INPLASY

Therapeutic Potential of Quercetin in Depressive Symptoms: A Systematic Review and Meta-Analysis of Preclinical Studies

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202530047

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 March 2025 and was last updated on 11 March 2025.

INTRODUCTION

Review question / Objective Population(P):Animal studies Intervention(I):Studies involving quercetin treatment, either alone or in combination Comparison(C):Control groups with either blank controls or standard treatments Outcomes(O): Behavioral tests and Multiple biochemical indexes.

Condition being studied Depression is a common and highly recurrent mental disorder globally, characterized by persistent low mood, anxiety, anhedonia, and cognitive impairments. According to reports by the World Health Organization (WHO), over 300 million people worldwide suffer from depression. Approximately 40% of suicide cases are associated with depression. It is expected that by 2030, depression will become the leading cause of disability worldwide, placing a significant psychological and economic burden on individuals, families, and society.

METHODS

Participant or population Animal studies, with model preparation requiring ethical approval, and no restrictions on species, gender, age, or weight of the animals.

Intervention Studies involving quercetin treatment, either alone or in combination, with no restrictions on the route of administration, duration, dosage, or formulation.

Comparator Control groups with either blank controls or standard treatments.

Study designs to be included Animal studies.

Eligibility criteria Exclusion Criteria
(1) Review articles, case reports, editorials/letters, patents, abstracts, and other informal journals; (2) In vitro studies, computer simulation studies, and all clinical trials; (3) Republished and irrelevant

literature; (4) Studies on quercetin derivatives; (5) Experimental studies lacking a control group; (6) Studies with missing original articles or incomplete original data; (7) Studies where outcome data cannot be extracted or merged.

Information sources This study conducted a systematic search of the PubMed, EMBASE, Cochrane Library, and Web of Science electronic databases.

Main outcome(s) Primary outcome measures included the forced swimming test (FST), tail suspension test (TST), sucrose preference test (SPT), open field test (OFT), and elevated plus maze (EPM).

Quality assessment / Risk of bias analysis Two researchers independently assessed the risk of bias in each included study using the SYRCLE risk of bias assessment tool, specifically analyzing the following types of bias: selection bias (random sequence generation, baseline characteristics, allocation concealment), performance bias (random housing, blinding), detection bias (random outcome assessment, blinding), attrition bias (incomplete outcome data), reporting bias (selective reporting), and other biases. Each type of bias was classified as high risk, low risk, or unclear. In the event of a discrepancy, the issue was resolved through discussion with a third researcher.

Strategy of data synthesis All data analyses were performed using Review Manager 5.4 and STATA 15.1 software.

Subgroup analysis None.

Sensitivity analysis STATA 15.1 software.

Country(ies) involved China.

Keywords Quercetin; Depression; Systematic Review; Meta-Analysis.

Contributions of each author
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Author 3 - Lixin Chen.
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