



# Relationship between Traditional Chinese Medicine (TCM) and it's substitution

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**Received:** 30-Nov-2022, Manuscript no: GJBBR-22-83807; **Editor assigned:** 02-Dec-2022, PreQC no: GJBBR-22-83807(PQ); **Reviewed:** 16-Dec-2022, QC no: GJBBR-22-83807; **Revised:** 23-Dec-2022, Manuscript no: GJBBR-22-83807(R); **Published:** 30-Dec-2022, DOI: 10.15651/2504-001X.22.10.021.

## ABOUT THE STUDY

Water molecules can be bound by it, and once bound, they can pass through the film. These characteristics support the healing process by allowing the wound to retain moisture. Tannic acid is added to give hyaluronic acid-based films new features like antioxidant activity. Tannic acid concentration in the substance increases along with the Respiratory Sinus Arrhythmia (RSA) value. Antioxidant-active materials are beneficial in biomedical applications because they prevent the free oxygen radicals that are detrimental to humans. Antioxidant-rich materials help heal wounds more effectively and shield body flaws from oxidative damage. For instance, water buffalo horn has replaced rhino horn in the Chinese Pharmacopoeia since 1993, when the State Department of China issued a notice outlawing the trading of rhino horn.

*Salvia miltiorrhizae* Radix et Rhizoma, also known as Danshen in Chinese, is a significant TCM herb that has been used for more than two thousand years to reduce pain and improve blood circulation, particularly in the treatment of cardiovascular problems. Danshen plays a significant role in health food, pharmaceuticals, and cosmetics and is increasingly in demand because of its anti-thrombotic characteristics. However, the root and rhizome of a single species of *Salvia miltiorrhiza* Bge is the recognised raw material for Danshen in China. *S. miltiorrhiza* cultivation has some issues, such as ongoing cropping challenges and a decline in germplasm following domestication. The demands of people cannot be entirely satisfied by the *S. miltiorrhiza* resource supply.

Due to their similar pharmacological properties, more than 20 congeneric species—referred to locally as SMS

—are employed as alternatives for Danshen in this situation. For instance, in some historical regions of the Chinese provinces of Zhejiang, Jiangxi, and Anhui, Nandanshen—the root of *S. bowleyana* Dunn—was utilised as Danshen. There are also other additional *Salvia* species. Their application section is the entire plant as opposed to the root and rhizome, and because their application or efficacy differs from Danshen's, they are not acceptable replacements.

According to Foster's pragmatic view, substitution can be acceptable in contrast to adulterations. Substitution entails providing ingredients in place of other, more expensive ones or replacing those that might not be readily available or only be available at a higher cost. Therefore, even though Chinese Pharmacopoeia has legally established sources for each medicinal substance, in the case of some traditional remedies originating from endangered species or with high market usage, substitution may be carried out by locals. For instance, *Hedysari Radix* (Hongqi), the root of *Hedysarum polybotrys*, is widely used in place of *Astragali Radix* (Huangqi), the dried root of *Astragalus membranaceus* (Fisch.) Bge. or *A. membranaceus* var. *Mongholicus* (Bge.), in Gansu region of China.

Pharmaphylogeny is a cutting-edge field that investigates the phylogenetic relationships of medicinal plants as well as the inherent relationships among chemical composition, molecular phylogeny, and therapeutic efficacy. The notion of pharmaphylogeny asserts that species with genetic connections should be given preference when considering candidates for replacements and highlights the significance of genetic ties in the creation of surrogate resources. The successful exploitation of novel pharmaceutical resources has often been guided by this approach.