpour, 2012 (23)	Iran	3/3	mice, C57BL/6	male	cuprizone, oral	ASC, mice, syngeneic	1×10^6	IV	42	52
Hou, 2013 (24)	Korea	10/10	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1.5×10^6	IV	7	46

Hu, 2021 (25)	China	6/6	mice, C57BL/6	female	MOG_{35-55} , SC	BM-MSC, mice, syngeneic	4×10^6	IV	6, 8	25
Jafarinia, 2020 (26)	Iran	5/5	mice, C57BL/6	female	MOG_{35-55} , SC	ASC, human, xenogeneic	1×10^6	IV	10	30
Jaramillo-Mercha´n, 2013 (27)	spain	7/7	mice, C3H/He	NR	cuprizone, oral	BM-MSC, mice, allogeneic	3×10^5	ICP	90	105
Jiang, 2017 (28)	China	5/5	rat, Lewis	male	GPSCH, SC	PMSC, rat, allogeneic	1×10^6	ICV	10	56
		5/5				ES-MSC, rat, allogeneic				
Kashani, 2012 (29)	Iran	4/4	mice, C57BL/6	male	cuprizone, oral	ASC, mice, syngeneic	1×10^6	IV	42	52
Kassis, 2008 (30)	Israel	10/8	mice, C57BL/6	female	MOG_{35-55} , SC	BM-MSC, mice, syngeneic	1×10^6	IV	10	50
		10/12						ICV		
Kassis, 2013 (31)	Israel	10/5	mice, C57BL/6	female	MOG_{35-55} , SC	BM-MSC, mice (EAE), syngeneic	1×10^6	IV	10	40
		10/5				BM-MSC, mice (naïve), syngeneic				
Kassis, 2021 (32)	Israel	12/12	mice, C57BL/6	female	MOG_{35-55} , SC	BM-MSC, human, xenogeneic	5×10^5	ICV	8	40
Khezri, 2018 (33)	Iran	7/7	rat, Wistar	male	GPSCH, SC	BM-MSC, rat, syngeneic	2×10^6	IP	NR(symptoms onset)	37
Kim, 2017 (34)	Korea	9/9	mice, C57BL/6	female	MOG_{35-55} , SC	BM-MSC, human, xenogeneic	1×10^6	IV	14	46
Kim, 2018 (35)	Korea	3/3	mice, C57BL/6	female	MOG_{35-55} , SC	BM-MSC, human, xenogeneic	1×10^6	IV	14	50
Kurte, 2015 (36)	Chile	7/2	mice, C57BL/6	female	MOG_{35-55} , SC	BM-MSC, mice, syngeneic	1×10^6	IV	10	50
		7/2							18	50

		7/2							30	50
Kurte, 2020 (37)	Chile	12/12	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	1×10^6	IP	7	30
Li-1, 2019 (38)	China	6/6	mice, C57BL/6	female	MOG_{35-55}, SC	UC-MSCs, human, xenogeneic	2×10^6	IV	12, 22	30
Li-2, 2019 (39)	China	8/8	rat, Sprague-Dawley	female	GPSCH, SC	BM-MSC, rat, syngeneic	1×10^6	IV	1	14
Liao, 2016 (40)	USA	6/6	mice, C57BL/6	NR	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IV	14	35
Liu, 2013 (41)	China	4/4	mice, C57BL/6	female	MOG_{35-55}, SC	UC-MSCs, human, xenogeneic	2×10^7	IV	15	50
Liu, 2020 (42)	China	9/9	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	5×10^5	IV	11	18
Liu, 2021 (43)	China	15/15	mice, C57BL/6	male	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	NR	ICV	8	36
Lu, 2009 (44)	China	9/14	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IV	10	30
Mahfouz, 2017 (45)	Egypt	15/15	mice, Swiss	male	GPSCH, SC	BM-MSC, mice, allogeneic	1×10^6	IP	0	28
Manganeli Polonio, 2021 (46)	Brazil	7/7	mice, C57BL/6	female	MOG_{35-55}, SC	meMSC, mice, syngeneic	2×10^6	IP	0, 10	30
Marin-Bañasco, 2014 (47)	Spain	9/9	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, mice, syngeneic	1×10^6	IV	13	35
		10/9	mice, SJL/JCrl	female	$PLP_{139-151}$, SC	ASC, mice, syngeneic	1×10^6	IV	12	50
Marin-Bañasco, 2017 (48)	Spain	11/11	mice, SJL	female	$PLP_{139-151}$, SC	ASC, mice, syngeneic	1×10^6	IV	11	50
		8/9	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, mice, allogeneic	1×10^6	IV	12	35

Marzban, 2018 (49)	Iran	12/12	mice, C57BL/6	male	cuprizone, oral	BM-MSC, human, xenogeneic	2×10^6	IP	28	42
Mitra, 2015 (50)	Malaysia	8/8	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	5×10^5	IV	11	20
Morando, 2012 (51)	Italy	14/14	mice, C57BL/6	NR	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IT	10	45
		14/14						IV		
Payne-1, 2012 (52)	Australia	5/5	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IV	12, 14, 16	22
		5/5				ASC, human, xenogeneic				
		5/5				UC-MSC, human, xenogeneic				
Payne-2, 2012 (53)	Australia	10/10	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, human, xenogeneic	5×10^6	IP	12, 13, 14	33
Payne, 2013 (54)	Australia	10/10	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, human, xenogeneic	3×10^6	IP	1, 3, 5	40
Rafei-1, 2009 (55)	Canada	10/10	mice, Balb/c	NR	MOG, SC	BM-MSC, mice, syngeneic	2×10^6	IP	16, 28	50
		10/10				BM-MSC, mice, allogeneic				
Rafei-2, 2009 (56)	Canada	10/10	mice, Balb/c	female	MOG, SC	BM-MSC, mice, allogeneic	2×10^6	IP	15, 27, 45	46
Ryu, 2013 (57)	Korea	7/7	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IV	7	60
Schafer, 2008 (58)	Germany	8/8	rat, DA	female	MOG, SC	BM-MSC, rat, syngeneic	4×10^6	IV	0	40
Scruggs, 2013 (59)	USA	23/11	mice, C57BL/6	female	MOG_{35-55}, SC	ASC(young), human, xenogeneic	1×10^6	IP	0	30

		14/11				ASC(old), human, xenogeneic				30
Selim, 2016 (60)	Egypt	5/3	rat, Wistar	female	MOG_{35-55}, SC	PMSC, human, xenogeneic	1×10^6	IV	9	30
		5/3							16	30
Semon, 2014 (61)	USA	10/6	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, human, xenogeneic	1×10^6	IP	0	30
		12/6				ASC, human, xenogeneic				
Shalaby, 2016 (62)	Egypt	7/4	rat, albino	female	MOG_{35-55}, SC	ASC, human, xenogeneic	1×10^6	IV	15	40
		7/4							25	40
Shapira, 2016 (63)	Israel	20/20	mice, C57BL/6	female	MOG_{35-55}, SC	PMSC, human, xenogeneic	2×10^6	IM	11, 15	20
Shiri, 2020 (64)	Iran	3/3	mice, C57BL/6	male	cuprizone, oral	UC-MSC, human, xenogeneic	3×10^5	ICV	84	96
Shu, 2018 (65)	China	8/8	mice, C57BL/6	female	MOG_{35-55}, SC	AMC, human, xenogeneic	1×10^6	IP	14	35
Singh, 2017 (66)	India	6/6	mice, C57BL/6	male	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	1×10^6	IV	8	38
Strong, 2015 (67)	USA	8/4	mice, C57BL/6	female	MOG, SC	lnASC, human, xenogeneic	1×10^6	IP	15	30
		7/4				obASC, human, xenogeneic				
Tahmasebi, 2020 (68)	Iran	5/5	mice, C57BL/6	male	cuprizone, oral	BM-MSC, mice, syngeneic	3×10^5	ICV	91	105
Togha, 2017 (69)	Iran	7/7	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	2×10^6	IP	10, 17	50
Trubiani, 2016 (70)	Italy	10/10	mice, C57BL/6	male	MOG, SC	PDLCS, human, xenogeneic	1×10^6	IV	14	56

Vega-Letter, 2016 (71)	Chile	10/10	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	2×10^6	IP	4	27
Wang, 2008 (72)	China	7/7	rat, Lewis	female	MBP_{68-84}, SC	BM-MSC, rat, syngeneic	1×10^7	IV	6	28
Wang, 2014 (73)	USA	6/6	mice, C57BL/6	NR	MOG_{35-55}, SC	ES-MSC, human, xenogeneic	1×10^6	IP	18	35
Wang, 2016 (74)	China	10/10	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	1.5×10^6	IV	7	50
Wang, 2018 (75)	China	12/12	mice, C57BL/6	female	MOG_{35-55}, SC	UC-MSC, human, xenogeneic	5.5×10^6	IV	7, 14, 21, 28	33
Xin, 2020 (76)	China	3/3	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	1×10^7	IP	14,20	42
Yousefi, 2013 (77)	Iran	8/4	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, mice, syngeneic	0.5×10^6	IP	12	60
		8/4					1×10^6	IV	12	60
Yousefi, 2016 (78)	Iran	8/8	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, mice, syngeneic	1×10^6	IP	10, 17, 21, 28	60
Yu, 2016 (79)	China	15/15	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	1.5×10^5	IN	12	28
Zappia, 2005 (80)	Italy	8/4	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	1×10^6	IV	10	48
		8/4							15	48
		6/6							24	60
Zhang, 2005 (81)	USA	10/3	mice, SJL/J	female	$PLP_{139-151}$, SC	BM-MSC, human, xenogeneic	0.5×10^6	IV	NR(symptoms onset)	+90
		10/3					2×10^6	IV	NR(symptoms onset)	+90
		10/3					3×10^6	IV	NR(symptoms onset)	+90
Zhang, 2006 (82)	USA	4/4	mice, SJL/J	female	$PLP_{139-151}$, SC	BM-MSC, human, xenogeneic	2×10^6	IV	NR(symptoms onset)	+ 315

Zhang, 2009 (83)	USA	8/15	mice, SJL/J	female	PLP $_{139-151}$, SC	BM-MSC, mice, syngeneic	2×10^6	IV	NR(symptoms onset)	+90
Zhang, 2014 (84)	China	20/10	mice, C57BL/6	female	MOG_{35-55}, SC	ASC, mice, syngeneic (EAE)	1×10^6	IP	0	30
		20/10				ASC, mice, syngeneic (wt)				
Zhang-1, 2020 (85)	China	8/8	rat, Wistar	female	GPSCH, SC	BM-MSC, rat, syngeneic	1×10^6	ICV	NR(symptoms onset)	+28
Zhang-2, 2020 (86)	China	20/20	mice, C57BL/6	female	MOG_{35-55}, SC	UC-MSC, human, xenogeneic	1×10^6	IV	13	42
Zhou, 2020 (87)	China	10/10	mice, C57BL/6	female	MOG_{35-55}, SC	UC-MSC, human, xenogeneic	1×10^7	IV	14	28
Zhu, 2012 (88)	China	10/5	mice, C57BL/6	female	MOG_{35-55}, SC	BM-MSC, mice, syngeneic	1×10^6	IV	20, 22	60
		10/5				BM-MSC, mice, allogeneic				

Legends: DPI: days post immunization; NR, not recorded; MOG, myelin oligodendrocyte glycoprotein; PLP, proteolipid protein; GPSCH, Guinea Pig Spinal Cord Homogenate; MBP, myelin basic protein; SC, subcutaneous; BM-MSC, bone marrow-derived mesenchymal stem cell; DMSC, decidua-derived mesenchymal stem cell; ASC, adipose tissue-derived mesenchymal stem cell; UC-MSC, umbilical cord mesenchymal stem cell; PMSC, placenta-derived mesenchymal stem cell; ES-MSC, embryonic stem cell-derived mesenchymal stem cell; PDLSC, periodontal ligament-derived mesenchymal stem cell; AMC, amnion mesenchymal stem cell; meMSC, murine endometrial-derived mesenchymal stem cell; IV, intravenous; IP, intraperitoneal; IN, intranasal; ICV, intra-cerebroventricular; IM, intramuscular; ICP, intra-cerebroparenchymal; IT, intrathecal.

Supplementary Table 3. Outcomes of the studies included for the meta-analysis.

Study	Clinical score	TEM	MBP staining	LFB staining	Spielmeyer staining	Solochrome Cyanin staining	HE staining	MRI	OPC	Olig	Morris water maze	Baaket test	Footprint analysis	Track visualizations	Rotarod
Abramowski, 2016	√														
Bai, 2009	√			√					√	√					
Barati, 2019		√		√						√					
Barhum, 2010	√														
Boroujeni, 2020		√		√						√	√				
Bravo, 2016	√														
Constantin, 2009	√				√				√						
Cruz-Martinez, 2016		√						√	√	√					
Dang, 2014	√														
Donders, 2014	√														
Fathollahi, 2021	√			√											
Fisher-Shoval, 2012	√														
Fransson, 2014	√														
Ganji, 2020		√	√							√		√			
Gerdoni, 2007	√														
Glenn, 2014	√														
Gordon, 2008	√														
Gordon, 2010	√		√												
Gramlich, 2020	√														
Grigoriadis, 2011	√														
Guo, 2013	√														
Hao, 2016	√			√											
Hedayatpour, 2012		√													
Hou, 2013	√		√	√											
Hu, 2021	√		√												
Jafarinia, 2020	√		√	√						√					
Jaramillo-Mercha´n, 2013			√						√						

Jiang, 2017	√		√							
Kashani, 2012		√						√		
Kassis, 2008	√									
Kassis, 2013	√			√						
Kassis, 2021	√									
Khezri, 2018						√				
Kim, 2017	√									
Kim, 2018	√		√	√						
Kurte, 2015	√									
Kurte, 2020	√									
Li-1, 2019	√			√						
Li-2, 2019	√			√						
Liao, 2016	√			√						
Liu, 2013				√						
Liu, 2020	√			√						
Liu, 2021	√			√						
Lu, 2009	√				√		√			
Mahfouz, 2017	√									
Manganeli Polonio, 2021	√			√						
Marin-Bañasco, 2014	√		√							
Marin-Bañasco 2017	√		√							
Marzban, 2018				√						
Mitra, 2015	√								√	
Morando, 2012	√			√						
Payne-1, 2012	√									
Payne-2, 2012	√									
Payne, 2013	√									
Rafei-1, 2009	√									
Rafei-2, 2009	√									
Ryu, 2013	√			√						
Schafer, 2008	√									
Scruggs, 2013	√			√						√
Selim, 2016	√									
Semon, 2014	√			√						

Shalaby, 2016	√											
Shapira, 2016	√											
Shiri, 2020		√		√			√					
Shu, 2018	√			√								
Singh, 2017	√			√								
Strong, 2015	√			√						√		
Tahmasebi, 2020		√		√			√				√	
Togha, 2017	√			√								
Trubiani, 2016	√											
Vega-Letter, 2016	√											
Wang, 2008	√											
Wang, 2014	√											
Wang, 2016	√											
Wang, 2018	√	√	√	√								
Xin, 2020	√			√								
Yousefi, 2013	√											
Yousefi, 2016	√											
Yu, 2016	√			√								
Zappia, 2005				√								
Zhang, 2005	√			√								
Zhang, 2006	√											
Zhang, 2009	√			√								
Zhang, 2014	√			√								
Zhang-1, 2020	√					√						
Zhang-2, 2020	√		√	√								
Zhou, 2020	√											
Zhu, 2012	√											

Legends: TEM, transmission electron microscope; MBP, myelin basic protein; LFB, Luxol Fast Blue; HE, hematoxylin-eosin; MRI, magnetic resonance imaging; OPC, oligodendrocyte precursor cell; Olig, oligodendrocyte.

Supplementary Table 4. Quality scores of the studies included for the meta-analysis.

Study	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Total
Abramowski, 2016	√					√		√		√	4
Bai, 2009	√					√		√			3
Barati, 2019	√		√			√		√	√	√	6
Barhum, 2010	√					√		√			3
Boroujeni, 2020	√					√		√	√		4
Bravo, 2016	√					√		√		√	4
Constantin, 2009	√					√		√		√	4
Cruz-Martinez, 2016	√			√		√		√		√	5
Dang, 2014	√					√		√		√	4
Donders, 2014	√		√			√		√		√	5
Fathollahi, 2021	√	√	√	√	√	√		√		√	8
Fisher-Shoval, 2012	√					√		√	√		4
Fransson, 2014	√				√	√		√		√	5
Ganji, 2020	√		√			√		√	√	√	6
Gerdoni, 2007	√				√	√		√			4
Glenn, 2014	√					√				√	3
Gordon, 2008	√					√					2
Gordon, 2010	√		√	√		√					4
Gramlich, 2020	√					√		√			3
Grigoriadis, 2011	√					√					2
Guo, 2013	√					√		√			3
Hao, 2016	√	√	√		√	√		√		√	7
Hou, 2013	√		√			√		√		√	5
Hu, 2021	√					√		√		√	4
Hedayatpour, 2012	√		√			√				√	4
Jafarinia, 2020	√					√		√		√	4
Jaramillo-Mercha´n, 2013	√				√	√		√		√	5
Jiang, 2017	√		√		√	√		√		√	6
Kashani, 2012	√		√			√					3
Kassis, 2008	√				√	√	√	√			5
Kassis, 2013	√		√		√	√				√	5
Kassis, 2021	√					√				√	3
Khezri, 2018	√		√		√	√		√	√		6
Kim, 2017	√		√		√	√		√	√	√	7
Kim, 2018	√		√		√	√	√	√		√	7
Kurte, 2015	√					√		√		√	4
Kurte, 2020	√					√		√		√	4

Liao, 2016	√			√	√		√		√	5
Li-1, 2019	√	√			√		√		√	5
Li-2, 2019	√	√	√	√	√		√		√	7
Liu, 2013	√				√		√		√	4
Liu, 2020	√			√	√		√		√	5
Liu, 2021	√	√	√	√	√	√	√		√	8
Lu, 2009	√				√		√			3
Mahfouz, 2017	√	√	√		√		√		√	6
Manganeli Polonio, 2021	√				√		√		√	4
Marin-Bañasco, 2014	√	√		√	√		√	√	√	7
Marin-Bañasco 2017	√	√		√	√		√	√	√	7
Marzban, 2018	√			√	√		√		√	5
Mitra, 2015	√				√		√		√	4
Morando, 2012	√				√				√	3
Payne-1, 2012	√				√		√			3
Payne-2, 2012	√				√		√		√	4
Payne, 2013	√				√		√			3
Rafei-1, 2009	√				√				√	3
Rafei-2, 2009	√				√				√	3
Ryu, 2013	√	√		√	√				√	5
Schafer, 2008	√				√		√			3
Scruggs, 2013	√	√	√	√	√		√		√	7
Selim, 2016	√			√	√		√		√	5
Semon, 2014	√			√	√		√		√	5
Shalaby, 2016	√				√		√		√	4
Shapira, 2016	√				√		√		√	4
Shiri, 2020	√	√		√	√		√		√	6
Shu, 2018	√	√		√	√		√	√	√	7
Singh, 2017	√		√	√	√		√		√	6
Strong, 2015	√				√		√		√	4
Tahmasebi, 2020	√			√	√		√	√	√	6
Togha, 2017	√			√	√		√	√	√	6
Trubiani, 2016	√	√			√	√	√	√	√	7
Vega-Letter, 2016	√				√		√		√	4
Wang, 2008	√				√		√			3
Wang, 2014	√	√	√	√	√		√			6
Wang, 2016	√	√			√	√	√		√	6
Wang, 2018	√	√			√		√		√	5
Xin, 2020	√	√			√		√		√	5
Yousefi, 2013	√			√	√		√			4
Yousefi, 2016	√			√	√		√			4
Yu, 2016	√			√	√	√	√	√	√	7

Zappia, 2005	√				√	√			3
Zhang, 2005	√	√		√	√	√			5
Zhang, 2006	√	√		√	√	√			5
Zhang, 2009	√	√		√	√	√			5
Zhang, 2016	√	√	√	√	√	√		√	7
Zhang-1, 2020	√	√		√	√			√	5
Zhang-2, 2020	√	√			√	√		√	5
Zhou, 2020	√				√	√	√	√	5
Zhu, 2012	√			√	√	√			4

Legends: (1) publication in a peer-reviewed journal; (2) reporting of a sample size calculation; (3) randomized treatment allocation; (4) allocation concealment; (5) blind assessment of outcome; (6) use of suitable animal models; (7) avoidance of anesthetics with significant intrinsic neuroprotective activity, such as ketamine; (8) statement of compliance with regulatory requirements; (9) statements describing temperature control; (10) declarations of potential conflicts of interest.

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