

TRIM56

TRIM56 (Tripartite Motif Containing 56) is a [gene](#) that encodes a protein belonging to the tripartite motif (**TRIM**) family of proteins. TRIM56 contains three domains: a [RING finger domain](#), a [B-box zinc finger](#), and a [coiled coil](#) domain.

The TRIM family of proteins is involved in a wide range of cellular processes, including protein [ubiquitination](#), cell signaling, and immune response. TRIM56 has been shown to play a role in the innate immune response to viral infections by promoting the production of interferons, which are important antiviral cytokines.

In addition to its role in the immune response, TRIM56 has also been implicated in the development and progression of certain cancers, including breast and lung cancer. TRIM56 has been shown to promote cancer cell proliferation and metastasis in vitro and in vivo, making it a potential target for cancer therapy.

Further research is needed to fully understand the functions of TRIM56 and its potential as a therapeutic target in various diseases.

[Diffuse](#) invasion is an important factor leading to treatment [resistance](#) and a poor [prognosis](#) in [gliomas](#). Zhang et al. found that [expression](#) of the tripartite motif containing 56 (**TRIM56**), a [RING finger domain](#) containing [E3 ubiquitin ligase](#), was markedly higher in [glioma](#) than in normal brain tissue, and was significantly correlated with malignant [phenotypes](#) and a poor [prognosis](#). [In vitro](#) and in vivo experimental studies revealed that TRIM56 promoted the migration and invasion of [glioma cells](#). Mechanistically, TRIM56 was transcriptionally regulated by [SP1](#) and promoted the K48-K63-linked poly-ubiquitination transition of [IQGAP1](#) at Lys-1230 by interacting with it, which in turn promoted [CDC42](#) activation. This mechanism was confirmed to mediate glioma migration and invasion. In conclusion, our study provides insights into the mechanisms through which TRIM56 promotes glioma motility, i.e., by regulating IQGAP1 ubiquitination to promote CDC42 activation, which might be clinically targeted for the treatment of glioma ¹⁾.

¹⁾

Zhang Q, Zheng J, Wu W, Lian H, Iranzad N, Wang E, Yang L, Wang X, Jiang X. TRIM56 acts through the IQGAP1-CDC42 signaling axis to promote glioma cell migration and invasion. Cell Death Dis. 2023 Mar 4;14(3):178. doi: 10.1038/s41419-023-05702-6. PMID: 36870986.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

<https://neurosurgerywiki.com/wiki/doku.php?id=trim56>

Last update: **2025/04/29 20:26**

