

Anti-Cancer Agents in Medicinal Chemistry

Title: Phytochemicals in the Synthetic Era: A Potential Oncosuppressor against Cancer Stem Cells

Volume: 23 **Issue:** 11

Author(s): Devangkumar Maru and Anmol Kumar*

Affiliation:

- Department of Biotechnology, Atmiya University, Rajkot, 360005, India

Keywords: [Cancer stem cell](#), [phytochemicals](#), [chemoresistance](#), [chemoprevention](#), [biomarker](#), [epigenetic changes](#).

Abstract: CSCs (Cancer stem cells) are a subpopulation of transformed cells residing within the tumour that possesses properties of stem cells, like self-renewal and differentiation. Different signalling pathways, epigenetic changes, and interaction with a tumour microenvironment are found to be involved in the maintenance of stemness of CSCs and contribute to chemoresistance. Hence, it is difficult to prevent and control progression completely without considering CSCs as a crucial target. Some phytochemicals target different pathways and gene expression and modulate CSC markers to suppress the stemness properties of cancer cells. Thus, phytochemicals potentially impact CSCs which may be applied in chemo-prevention. This comprehensive review discusses some studied phytochemicals that suppress stemness characters in various cancer types both in vitro and in vivo animal models. However, the chemo-prevention ability of phytochemicals needs to be validated in further subsequent stages of clinical trials.

Close

[Print this page](#)