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PHYTOCHEMISTRY AND PHARMACOLOGICAL ACTIVITIES OF GINGER

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ABSTRACT: Ginger (*zingiber officinale*) is a flowering plant whose rhizomes ,ginger root or ginger , is widely used as a spice and a folk medicine. recently , the number of the studies on natural products have considerably increase owing to their expectetional biological activities and health benefits .the first written record of ginger comes from the analects of Confucius, written in china during the warring statesperiod. Clinical application of ginger with an expectation of clinical benefits are receiving significant attention .ginger has a great pharmacological and biological potential in the prevention and treatment of various diseases , namely colds , nausea , arthritis, migraines ,and hypertension. The reporting quality of the included studies was assessed based on the Cochrane collaborations tool for assessing the risk of bias in randomized trails and integrated together with studies that investigated the same subject. Though it is grown in many areas across the globe, ginger is “among the earliest recorded spices to be cultivated and exported from south west India”.

KEYWORDS: *zingiber officinale* ,rhizomes ,ginger, anti-inflammatory .

INTRODUCTION: Ginger (*zingiber officinale roscoe*) , a well known herbaceous plant, has been widely used as a flavouring agent and herbal medicine for centuries. Ginger the root of the plant *zingiber officinale roscoe* that belong to the family *zingiberaceae*, is globally one of the most commonly used spice and medicinal agent .more than aprroximately 100 compounds have reported being isolated from ginger. among them ,Gingerols are considered as the primary

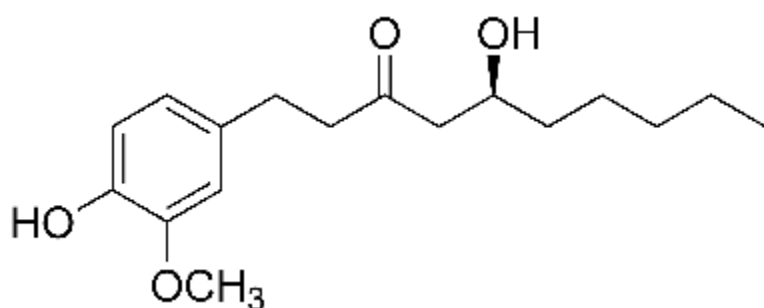
components , reported to possess several bio activities . Ginger is loaded with antioxidants , compounds that prevent stress and damage to your bodies DNA. Thus potential pharmacological and physiological activities have lead to a significant increase in the number of investigations on the health benefits of the ginger .moreover , several systematic reviews and meta analysis (SR-MA) ,which aimed to assess the clinical ginger effectiveness have been completed . ginger is aromatic , pungent rhizomes, is used as a spice , flavoring , food and medicines . its generic name is zingiber is derived from the greek zingiberis, which comes from the Sanskrit name of the spice ,singabera.



Synonyms-

Ginger root, Black Ginger, Zingiberic rhizome, Zingiber, Zingiberis

Chemical structure of e-Gingerol :



Biological source-

Ginger consist of the dried rhizomes of *Zingiber officinale* Roscoe.

Botanical Classification-

Kingdom: Plantae

Subkingdom: Tracheobionta

Superdivision: Spermatophyta

Division: Magnoliophyta

Class: Liliopsida-Monocotyledons

Subclass: Zingiberidae

Order: Zingiberales

Family: Zingiberaceae

Genus: Zingiber P. Mill

Species: Zingiberofficinale Roscoe

PHARMACOLOGICAL ACTIVITIES OF GINGER:

The main pharmacological action of ginger and compounds isolated there from include immuno-modulatory, anti-tumoregenic , anti-inflammatory, anti-apoptotic ,anti-hyper glycemc, anti-lipidmic and anti-emetic actions .

1. Lowering cancer risk
2. Reduce cold and flu
3. Good for heart
4. Treats inflammations
5. Ginger improves brain functionality

• Lowering cancer risk:

Ginger does not provide protein or other nutrients, but it is an excellent source of antioxidants. Studies have shown that, for this reason, ginger can reduce various types of oxidative stress. Oxidative stress happens when too many free radicals build up in the body. Free radicals are toxic substances produced by metabolism and other factors.

• Reduces Cold and Flu:

Winter is the best climate to sip a hot cup of ginger tea and this will automatically stabilize your body condition and keep you warm. It enables you to sweat once you consume it and this is said to be good for your body.

• Good for Heart:

Ginger is good for your heart such that it reduces cholesterol and lowers your risk of having any sort of blood clots.

Most importantly, it regulates blood sugar levels. a little bit of ginger added to your everyday diet can work the trick of keeping your heart healthy

• Treat inflammation:

Inflammation is said to be the process wherein white blood cells protects us from infection and viruses. But sometimes this may go wrong and cause severe joint pain and so forth. In this process, your bodies immune system.

• Ginger Improves Brain Functionality:

The anti-inflammatory properties available in ginger can also keep you alert and helps in good brainfunctionality. It basically increases your presence of mind. Ginger root can improve cognitive function as per a study by the.

• Treats Muscle Pain:

Ginger is said to cure muscle pain and all you need to do is to consume 2 grams of ginger may it be in the form of powder or paste, you will witness the difference within 11 days. Also, it is advised that you conduct some simple elbow exercises in order to experience speedy relief.

• Prevents Nausea:

If you have vomiting sensation then you need to ginger as a natural home remedy to prevent

it. All you need to do is to chew some raw ginger or simply sip some hot cup of ginger tea and this will cure you of nausea and reduce

BENEFITS :

- 1. Improve blood circulation .**
- 2. Solution for motion sickness.**
- 3. Improves absorption .**
- 4. Prevents cold and flu .**
- 5. Relieve stomach discomfort .**
- 6. Prevents colon cancer .**
- 7. Reduce pain and inflammation .**
- 8. Fights common respiratory problems .**
- 9. Treatment of ovarian cancer.**
- 10. Strengthens immunity .**

1. Improve blood circulation.

Ginger contains ,chromium,magnesium, and zinc . these elements can help to improve blood flow , and also helps prevent chills, fever , and excessive sweets.

2. Solution for motion sickness.

ginger is an effective solution for nausea associated with motion sickness. The exact reason is unknown , but in a study of naval cadets, those given powder suffered less.

3. Improves absorption .

One of the health benefits of ginger is that it improves the absorption and stimulation of essential nutrients in the body .it does this by stimulating gastric and pancreatic enzyme secretion.

4. Prevents cold and flu .

Ginger is a natural treatment for colds and flu . to treat cold and flu symptoms, and freshly shredded or chopped ginger root to a cup of hot hot and drink two to three times a day .

5. Relieve stomach discomfort .

Ginger is a ideal in assisting digestion , there by improving food absorption and avoiding a possible stomach ache .ginger appears to reduce inflammation in a similar way to aspirin and ibuprofen.

6. Prevents colon cancer .

A study at the university of Minnesota found that ginger may slow the growth of colorectal cancer cells.

7. Reduce pain and inflammation .

Ginger contains some of the most potent anti inflammatory fighting substances known and is a natural powerful painkiller.

8.Fights common respiratory problems .

If you are suffering from common respiratory disease such as a cough , ginger aids in expanding your lungs and loosening up phlegm because it is a natural expectorant that breaks down and removes mucus .

9.Treatment of ovarian cancer.

Ginger powder induces cell death in ovarian cancer cells .

10.Strengthens immunity .

Ginger help to improve the immune system . consuming a little bit of ginger a day can help foil the potential risk of a stroke by inhibiting fatty deposits in the arteries.

DISCUSSION:



CONCLUSION:

Ginger is an ancient herb used widely in history for its many natural medicinal properties and particularly as an antiemetic .ginger is a natural spice that is used in diverse region to add a pungent flavor to food. The clinical effect of ginger have been introduced as six subsections:nausea and vomiting , gastro intestinal funtions pain , inflammation , metabolic syndromes .therefore, systematically designed research with detailed descriptions of methodology and sufficient pool of participants is necessary for future clinical trial to address the functional characteristics of ginger.

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