Review J Oral Biol Craniofac Res. 2023 Mar-Apr;13(2):155-163. doi: 10.1016/j.jobcr.2022.12.010.
Epub 2022 Dec 28.

# Onco-immunity and therapeutic application of amygdalin: A review

Ahmed Mohammed Alwan [1], Dinesh Rokaya [2], Goma Kathayat [3], Jalil Tavakol Afshari [1]

Affiliations

PMID: 36618007 PMCID: PMC9816781 DOI: 10.1016/j.jobcr.2022.12.010

## Abstract

**Background:** Amygdalin is known as a chemical compound derived from various fruits. The glycosides existing in this plant have been historically utilized as an anticancer agent. This review presented an overview of amygdalin and its onco-immunity and other therapeutic medical applications.

**Method:** A literature search for studies relating to amygdalin and cancer treatment was carried out using PubMed and Google Scholar. Combinations of the following terms were used in the search strategies: "amygdalin," "rhodanese," "cyanide," "cyanogenic," "hypothiocyanite," "mandelonitrile," "glucosides," "cancer," "apoptosis," and "cytotoxicity," combined with a cancer term such as "seed," "almond," or "apricot," "cancer + cell line, antiproliferation or inhibition," "BAX From the March 3, 1981 until the April 15, 2021, all of the English-language papers were evaluated based on the inclusion criteria. Publications included reviews, chapters from books, and original research papers.

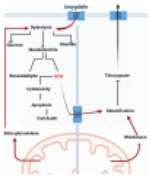
**Results:** The FDA prohibits Amygdalin from medical usage as an anticancer treatment due to a lack of proof of cure in cancer cases. When this natural-based compound is used with conditional chemotherapeutic medicines causes synergistic effects. Besides, amygdalin is used to manage asthma, improve the immune system, induce apoptosis in human renal fibroblasts, and inhibit hyperglycemia.

**Conclusion:** Various medical uses of amygdalin have been found such as managing asthma, improving the immune system, inducing apoptosis in human renal fibroblasts, and inhibiting hyperglycemia. More effective in vitro and review studies are required to elucidate the exact role of this herb in medical applications.

**Keywords:** Amygdalin; Beta-glucosidase; Cancer; Herbal remedy; Therapeutic application.



## Figures



**Graphical abstract**

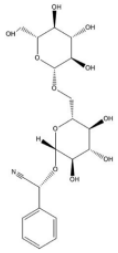


**Fig. 1** Amygdalin's chemical structure.

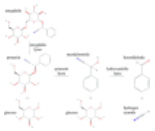


**Fig. 2** Metabolism of amygdalin.

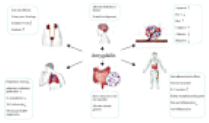


**Fig. 3** potential pharmaceutical consumption of

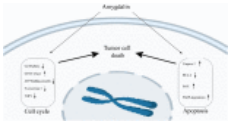


**Fig. 4** The amygdalin impact on cell...

## Related information

PMC images

## LinkOut - more resources

Full Text Sources
Elsevier Science
Europe PubMed Central
PubMed Central

Research Materials
NCI CPTC Antibody Characterization Program

Miscellaneous
NCI CPTAC Assay Portal