

# Q-Markers or Chemical Markers: A New Insight towards Quality Control of Herbal Medicines



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## Abstract

Since long herbal medicine is a part of human race and nowadays used extensively as supplements, due to the awareness among the increasing population. A lot of traditional medicines are in daily uses and are produced commercially. Global Industry Analyst has predicted the rise up to \$107 billion in herbal market and remedies market by the year 2017. Due to the debatable use of analytical chemical markers in quality control of herbal products and raw materials, a new concept of Q-markers (Quality markers) have been introduced by Yang et al 2017. Q-markers have properties of analytic markers along with the functional properties. Q-markers provide new insights towards the quality control of herbal medicines.

## Introduction

Herbal medicines, refers to the medicinal products of plant and plant part's that have therapeutic, curative, remedial and healing properties and thus promoting the health [1]. The herbal medicine is used as food supplements in major part of the world for its negligible side effects. According to Global Industry Analysts, the global herbal market and remedies market will reach up to \$107 billion by the year 2017 increase in population and consumer awareness about general health and well being are the main reasons [2]. The majority of these market products depend upon the commercialization of traditional medicines of various regions. These traditional medicines are providing tools and new insights towards the new herbal medicines. Recently most of the countries have published or are publishing their respective pharmacopoeia which contains the list of medicinal plants, their uses and mode of usage. Decoction, raw drugs, extracts and formula preparations are some of the preparations of plants or plant parts before administration. Over a period of time we are assessing quality control of such herbal product based on few chemical markers present in high concentration irrespective of their therapeutic effects.

## Chemical Markers

The European Medicines Agency (EMA) defined markers, for quality control purpose, as significant chemical constituents or groups of constituents of herbal origin and divided the chemical markers into two categories. First, Analytical Markers:

Markers solely for analytical purpose and Second, Active Markers: Markers with therapeutic activity [3,4].

## Q-markers (Quality Markers)

The assessment of quality control based on active markers is must. Recently a new concept of Q-markers was introduced for the quality control of Traditional Chinese Medicines [5]. Yang et al. (2017) defined basic properties of Q-markers as:

- Q-markers are intrinsic chemical component/components in herbal medicine raw material and products.
- Q-markers have functional properties associated with definite chemical structures.
- Q-markers can be qualitatively characterized and quantitatively determined.
- For formulations, in addition to the major chemical constituent from the principal raw material other secondary constituents of secondary raw materials should also be considered for the development of Q-markers.

Several research articles have been recently published based on the Q-markers which distinguishes *Panax ginseng* from *P. quinquefolius* and *P. notoginseng* [6]; establishing Q-markers for *Lonicera japonica* flos which are often mistaken with the *L. flos* [7].

## Conclusion

The use of analytical chemical markers are always debatable and the new concept of Q-markers are more refined and extended approach of active markers proposed by European Medicines Agency and must be considered for the sampling and quality control of herbal medicines and raw materials.

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