

**Title:** Management of triple-negative breast cancer by natural compounds through different mechanistic pathways

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**Abstract:** Triple-negative breast cancer (TNBC) is the most severe form of breast cancer, characterized by the loss of estrogen, progesterone, and human epidermal growth factor receptors. It is caused by various genetic and epigenetic factors, resulting in poor prognosis. Epigenetic changes, such as DNA methylation and histone modification, are the leading mechanisms responsible for TNBC progression and metastasis. This review comprehensively covers the various subtypes of TNBC and their epigenetic causes. In addition, the genetic association of TNBC with all significant genes and signaling pathways linked to the progression of this form of cancer has been enlisted. Furthermore, the possible uses of natural compounds through different mechanistic pathways have also been discussed in detail for the successful management of TNBC.

**Keywords:** Triple-negative breast cancer (TNBC), Epigenetic regulation, DNA methylation, Histone modification, Genetic mutations, Signaling pathways

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