

# INPLASY PROTOCOL

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submission:** Preliminary  
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**Conflicts of interest:**  
None declared.

## Exosome therapy for ischemic stroke in animal studies: a systematic review and Meta-analysis

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**Review question / Objective:** Ischemic stroke is one of the most common types of stroke, accounting for approximately 70% of all cerebrovascular diseases. It is a clinical syndrome in which the blood supply to brain tissue is impaired for various reasons, resulting in ischaemic and hypoxic necrosis, which in turn causes neurological deficits. We conducted a systematic review and meta-analysis of data from studies of ischaemic stroke in animals to assess the efficacy of exosomes on ischaemic stroke in animals. **P:** All studies included laboratory rats and mice modelled for ischaemic stroke. **I:** Experimental groups were administered exosomes, regardless of the frequency of administration, mode of administration and source of exosomes. **C:** where animals in the control group receive placebo or a negative control. **O :** Cerebral infarct volume or neurological score. **S :** Ischemic stroke mouse and rat model experiments.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 March 2022 and was last updated on 14 March 2022 (registration number INPLASY202230063).

### INTRODUCTION

**Review question / Objective:** Ischemic stroke is one of the most common types of stroke, accounting for approximately 70% of all cerebrovascular diseases. It is a clinical syndrome in which the blood supply to brain tissue is impaired for various

reasons, resulting in ischaemic and hypoxic necrosis, which in turn causes neurological deficits. We conducted a systematic review and meta-analysis of data from studies of ischaemic stroke in animals to assess the efficacy of exosomes on ischaemic stroke in animals. **P:** All studies included laboratory rats and mice modelled for

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**Condition being studied:** There have been a number of preclinical studies showing an ameliorative effect of exosomes in ischaemic stroke, but there have been few systematic evaluations.

## METHODS

**Participant or population:** Animal models of ischaemic stroke.

**Intervention:** Exosome.

**Comparator:** Placebo or negative analogues.

**Study designs to be included:** Animal experiments.

**Eligibility criteria:** Inclusion criteria: Study design: all studies were controlled studies, whether or not randomised groups and blinded; Study population: animal models of ischaemic stroke; Intervention: exosomes; Outcome indicators: cerebral infarct volume or neurological score. Exclusion criteria: clinical and epidemiological studies; incorrect animal models; duplicate publications and studies with insufficient data; Full text not available; Sample size too small.

**Information sources:** Pubmed, embase, Cochrane, WOS, CNKI, WanFang data, SinoMed.

**Main outcome(s):** Cerebral infarct volume or neurological score.

**Data management:** Endnote.

**Quality assessment / Risk of bias analysis:** Cochrane TOOL.

**Strategy of data synthesis:** It followed the Preferred Reporting Items for Systematic Review and Meta- Analysis (PRISMA).

**Subgroup analysis:** Subgroups according to the interventions in the experiment.

**Sensitivity analysis:** If, after deleting any of them, the combined results for the rest of the literature are not significantly different from those without deletion, this means that the sensitivity analysis is passed.

**Country(ies) involved:** China.

**Keywords:** Ischemic stroke, exosome, Animal experiments, a systematic review and Meta-analysis.

### Contributions of each author:

Author 1 - Zhang Le.

Author 2 - Gao Fulin.

Author 3 - Hu Pengjuan.

Author 4 - He Yan.

Author 5 - Shang Qianlan.

Author 6 - Zhang Yi.