



A REVIEW ON PHARMACOLOGY ACTIVITIES OF TURNIP (*BRASSICA RAPA*)

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ABSTRACT

Plants are the primary source of drug discovery and providing medicines for ailments of humans. *Brassica rapa*, generally known as turnip which is one of the world's most seasoned developed vegetables. *Brassica rapa* are the individuals from *Brassica* class (Family: *Brassicaceae*). Turnip is likewise utilized as a conventional medication for the treatment of cerebral pains, rheumatism, gonorrhea, syphilis, and rabies. *Brassica rapa* shows some pharmacological activities such as Antimicrobial Effect, Antioxidant activity, Lung protective effect, Immunological effect, Anti-inflammatory activity, Analgesic activity, Hepato-protective effect, Anti-diabetic effect, Cytotoxic effect.

KEYWORDS: Common Name, Pharmacological Activities, Synonyms, Classification.

INTRODUCTION

Brassica rapa L. (turnip) having a place with the types *Brassica* (*Cruciferae*) is a biennial, out-intersection, mesopolyploid herbaceous plant. Its local reach is Central and E. Medit. to Iran and Arabian Peninsula, NE. Tropical Africa. It is utilized to treat disease, blood disorders and genitourinary issues, as a vegetable and for food. *Brassica* exhibit some medicinal activities like Antimicrobial Effect, Antioxidant activity, Lung protective effect, Immunological effect, Anti-inflammatory activity, Analgesic activity, Hepato-protective effect, Anti-diabetic effect, cytotoxic effect. (Snafi et al.2015;Hossseini et al.2013)

Brassica rapa* L. var. *rapa

Scientific Names: *Brassica rapa* L. ssp. *rapa*

Synonyms

Brassica campestris L., *Brassica septiceps* (L.H. Bailey) L.H. Bailey, *Brassica chinensis* L., *Brassica narinosa* L.H. Bailey, *Brassica parachinensis* L.H. Bailey, *Brassica campestris* ssp. *napus* Duthie & Fuller, *Brassica campestris* ssp. *rapifera* (Metzg.) Sinskaya, *Brassica rapa* ssp. (Hanson 2008)

Taxonomic classification

Kingdom: plantae; Subkingdom: Viridiplantae; Infrakingdom: Streptophyta; Division: Tracheophyta; Subdivision: Spermatophytina; Infradivision: Angiospermae; Class: Magnoliopsida; Superorder: Rosanae; Order: Brassicales; Family: Brassicaceae (alt. *Cruciferae*), Tribe: Brassiceae, Genus: *Brassica*, Species: *Brassica rapa*. (Hanson 2008)

Common Names: common mustard, wild mustard, wild turnip, forage turnip, wild rutabaga, birds rape mustard, bird's rape, rape mustard; *Horticultural cultivars*: turnip, summer turnip, seven-top turnip, rapini, broccoli raab, Italian kale; swede or white turnip (Ireland, Scotland, northern England). (Hanson 2008)

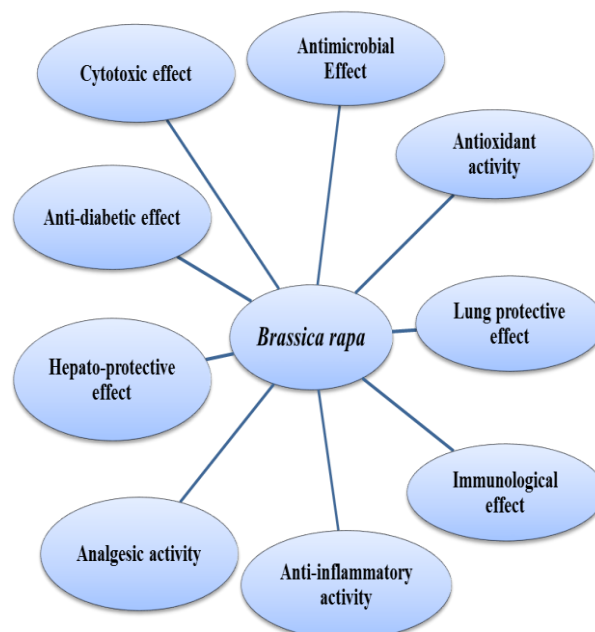


Figure 1: Pharmacological activities of *Brassica rapa*.

Pharmacological activities

Pharmacological activities are discussed in details following are

Anti-inflammatory effect

Inflammation is essential for the complex organic reaction of body tissues to unsafe boosts, including microorganisms, harmed cells or aggravations. Arvelexin likewise inhibited LPS-actuated NO and prostaglandin E2 creation through the concealment of iNOS and COX-2 at the degree of quality record. Also arvelexin restrained NF- κ B subordinate fiery reactions by adjusting a progression of intracellular occasions of I κ B kinase (IKK)- inhibitor κ B α (I κ B α)- NF- κ B signaling. (Shin et al.2011)

Antimicrobial effect

Turnip was likewise viewed as another source of antimicrobial representatives. The weakness of six microorganisms covering gram positive microbes, gram negative microscopic organisms and two parasites to the bacteria. All extracts uncovered positive inhibitory impacts against *Candida albicans*, *Pseudomonas aeruginosa* and *Bacillus subtilis*. Turnip roots of *Brassica rapa* L were determined as different dosage showing treats the fungal infection against *Candida albicans* and it also exerted an inhibitory action on mycelial growth including *Fusarium oxysporum* and *Mycosphaerella arachidicola* with an IC50 of 5.1 micro M and 4.4 micro M, individually. (Lin et al.2009)

Lung protective effect

The impact of the aqueous extract of *Brassica rapa chinensis* was concentrated against bleomycin instigated aspiratory fibrosis. Extract of *Brassica rapa chinensis* indicated huge defensive impact against BLM prompted aspiratory fibrosis in rodents by normalizing the degrees of glycoproteins (hexose, hexosamine and sialic corrosive) and improving the action of Catalase (CAT) and Superoxide dismutase (SOD). The concentrate additionally improved pneumonic glutathione (GSH) content and exhausted the lipid peroxidation levels in a portion subordinate way. (Dharni et al.2014)

Antioxidant effect

The cell reinforcement capability of the *Brassica rapa* was performed by methods for the DPPH extremist searching test. The aqueous concentrates of the two roots and ethereal parts were found to gang the most grounded DPPH revolutionary searching cancer prevention agent movement (5.39 and 8.07 individually) that can be considered marginally less strong than nutrient C. (Dharni et al.2014)

Anti-diabetic effect

The antidiabetic viability of turnip (*Brassica rapa*) roots ethanol extricate (TE) was researched into type 2 diabetic mice through improving glucose and lipid digestion and lessening the degrees of serum biomarkers (AST, ALT, and LDH) or brought down the hepatic

unsaturated fat synthase action, hepatic lipid beads gathering, and fat tissue weight and size. (Jung et al.2008)

Immunological effect

The impacts of chloroform, ethyl acetic acid derivation and methanolic concentrates of *Brassica rapa* were explored on cell-intervened safe reaction in mice. Chloroform, ethyl acetic acid derivation and methanolic concentrates of *Brassica rapa* organs were set up by maceration strategy. The outcomes demonstrated that SRBC initiated an expansion in paw expanding with most extreme reaction at 6-8 and 2-4 h for inborn and obtained insusceptibility, separately. Betamethasone hindered and levamisole expanded paw thickness in the two models. In both intrinsic and acquired. (Jafarian et al.2013)

Cytotoxic effect

The cytotoxic impact of extract of *Brassica rapa* establishes was concentrated in three types of malignancy cell lines; Hep-2, AMN-3 and Hela in vitro. The outcomes demonstrated that the cytotoxic impact of the concentrate subject to sort of cells, measure of portion and presentation time. (Barakat et al.2010)

Hepato-protective effect

Brassica rapa juice ensured the rodents against CCl4-incited hepatotoxicity. The treatment altogether diminished the serum GOT, GPT, antacid phosphatase (ALP) and bilirubin level at a portion of 16 ml/kg bw. Moreover, the juice was likewise recharged the brought down nonprotein sulfhydryl (NP-SH) focus in the liver tissue after CCl4 treatment. The treatment with extract of *Brassica rapa chinensis* fundamentally battles the oxidative pressure forced by t-BHP in the hepatic tissues as confirmed by checked improvement in the cancer prevention agent status and smothering lipid peroxide levels. (Taylor. 1990)

Analgesic activity

The alcoholic extracts of turnip roots appeared critical agony easing in both intense and ongoing stages when contrasting and the benchmark group on formalin prompted male mice model. This examination gives important pieces of information for looking through pain relieving competitors from turnip. (Hosseini et al.2013)

CONCLUSION

Numerous new kinds of helpful can be created from the normal items that are ordinarily getting from the therapeutic plants. This review will feature the pharmacological impacts of *Brassica rapa*.

DISCLOSURE STATEMENT

There are no conflicts of interest.

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