

FULL TEXT LINKS



Review [Cancer Treat Res.](#) 2014;159:207-23. doi: 10.1007/978-3-642-38007-5_12.

Sulforaphane as a promising molecule for fighting cancer

Monia Lenzi ¹, Carmela Fimognari, Patrizia Hrelia

Affiliations

PMID: 24114482 DOI: [10.1007/978-3-642-38007-5_12](#)

Abstract

Cancer is a complex disease characterized by multiple genetic and molecular alterations involving transformation, deregulation of apoptosis, proliferation, invasion, angiogenesis, and metastasis. To grow, invade, and metastasize, tumors need host components and primary dysfunction in the tumor microenvironment, in addition to cell dysfunction, can be crucial for carcinogenesis. A great variety of phytochemicals have been shown to be potentially capable of inhibiting and modulating several relevant targets simultaneously and is therefore non-specific. Because of the enormous biological diversity of cancer, this pleiotropism might constitute an advantage. Phytochemicals, in particular diet-derived compounds, have therefore been proposed and applied in clinical trials as cancer chemopreventive/chemotherapeutic agents. Sulforaphane (SFN) is an isothiocyanate found in cruciferous vegetables. SFN has proved to be an effective chemoprotective agent in cell culture, in carcinogen-induced and genetic animal cancer models, as well as in xenograft models of cancer. It promoted potent cytostatic and cytotoxic effects orchestrated by the modulation of different molecular targets. Cell vulnerability to SFN-mediated apoptosis was subject to regulation by cell-cycle-dependent mechanisms but was independent of a mutated p53 status. Moreover, combination of SFN with cytotoxic therapy potentiated the cytotoxic effect mediated by chemotherapy in vitro, thus suggesting its potential therapeutic benefit in clinical settings. Overall, SFN appears to be an effective and safe chemopreventive molecule and a promising tool to fight cancer.

Related information

[PubChem Compound \(MeSH Keyword\)](#)

LinkOut – more resources

Full Text Sources

[Springer](#)

Other Literature Sources

[The Lens - Patent Citations](#)

[scite Smart Citations](#)

Research Materials

[NCI CPTC Antibody Characterization Program](#)

Miscellaneous

[NCI CPTAC Assay Portal](#)