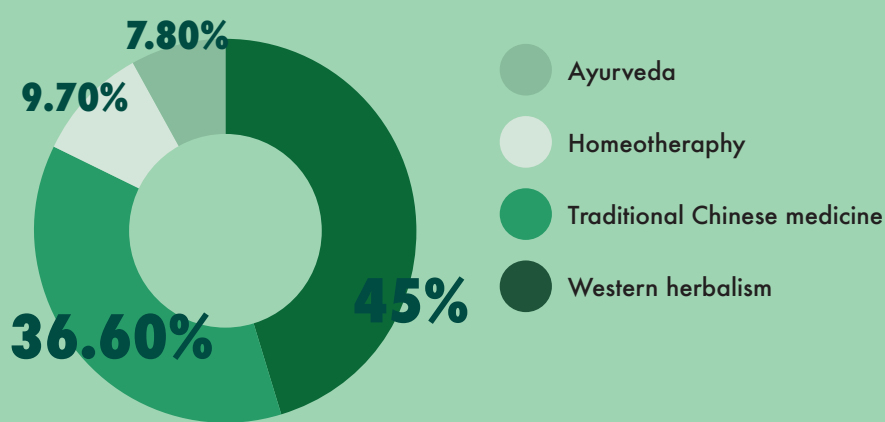


DNA Barcoding, Herbal Medicine & Dietary Supplements

Supplements and herbal medicines are not viewed as medications by the U.S. Food and Drug Administration (FDA). They are considered foods and not drugs. Supplements, therefore, do not undergo the same testing and regulations that other drugs do in the U.S.

The Industry

Estimated
80%
of the world's population living in the developing world rely on herbal medicinal products as a primary source of healthcare



Western herbalism and Traditional Chinese medicine are biggest distributors of the global herbal medicine market in 2017

42%
dietary supplements recalled in the past 8 years

52%
average use of dietary supplements across all age groups

85,000
dietary supplement products currently available in the U.S. marketplace



What is DNA Barcoding?

Deoxyribonucleic acid, or DNA, is a molecule that contains the instructions an organism needs to develop, live and reproduce.

DNA Barcoding is the method of species identification, using an extract of DNA from a specific gene or genes.



Potentials

DNA barcoding is an efficient tool for the identification of herbs and for the determination of various adulterants

However if used with other methods it can help in quality control and in discovering adulterations. Therefore, the addition of DNA barcoding to the other existing analytical methods for authentication of botanical ingredients in herbal medicines and dietary supplements is advocated.



Limitations

DNA barcoding does not currently yield information regarding the concentration of active ingredients.

Since DNA Barcoding needs a non damage sample for it to work, many supplements are often processed which damages DNA, causing DNA barcoding not to be accurate. Sometimes it misses active ingredients actually present.



Regulations Needed

Be it the FDA working with orthodox healthcare professionals or a different department, herbal medicines and dietary supplements should be covered in every country of the world by a drug regulatory framework to ensure that they conform with required standards of safety, quality, and efficacy.



Educate

It is essential to create an atmosphere of trust to share knowledge about the use and safety of herbal medicines. In fact, the education of healthcare professionals, providers of herbal medicines, and patients/consumers is vital for the prevention of potentially serious risks from misuse of herbal medicines.