

Prognostic value of TRIM29 in human cancers: a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

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Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 October 2026 and was last updated on 26 October 2026.

INTRODUCTION

Review question / Objective TRIM29, an important member of the Tripartite motif (TRIM) family, exerts a predominant influence on cancer growth and metastatic progression. This systematic review aimed to evaluate the association between TRIM29 expression and clinical outcomes in cancer.

Condition being studied TRIM29, an important member of the Tripartite motif (TRIM) family, exerts a predominant influence on cancer growth and metastatic progression. This systematic review aimed to evaluate the association between TRIM29 expression and clinical outcomes in cancer.

METHODS

Participant or population We systematically searched the PubMed, Web of Science, Embase,

Cochrane Library and CNKI from June 2007 to May 2025. The relationship between TRIM29 expression and cancer patients' overall survival (OS) or disease-free survival (DFS) or progression-free survival (PFS) were evaluated using pooled hazard ratios (HRs) and their corresponding 95% confidence intervals (CIs).

Intervention No.

Comparator No.

Study designs to be included We systematically searched the PubMed, Web of Science, Embase, Cochrane Library and CNKI from June 2007 to May 2025. The relationship between TRIM29 expression and cancer patients' overall survival (OS) or disease-free survival (DFS) or progression-free survival (PFS) were evaluated using pooled hazard ratios (HRs) and their corresponding 95% confidence intervals (CIs).

Eligibility criteria Review articles and analysis.

Information sources PubMed, Web of Science, Embase, Cochrane Library and CN.

Main outcome(s) Twenty studies involving 2243 patients were included in the analysis, and the pooled analysis found that high TRIM29 was correlated with worse OS(HR:1.66, 95%CI: 1.25-2.20, $p<0.01$) and DFS (HR: 1.43, 95% CI: 0.84-2.44, $p<0.001$) in most cancers(ovarian cancer, pancreatic cancer, osteosarcoma, right colorectal cancers, thyroid carcinoma, NSCLC, Pancreatic Adenocarcinoma, esophageal squamous cell carcinoma and gastric cancer)..

Quality assessment / Risk of bias analysis All the articles included in the analysis were assessed independently using the Newcastle-Ottawa Scale (NOS).

Strategy of data synthesis The Stata SE version 12.0 (Stata Corp LP, College Station, Texas, USA) was used to analyze all the data from the included articles, and a P-value < 0.05 indicated a significant difference. The pooled HR with the corresponding 95% CI were calculated to quantify the association between TRIM29 expression and patients' OS/DFS. And the association between TRIM29 expression and clinicopathological features was described as the combined OR and 95% CI. The heterogeneity of all enrolled articles was checked using Cochran's Q and I² tests, A random-effects framework was adopted when the heterogeneity was statistically significant ($P \geq 50\%$). Otherwise, the fixed-effects framework was employed. Potential publication bias was assessed using the Begg's and Egger's tests, what's more, the reliability of our results was assessed using a sensitivity analysis.

Subgroup analysis we also assessed the association between TRIM29 expression and subgroup, including tumor sample, method and cancer type.

Sensitivity analysis The heterogeneity of all enrolled articles was checked using Cochran's Q and I² tests, A random-effects framework was adopted when the heterogeneity was statistically significant ($P \geq 50\%$).

Country(ies) involved China.

Keywords TRIM29, cancer, overall survival, disease-free survival, meta-analysis.

Contributions of each author

Author 1 - Debao Liu.

Author 2 - Yan Li.

Author 3 - Zhongsheng Guo.

Author 4 - Shaofei Wu.