

FULL TEXT LINKS



Review [Pharmaceuticals \(Basel\)](#). 2023 Jun 22;16(7):915. doi: 10.3390/ph16070915.

Medicinal Characteristics of *Withania somnifera* L. in Colorectal Cancer Management

[John M Macharia](#)¹, [Zsolt Káposztás](#)², [Raposa L Bence](#)²

Affiliations

PMID: 37513827 PMID: [PMC10384768](#) DOI: [10.3390/ph16070915](#)

Abstract

Research into tumorigenic pathways can aid in the development of more efficient cancer therapies and provide insight into the physiological regulatory mechanisms employed by rapidly proliferating cancer cells. Due to the severe side effects of cancer chemotherapeutic medications, plant chemicals and their analogues are now explored more frequently for the treatment and prevention of colorectal cancer (CRC), opening the stage for new phytotherapeutic strategies that are considered effective and safe substitutes. Our study aimed to evaluate the medicinal properties of *Withania somnifera* L. and its safety applications in CRC management. Important databases were rigorously searched for relevant literature, and only 82 full-text publications matched the inclusion requirements from a massive collection of 10,002 titles and abstracts. *W. somnifera* L. contains a high concentration of active plant-based compounds. The pharmacological activity of the plant from our study has been demonstrated to exert antiproliferation, upregulation of apoptosis, decrease in oxidative stress, downregulation of cyclooxygenase-2 (COX-2), induction of targeted cytotoxic effects on cancerous cells, and exertion of both antiangiogenesis and antimigratory effects. We advise further research before recommending *W. somnifera* L. for clinical use to identify the optimal concentrations required to elicit beneficial effects in CRC management in humans, singly or in combination.

Keywords: *Withania somnifera* L.; antiangiogenesis; antimigratory effects; apoptosis; colorectal cancer; cytotoxicity; pharmacological activity.

[PubMed Disclaimer](#)

Figures



Figure 1 *Withania somnifera* L. plant and...



Figure 2 Adopted PRISMA flow diagram with...



Figure 3 Classification of the various metabolites...

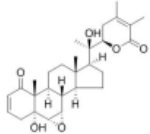


Figure 4 The chemical structure of withanolide...

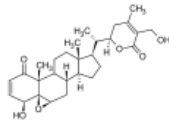


Figure 5 The chemical structure of withaferin...

Related information

[MedGen](#)

LinkOut – more resources

Full Text Sources

[Europe PubMed Central](#)

[MDPI](#)

[PubMed Central](#)

Research Materials

[NCI CPTC Antibody Characterization Program](#)