



# Title:- Bioassay for the further scientific exploration of Homoeopathy

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**Abstract :** Homoeopathy is one of the popular medical practice system with its own speciality in terms of principals, medicine formation, application of medicine & acerating the response in patient. Though there are many controversies about its medicine preparation & its action in the humanbeings. Bioassay is the technique by which homoeopathic medicine preparation/effects can be ascertained in the living being, so its creates the area for the further exploration of the Homoeopathy on the scientific ground.

**Key Words :** Homoeopathy, Mother Tincture, Potentization,Dynamisation, Bioassay

## Introduction

Homoeopathy is a branch of universal medicine based on the 'principle of the like' (Similia Similibus Curentur = Like treats Like) and in minimum doses. It means that a substance in a massive dose generates pathological symptomatology; Multifunctionality and Impacts of Organic and Conventional Agriculture 2 symptomatology, has the possibility of cure it, if applied in the minimum doses obtained by dilution and intense agitation, in other words, homoeopathic succussion. with serially diluted medicines (1:9, 1:99, 1:999 and others) in water-ethanol vehicle alternating dilution with succussion . Through this process, medicinal products were obtained, called potencies, dilutions or dynamisations, in decimal, centesimal or thousands, and others. The starting point in obtaining a certain boosting curative capacity is a concentrate or mother tincture (MT), which is an alcoholic extract prepared from plants, animals, minerals and even inert materials as nanoparticulate metals . Despite its high dilution, it is possible to detect molecules or nanoparticles of the 'ponderable active principle' (MT) in dynamisations, even in high centesimal dilutions (12CH, 30CH, 200CH) although according to

Avogadro's theory, the dynamisation 12CH should have a single molecule of the original substance contained in the MT (Mazón-Suástegui José Manuel). This should be established by the technique of bioassay, which intern also may help in establishing the Homoeopathic system on more & more consolidated scientific basis.

## Methods & Materials

In 1776, Hahnemann published the results of his findings in a paper entitled "Essay on the new principle for ascertaining the curative power of drugs." In this, he postulated the most important principle of homeopathy, stating, "Every powerful medicinal substance produces in the human body a kind of peculiar disease, the more powerful the medicine, the more particularly We should imitate nature, which sometimes cures a chronic disease, by superadding another, and employ in the disease (especially chronic) we wish to cure, that medicine which is able to produce another very similar artificial disease, and the former will be cured similia similibus." (Banerji) In 1810, he published *The Organon of the Rational Art of Healing*, his greatest book, wherein he elucidated systematically the methods and principles of a system of medical treatment to which he had given the name of "Homeopathy" (Hahnemann, 1982). The homeopathic approach is holistic, that is, while treating a patient a homeopath will consider not only the disease, but the whole constitution of the patient. The patient is treated as a whole. To know about homeopathy, we should know what "individualization" and "similimum" mean because these two are the basic tenets on which selection of homeopathic medicines depends, as practised and taught from the time of Hahnemann.

Scientific validation of the efficacy of homeopathic medicines, which are nontoxic and inexpensive - making them ideal as "the People's Medicine" - has been stalled due to the inability to conduct clinical trials using standardized treatment protocols with these medicines. The true healing potential of homeopathy, then, has been repeatedly challenged and denied by mainstream medicine because of this problem. Thus, this system of medicine is at risk of being delegated to the archives of history.

## Definition of Bioassay

Bioassay also known as biological assays are typically conducted on the living organism to measure effect of a biologically active substance under controlled standard sets of condition. The estimation of concentration or potency of specific substance by measuring and comparing the response of test and standard preparation is called as bioassays.

Bioassay as a method for determination of the potency of particular substance measuring its effect or response on the living organisms. Bioassay are based upon the use of biological response as detection system for biologically active substance. In the simplest form it is used to assay the presence (and concentration) of a particular substance comparison with a known amount of same substance. Both are procedure by which potency or the nature of substance is estimated by studying its effect on living matter. (Parida, 2022)

If we consider a study to investigate the effects of different doses of insulin on blood sugar level of guinea pigs, this study will not necessarily be a bioassay. We can consider it as bioassay if a researcher is interested not only

in the changes in blood sugar level but also in the estimation of potencies of the doses on a scale with reference to a standard.

### **History of bioassay**

Paul Ehrlich (1854-1915), a German researcher did a serious work on biological assay when he carried out investigations into standardization of diphtheria antitoxin. This opened the gate for bioassay, and it has since then, become a common practice; but since 1930, statistician brought their work to bear on more refined methods of assay. (Bruhn, 1999) (Garg, May 2022)

### **Purpose of bioassay**

1. To ascertain the relative concentration and potency of drug or medicine
2. To determine the specificity of certain enzyme to certain substance.
3. To standardized a test preparation such that each contain uniform specified pharmacological activity

### **Type of Bioassay (Prof.K.SSrivasthan, 2022)**

#### **1. Qualitative Assay**

We use qualitative bioassay to assess the response or effect of the stimulus (substance) which cannot be qualified or measured. However, a visual correlation can be made and response can be graded. Example- homeopathic medicine changes the mental level like restlessness, sadness, anxiety, etc.

#### **2. Quantitative Assay**

In quantitative assay- we can measure the response of the stimulus(substance) produced by the subject. These types of bioassays are often involved in estimating of the concentration or potency of a substance and can be analyzed using various statical methods.

Example- Effect of Arsenic Album 30c is compare with arsenic album 200c, arsenic album 1M, Arsenic Album 10M, on recovery of corona virus.

#### **3. Direct Assay**

In direct assay, the response is considered as fixed and the dose as random, so, we can directly measure the concertation of the standard and the test preparation which produce a specific response. The response measured directly assays are binary, e.g the occurrence of an event or none.

#### **4. Indirect assay**

In such type of bioassays, we first determine the relationship between the dose and response corresponding to standard and test preparation of dose. Then the dose corresponding to a given response is obtained from the dose response relationship for each preparation separately.

#### **5. Analytical Dilution Assay**

In this kind of assay, the test and standard preparation are treated as identical with some component or constituent, apart from concentration or dilution. So different concentration or dilution are considered in these essays.

In the other words, we can say that an analytical dilution assay is one in which we analyze for the effective dilution of test preparation against a standard preparation which has all common components of the test preparation. Thus, in analytical dilution assays, the only difference is dilution level of the preparation, so the relative potency is equal to reciprocal of the dilution factor and is a constant.

## 6. Comparative dilution Assay

In this case, the test and the standard preparation do not have same composition, e.g we estimate the potency of two different drugs, let say's Drug A (test) with Drug(B) (Standard) for a given dose. In comparative dilution assay, the component of two preparation may only be qualitatively similar and so the value of the relative potency may not be constant or same.

In other words, we can say that two preparations may look alike qualitatively in a comparatively dilution assay, even though they are not the same. For example, two homeopathic medicines rated but different composition in terms of their effects on a particular virus.

Bioassay statistical tool gives standard of potency and its effect on living creature. So, we make uniform potency that most effective in particular condition and biologically not produce any adverse effect after taking long time.

### Why bioassay in homeopathy?

Bioassay have the different capability to assess the changes in the living being by different substances in the requisite quantity, so it may used in Homoeopathic sciences for following explorations

1. Sensitivity of tissue or cells are determined by plotting medicine on human being. (Bruhn, 1999)  
Tissue or cells are become sensitive after certain amount of dose. We can identify homeopathic mother tincture become effective after certain number of drops. Generally, mother tincture is taking on the base of drops. Most of mother tinctures are prepare from various poisonous plants. Every poison become fetal after cross the fatal dose. Before fatal dose, it will be becoming medicine on minimum amount of medicine which make sensitive to tissue. So, understand the amount of medicine, we can explore effect on cells.
2. Various potency effect on particular on specific organ.  
Homeopathic medicine has various types of potency like centesimal, decimal and 50 millesimal scale. Particular potency effect on specific tissues or cells, like ferrum phos 3x on red blood cells, Merc. Iod. Rubrum- 3x on lungs. Specific potency has specific capacity to change the function of cells and tissues. When homeopathic medicine prescribes on base of pathological condition like cancer, jaundice, diabetes, that situation require low potency. Low potency works on specific organ.
3. Development of symptoms within time limit can be determined various potency of homeopathic medicine.  
Symptoms develop by the medicines depend on their alkaloid, characteristic of chemical, amount of substance. All potential substance has different velocity to penetrate the cells of Nucleus and activate the

m-RNA. m-RNA is one of major substance to produce the symptoms in living creature. Higher potency develops the symptoms within few second and low potency develop the symptoms to take few hours to few days.

4. Subside of symptoms within time limit can be determined various potency of homeopathic medicine  
Molecule of medicine are utilized during metabolism. Molecule level decrease and symptoms of intensity is decrease. During the drug proving in homeopathy, we must observe the duration of medicine. If we can calculate the exact duration various potency of medicine on different age group of persons. We can create scientific theory for repetition of medicine.
5. Homeopathy is one of emerging science in medical stream. So, every day new medicines are prepared. That potency and toxicity can be determined by only base on bioassay.

The bioassays are considered to be essential during the development of new drugs. It helps in analyzing the efficacy as well as determining the side effects or toxicity etc. The bioassays may be qualitative or quantitative in nature while estimating the concentration or potency of a substance by measuring the biological response produce it.

Homeopathy experiment, bioassay also provide numerical assessment of some of the properties of the substance which is to be assayed. An essential part of this assessment is to take a changing into human being and their growth and other morphological changes in animals, plants, animal tissues, micro-organism or some other form of living matter.

In bioassay, we apply the stimulus (or dose or potency) on a substance and observe response of the subject due to applied stimulus. We repeat the process until enough observations have been made with desired level of precision.

For example- in a bioassay- Rauwolfia Serpentina mother tincture may be applied to human being and its response in term of the decreased blood pressure level can be measured. The magnitude of this change in the blood pressure (decrease blood pressure) is response of the subject which depend upon the dose of Rauwolfia Serpentina. We can vary the concentration of medicine by varying the amount of the dose given to the subject and this dose can be measured.

We can consider the bioassay as a planned experiment in which we apply two stimuli: one with standard preparation (known) another with test preparation (unknown) to the subjects. We compare these two sets of doses (standard and test preparation) in order to produce the similar desired response. The measurement of potency makes it possible to compare the standard preparation of various drugs with other test preparation on a fixed scale under the standard set of conditions.

While carrying out experiment/ trials, the amount of the stimulus can be varied in accordance with objective and plan of the experiment. We can measure the response or reaction of the subject after application of the stimulus in terms of change in some characteristics of the subject, for example, blood pressure, blood sugar, body weight, kidney, occurrence of death, recovery from a particular disease etc.

We can measure the amount or dose or potency of stimulus given to the subject in term of decimal , centesimal scale- 6c, 30c, 200c, 1M, 10M, 50M, CM... or 50 millesimal scale- 0/1, 0/2, 0/3....0/30

From a homoeopathic point view, bioassay can be defined as planned biological experiment for estimating the potencies of one or more test stimuli corresponding to a standard stimulus using the information provided by response measure on the subject.

### Conclusion:

Theory of bioassay gives good support for homeopathy science. Homeopathy is emerging medical science which help in cure diseases, but few area in homeopathy science are still require for research like dose, repetition, effect on cells like this. Bioassay give hope for fill the gap in homeopathic science very specially in the area of action of Mother Tincture or lower potency as it has the technique to find out how much the dose is capable to produce the desired changes in the living being, hence it is expected that bioassay can have definite role in exploring the Homoeopathic science .

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- **Original Article**
- **Conflict of Interest - None**