

THERAPEUTIC POTENTIAL OF *CUCUMIS SATIVUS*

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Introduction. Cucumber (*Cucumis sativus* L.) is a member of the *Cucurbitaceae* family like melon, squash and pumpkins. It is a popular vegetable crop used in Indian traditional medicine since ancient times. This vegetable is very high in water content and very low in calories. It has potential antidiabetic, lipid lowering and antioxidant activity. Cucumber has a cleansing action within the body by removing accumulated pockets of old waste materials and chemical toxins. Fresh fruit juice is used for nourishing the skin. It gives a soothing effect against skin irritations and reduces swelling. Cucumber also has the power to relax and alleviate the sunburn's pain. The fruit is refrigerant, haemostatic, tonic and useful in hyperdipsia, thermoplegia etc. The seeds also have a cooling effect on the body and they are used to prevent constipation. Several bioactive compounds have been isolated from cucumber including cucurbitacins, cucumegastigmanes I and II, cucumerin A and B, vitexin, orientin, isoscoparin 2''-O-(6'''-(E)-p-coumaroyl) glucoside, apigenin 7-O-(6''-O-p-coumaroylglucoside) etc. Despite huge exploration of cucumber in agricultural field, comparatively very few studies have been published about and its therapeutic potential. In this work we have explored the current pharmacological knowledge available with this well known plant and several promising aspects for research on cucumber.

Cucumis C. is a popular plant which has easy access and very cheap. It is helpful in treating various ailments like diabetes, skin infection toothache, diarrhoea, flu, hepatitis inflammation etc [1, 2, 3]. Beside this it also acts as cosmetic as a toner and gives a shiny glow to skin it contains number of phytochemicals which makes it a wonder drug [4, 5].

The aim of the study. Review the literature on the experimental study of the pharmacological properties of cucumber.

Materials and methods. The foreign scientific literature on the experimental study of the pharmacological effects of cucumber was used.

Results. According to a literature review containing information on the experimental study of the pharmacological activity of cucumber, the following activities of cucumber have been confirmed.

Antioxidant activity. *C. sativus* fruit water extract showed maximum antioxidant and analgesic effect. The analgesic effect was compared to Diclofenac sodium (50 mg/kg) and free radical scavenging as compared to ascorbic acid [8]. Cucumber fruit extracts showed maximum antioxidant effect at 500 µg/ml each [9].

Anticancer activity. Cancer is a very fatal disease in this the cells start mutating and they grow uncontrollably [10]. Studies were conducted on ethanolic extract of

cucumber leaves and it showed the presence of various phytochemicals like proteins, glycosides, saponin, terpenoids etc which help in treating the cancer [11].

Anti-inflammatory activity. For testing anti-inflammatory activity the rats were grouped into four groups (1-4) of four rats each, were acclimatized for seven days, fasted and deprived of water for 18 h. Anti-inflammatory test substance was orally administered 1 h before inducing inflammation and it was found that *Cucumis sativus* had inflammatory activity and unlike synthetic drugs had no close dependent side effects [12].

Analgesic activity. Analgesic testing was done on methanol extract of cucumber on mice and studies revealed that methanol extract of cucumber was able to inhibit pain by 54.72% and 55.66% as compared to the administration of Na-diclofenac (76.41%) [13].

Antihepatotoxic activity. Hepatotoxic compounds can damage the liver as the liver is responsible for carrying out the metabolic activity of the body. so hepatotoxic activity testing was done on rats in which researchers injected the juice of cucumber and reported the protective effect on the body with the activity value of the enzyme alanine aminotransferase (ALT) 125 IU/L, aspartate aminotransferase (AST) 53 IU/L and blood urea nitrogen (BUN) 18.8 mg/dl [14].

Antidiabetic activity. Diabetes is a disease caused by lack of insulin in the body, Studies were done [15] on hydroalcoholic extract of cucumber seeds (22.5-33.8%) and butanol extract of cucumber seeds (26.6-45.0%) and it was found that it controlled weight loss in diabetic rats and reduced the blood glucose levels after nine days of treatment. Glibenclamide can reduce blood glucose levels in normal rats (27.8-31.0%) and diabetic rats (36.0-50.0%) after nine treatment days. It suggests that the hydroalcoholic and butanol extracts of cucumber seeds effectively reduce blood glucose levels in diabetic rats [16].

Anti-microbial activity. The amine fraction of an extract of 10-day old cucumber seedling showed inhibitory effect on *Staphylococcus aureus* and *Pseudomonas aeruginosa*. This activity was due to polyamine spermidine in the extract [17].

Wound Healing Activity. Studies show that aqueous extracts of *Cucumis sativus* have good effect on wound healing. Herbal paste preparation showed significant ($p < 0.05$) enhancement on maturation, wound contraction and epithelialisation [17].

Other uses. Cucumber is not a medicine but it is also used as a traditional toner since time immemorial. It reduces the puffiness, dark circles of eyes inflammation, irritation if slices of cucumber are placed on the effected part or paste applied [18, 19, 20].

Conclusions. The above review gives a detailed description and it tells about the studies conducted by various researchers on cucumber. They reported the presence of various phytochemicals like steroids, saponin, tannin, flavonoids, alkaloids, terpenoids, phenols, glycosides etc. It is a good source of secondary metabolites which can reduce various ailments so it can be of use if the authentication is properly done.

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**SUBSTANTIATION OF CREATION OF A NEW
ANTI-INFLAMMATORY PHYTOMEDICINE WITH
A TANACETUM (*Tanacetum parthenium* L.) THICK EXTRACT
ACCORDING TO THE RESULTS OF EFFICIENCY
ON THE MODEL OF ARTHRITIS IN RATS**

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Introduction. Improving the pharmacotherapy of rheumatoid arthritis (RA) remains an urgent task of modern pharmacology. One of the ways to solve this problem is to find and develop agents with anti-inflammatory and chondroprotective properties based on plant materials

The aim of the study. To evaluate the effectiveness of a thick extract of the tanacetum (*Tanacetum parthenium* L.) herb in chronic inflammation (adjuvant arthritis) in rats according to histological examination.

Research methods. Histological examination of the joints of rats with simulated Freund's adjuvant (0.1 ml once subcutaneously at the base of the tail) arthritis. The joints separated from the skin and muscles were fixed in 10% neutral formalin solution, after washing in running water decalcified in 5% nitric acid solution for 14-16 days. After ascending, the tissue concentration was poured into celloidin-paraffin according to standard methods. Frontal sections 6-8 µm thick were made from the blocks, at least