Ginseng has been used for more than 2,000 years in Chinese medicine claiming that it has various effects which go beyond normal herbs or other beverages such as sedative, curing erectile dysfunction, infections even curing cancer. Regardless of the effect claimed and despite the popularity worldwide over the herb, there has not been a definitive research over the herb or drinks.

Introduction

Ginseng is a smooth perennial herb, with a large, fleshy, very slow-growing root, 2 to 3 inches in length (occasionally twice this size) and from 1/2 to 1 inch in thickness. Its main portion is spindle-shaped and heavily annulated (ringed growth), with a roundish summit, often with a slight terminal, projecting point. Ginseng has been used in Chinese medicine for more than 2,000 years[1]. It’s believed to have a miraculous effect even life-expanding results which began to make its name in the Western world after that[2]. The botanical name of ginseng is Panax which derives from the Greek word ‘Panacea’ in which is translated to “cure for all”[3]. The English word of ginseng derives from the Chinese word rénshēn or “human plant”[4] due to the reason that it resembles the legs of the human. There are many types of ginseng distributed in the market and many claims over the health-related effects as mentioned, However, there are three main types of ginseng in which this article will mention and does it actually benefit health and how do those types of ginseng being marketed. These three types are American ginseng, Asian ginseng and Siberian ginseng. The American ginseng is referred to as ‘panax quinquefolius’[5, 6] and the Asian ginseng as ‘red ginseng’. Both types of ginseng contain active component called ginsenosides[7]. However, the Chinese medicine categorized these ginsengs differently due to its content as Chinese ginseng is categorized as ‘hot herb’ while the American ginseng is categorized as ‘cool herb’[8,9]. While the Siberian ginseng is used as adaptogen which is believed to have an effect of strengthen and increase body to daily stress[10].

Regardless of its categorization, both American and Chinese ginseng is believed to have a positive effect on health and has gained its popularity over the years. Ginseng products are widely consumed, and it is produced and marketed in many forms such as capsules, powders and liquid extract.

Types of Ginseng

There are many types of ginseng being marketed and consumed in this world. The most prominent one are (i) American ginseng (ii) Chinese ginseng and (iii) Siberian ginseng. These types of ginseng are marketed, processed and used differently due to its difference in components.
American Ginseng
American ginseng or known as "panax quinquefolius"[11, 12] is one of the most popular ginsengs ever used in this world. It is believed by many to have a health-related effects which could cure erectile dysfunction, enhance immune system or even prevent and cure cancer. However, it is unclear whether or not such claim is true.

Health Benefit
The American ginseng has been reported to be used to solve the problem of low-iron in blood or anemia[13]. It is also used to cure inflammation, losing of appetite or even solve the problem of insulin resistance. The reported effect collected from a research shows that by taking 3 grams of American ginseng by mouth two hours before a meal can lower blood sugar after a mean in patient with type 2 diabetes[14]. However, larger doses do not seem to yield a better effect. However, regardless of the positive effect on diabetes, the American Institute of Health claims that ginseng seems to lack an evidence supporting its effect on cancer prevention or even act as a cancer cure as it lacks hard evidence that ginseng is effective in prevention and treatment of cancer[15]. One laboratory study suggests that American ginseng extract inhibited the cell growth in colorectal cancer cell lines. It is best to be used with 5-fluororacil (5-FU) which is believed that it could be a potential chemo-adjuvant which could reduce the required dosage[16].

Asian Ginseng
The Asian ginseng includes Chinese and Korean ginseng and is one of the ginsengs which claims to have health benefits and marketed worldwide[17]. The beverage derives from such content includes wide range of products including extract, dried or even energy drinks. The product which is believed to contain ginsenosides which is a bioactive metabolites that have various pharmacological activities are believed various positive health related effect[18].

Health Benefit
Health Benefit
The ginsenosides are categorized into two groups namely, protopanaxadiol (PPD) and protopanaxatriol (PPT) ginsenosides groups and are believed to have therapeutics action. It is believed to have an effect of enhance physical and mental performance under stress and promote healthy blood sugar regulation[19]. However, the research shows that the ginsenosides has a low bioavailability and is poorly absorbed from gastrointestinal tract (GIT). The red ginseng extract in healthy volunteer is not shown in the plasma concentration of healthy volunteer regardless of the fact that it is rapidly absorbed by mouse through oral administration.

Siberian Ginseng
Siberian Eleuthero or commonly known as Siberian Ginseng with botanically referred to as Eleutherococcus Senticosus. It is classified in Araliaceae type, the same class as Korean ginseng. However, the Siberian Ginseng is different since one of the component found is Eleutherosides.

Health Benefit
The Siberian ginseng is claimed to have many health benefits such as improve learning and memory, enhance stress durability, anti-inflammation and reducing the symptom of Bronchitis[20].

Distribution
Ginseng is distributed in 35 countries worldwide and the distribution volume and amount differs. It is unlikely to find a statistic for all the production and distribution. However, the statistic shows that Canada is the most prominent ginseng distributor with the highest export volume with 664,180,000 USD in export volume exceeding China more than 100,000,000 USD in export volume[21]. The market trends tend to grow exponentially. The data collected in 2009 shows that the market trend in Korea for ginseng consumption is at 671 million USD in 2009 growing from 576 million USD in the previous year[21].
Bioactivity and Active Compound

The most active compound in ginseng is ginsenosides which is the exclusive compound found in ginseng. As a class, ginsenoside exhibit a large variety of subtle and difficult to characterize in isolated study. Most studies done to ginsenosides are done in cell-culture or animal model as we have mentioned before. Effects are reported in cardiovascular system, central nervous system and immune system. Many studies suggest that ginsenosides have antioxidant property and has been observed to increase antioxidant enzymes and act as free radical scavenger. Ginsenosides Rg3 and Rh2 is observed in cell model study to have an inhibitory effect on cancer cell growth and having neuroprotective properties which could be useful in treating Alzheimer’s and Parkinson’s diseases. Some papers showed, the Panax ginseng is multi-function.

On body
- Improve vitality and longevity
- Improve stress and enhance mental capacity
- Increase immune cell
- Affecting on Hypothalamic and adrenal
- Decrease serum prolactin then increase sexual likning

Some researchers in Korea have done with a research about erectile dysfunction, the result shows males who received ginseng, the Korean red ginseng can be as effective alternative for treating male erectile dysfunction, 60% of the patients have improved erection after use.

Conclusion

Ginseng has been one of the important and continuous use in alternative medicine for more than 2000 years in Chinese medicine. The popularity it shows in the modern times tend to grow exponentially. Three most prominent of ginseng distributed includes American ginseng, Asian ginseng and Siberian ginseng which, despite having the same compound, provide different effect in studies. The Siberian ginseng is with Eleutherosides which seems to have an effect on improving memory and learning ability which is not seen in other type of ginseng.

Regardless of the claims made over the usability of ginseng and its health benefit, the study is not conclusive concerning the health benefit of ginseng particularly because of the model of study which usually is done in cell-culture or animal model. The effect of ginsenoside in the aspect of health yet remains unclear.

Further Study

As have mentioned before, the effect of ginseng on health remains inconclusive since different studies yield different outcome due to the model of such study. Further study may include study where the effect of ginseng in human body concerning the prevention or treatment of cancer can be studied in order to expand the knowledge and conclude the effect of ginsenoside.

References
4. Yamin Ranchod, PhD, MS W. what are the health benefits of ginseng? Medical News Today. Ginseng
8. Jai Narayan Mishra, an overview of Ginesng, Department of Pharmacy, India, 2017, 2395-3411
27. Hong B, Yi YH, Hong, A double-blind crossover study evaluating the efficacy of korean red ginseng in patients with erectile dysfunction, 2002 Nov;168(5):2070-3