

INPLASY

The impact of kefir consumption on inflammation, oxidative stress status, and metabolic syndrome-related parameters in animal models: A systematic review and meta-analysis

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Corresponding author:

Sasitorn Chusri

sasitorn.chu@mfu.ac.th

Author Affiliation:

Mae Fah Luang University, Thailand.

Qaisrani, ZN; Lin, WP; Lay, BB; Phyo, KY; San, MM; Awaeloh, N; Aunsorn, S; Pattanayaiying, R; Na, Ayudthaya SP; Hongkulsup, C; Buntin, N; Chusri, S.

ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2024100010

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 2 October 2024 and was last updated on 2 October 2024.

INTRODUCTION

Review question / Objective What are the effects of kefir consumption on metabolic syndrome related parameters, oxidative stress markers, and inflammatory markers as evidenced by animal studies?

Rationale It will examine the important parameters related to MetS, inflammatory and oxidative stress markers which helps in summarizing the updated research for animal studies. These animal models provide a controlled environment to explore the mechanisms underlying kefir's effects on metabolic and inflammatory pathways, offering insights into its potential benefits for human health. The findings will be relevant for developing dietary strategies to mitigate MetS and its associated health risks; therefore, they give information for

future clinical studies and nutritional guidelines for human health improvement.

Condition being studied Mainly metabolic syndrome-related parameters as well as inflammatory and oxidative stress markers will be investigated in the current research.

METHODS

Search strategy Databases such as PubMed, Scopus, AMED, LILACS, etc. will be used. There are no restrictions for language and publication period during the searching stage.

Participant or population Rodent models of metabolic syndrome.

Intervention Kefir, bacteria isolated from kefir, metabolite from kefir with no restriction on combination with any chemicals or interventions.

Comparator Any comparisons or controls will be included such as placebo and water.

Study designs to be included Cohort study including control and experimental groups will be considered for this work.

Eligibility criteria In vivo studies of rodent models of metabolic syndrome treated with kefir, bacteria isolated from kefir, metabolites from kefir with no restriction on combination with any chemicals or interventions. Non-English studies will be excluded.

Information sources Databases such as PubMed, Scopus, AMED, LILACS, etc will be considered and in case of any clarification, authors will be contacted.

Main outcome(s) Metabolic syndrome-related parameters: Weight gain, TC, TG, LDL-C, HDL-C, VLDL-C, etc.
Inflammation markers: Interleukin IL-6, IL-1b, tumor necrosis factor (TNF-alpha), etc.
Oxidative stress markers: Ox-LDL, MDA, CAT, SOD etc.

Additional outcome(s) Inflammatory markers: Interleukin IL-6, IL-1b, tumor necrosis factor (TNF-alpha), etc.
Oxidative stress: MDA, ROS, SOD, GSH, etc.

Quality assessment / Risk of bias analysis

1. Use SYRCLE's risk of bias tool
2. The CAMARADES checklist for study quality.

Strategy of data synthesis A qualitative as well as a quantitative approach will be applied.

Subgroup analysis None.

Sensitivity analysis None.

Language restriction English.

Country(ies) involved Thailand and Pakistan.

Keywords Rodent; Kefir; probiotics; Anti-inflammatory parameters; Metabolic Syndrome; Oxidative Stress; Inflammatory markers.

Contributions of each author

Author 1 - Zahid Naeem Qaisrani - Writing the original draft, data curation, validation, and formal analysis.

Email: qaisrani.research@mfu.ac.th

Author 2 - Wai Phyo Lin - Article searching, screening, and data curation.

Author 3 - Bo Bo Lay - Article searching, screening, and data curation.

Author 4 - Khin Yadanar Phyo - Article searching, screening, and data curation.

Author 5 - Myat Mon San - Article searching, screening, and data curation.

Author 6 - Nurulhusna Awaeloh - Data validation and visualization.

Author 7 - Sasithon Aunsorn - Data validation and visualization.

Author 8 - Rinrada Pattanayaiying - Co-funding acquisition, conceptualization, and Writing-review & editing.

Email: rinrada.pa@ssru.ac.th

Author 9 - Susakul Palakawong Na Ayudthaya - Co-funding acquisition, conceptualization, and Writing-review & editing.

Email: susakul@tistr.or.th

Author 10 - Choosit Hongkulsup - Co-funding acquisition, conceptualization, and Writing-review & editing.

Email: c_hongkulsup@hotmail.com

Author 11 - Nirunya Buntin - Co-funding acquisition, conceptualization, and Writing-review & editing.

Email: nirunya.bu@skru.ac.th

Author 12 - Sasitorn Chusri - Funding acquisition, conceptualization, supervision, writing-review & editing.

Email: sasitorn.chu@mfu.ac.th