

# Handan

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[Breast cancer](#) (BC) is the leading cause of cancer-related mortality in women worldwide. The identification of effective markers for early [diagnosis](#) and the prognosis is important for reducing [mortality](#) and ensuring that therapy for BC is effective. Dynamin-related protein-1 ([DRP1](#)) is a regulator of mitochondrial fission. However, the prognostic value of DRP1 and its association with immune infiltration in BC remain unknown.

The TCGA, Oncomine, UALCAN and HPA databases were used to examine DRP1 expression in BC. Kaplan-Meier plotter and PrognoScan were used to evaluate the association of DRP1 with the prognosis of patients with BC. The mechanism was investigated with Gene Ontology (GO) and Kyoto Encyclopedia of Genes and Genomes (KEGG) analyses, and the relationship between DRP1 expression and immune infiltration in BC was investigated using the TIMER database and CIBERSORT algorithm.

DRP1 expression was significantly upregulated in BC compared to healthy breast tissues. In addition, elevated DRP1 expression was associated with various clinicopathological parameters. High DRP1 expression was significantly correlated with poor survival of BC patients. GO and KEGG analyses indicated that DRP1 was closely correlated with various signaling pathways and immune response. Functional analyses revealed that DRP1 was positively correlated with infiltration levels of B cells, CD8+ T cells, CD4+ T cells, macrophages, neutrophils, and dendritic cells. Moreover, DRP1 affected the prognosis of BC patients partially via immune infiltration.

The results suggest that DRP1 is a marker of poor prognosis in patients with BC and plays an important role in tumor-related immune infiltration <sup>1)</sup>.

<sup>1)</sup>

Liu B, Fan Y, Song Z, Han B, Meng Y, Cao P, Tan K. Identification of DRP1 as a prognostic factor correlated with immune infiltration in breast cancer. *Int Immunopharmacol*. 2020 Oct 10;89(Pt B):107078. doi: 10.1016/j.intimp.2020.107078. Epub ahead of print. PMID: 33049497.

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