https://doi.org/10.1590/1806-9282.20221156

# "Genomic Homeopathy" proposal: use of auto-isotherapic of DNA as a modulator of gene expression in chronic diseases

Marcus Zulian Teixeira[1*]

## INTRODUCTION

Homeopathic treatment is based on four scientific assumptions (principle of therapeutic similitude, homeopathic pathogenetic trials, prescription of individualized medicines in dynamized doses) validated in different lines of research[1,2]. Employing the principle of therapeutic similitude[3,4] as the central nucleus, homeopathy administers individualized medicines (according to the totality of symptoms) in dynamized doses (ultra-diluted and potentized), which cause similar disorders to those intended to be treated (homeopathic pathogenetic trials)[5,6], with the aim of stimulating a vital (homeostatic) reaction of the body against its own illnesses.

In addition to these scientific assumptions, the homeopathic epistemological model uses vitalist and miasmatic philosophical concepts to broaden understanding of the human illness process (health disease process) and infer a nonmaterial and dynamic substrate that justifies the proven action of ultra-diluted medicines (Figure 1).

According to the homeopathic vitalist conception, the primary cause of diseases is in the imbalance of nonmaterial organic vital force, while the return to the state of health occurs through reestablishing the integrity of this vital principle. In contrast, the homeopathic miasmatic conception considers the dynamic action of chronic miasms as a fundamental cause for manifesting chronic diseases and the main obstacle to their natural resolution.

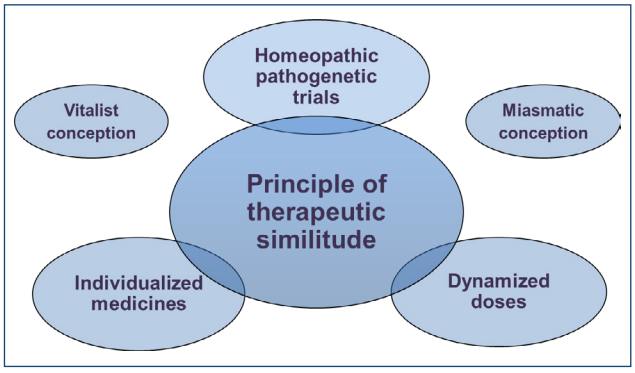


**Figure 1.** Scientific and philosophical assumptions of the homeopathic epistemological model.

In view of the biomedical model, the vital functions of the body are controlled by biochemical information contained in the genome (exome *plus* epigenome), and the primary cause of diseases is in disease-coding genes. In turn, these disease-promoting gene expressions are modulated by the epigenome, the non-protein-coding portion of DNA that regulates the coding portion (exome), a fundamental cause for the manifestation of chronic diseases.

Correlating these conceptions of homeopathic and biomedical models based on conceptual, functional, and experimental aspects described in detail in previous studies[7,8], we infer the hypothesis that the genome (exome *plus* epigenome) is the representation or biological substrate of the vital force or principle[7], while disease-promoting epigenetic alterations are the representation or biological substrate of chronic miasms[8]. Similarly, we infer that telomeres (terminal portion of chromosomes) are markers of the state of vital force or principle[9,10] as they are considered biomarkers of cellular vitality, aging, and the health disease process.

Assuming the premise that the biological substrate of the vital force and chronic miasms is located in the DNA or genome (exome *plus* epigenome), we have suggested using auto-isotherapic (auto-sarcode) of DNA (medicine prepared with the patient's own DNA, according to homeopathic pharmacotechnics) as a homeopathic treatment that stimulates the body's vital (homeostatic) reaction and the gene expression modulation in chronic diseases[7,8]. In contrast, we have suggested using telomere length as a marker of the effectiveness of homeopathic treatment[9,10].

Entitled "Genomic Homeopathy[11]," this innovative proposal of homeopathic treatment should be tested in basic and clinical research projects so that its safety and efficacy are verified, its methodology is improved, and it can be used as a new therapeutic approach in the future. The purpose of this preliminary communication is to disseminate this proposal to physicians

[1]Universidade de São Paulo, Hospital das Clínicas, Faculdade de Medicina, Departamento de Psiquiatria – São Paulo (SP), Brazil.
*Corresponding author: marcus@homeozulian.med.br
Conflicts of interest: the authors declare there is no conflicts of interest. Funding: none.
Received on August 30, 2022. Accepted on September 07, 2022.

and researchers, in general, inviting them to participate in elaborating research projects in the area, thus contributing to its validation, improvement, or refutation.

## PRIMARY CAUSE OF DISEASES: CORRELATION BETWEEN VITAL FORCE AND GENOME

In the homeopathic vitalist conception[12,13], the vital force or principle is substantially united to the physical body (organic vital force) and is responsible for preserving the state of health and maintaining life. An imbalance in the vital force causes the body to become ill, and its return to health occurs through its rebalance. In view of its nonmaterial and dynamic nature, the vital principle is influenced by other related forces, as well as by emotional and psychic manifestations. *Due to their similar nonmaterial and dynamic nature, dynamized homeopathic medicines are capable of restoring vital balance*, provided they are used according to the principle of therapeutic similitude (vital curative reaction). Samuel Hahnemann did not delve into understanding the nature or essence of the vital force, although he considers it to be the *prima causa morbi* of diseases. The homeopathic vitalist model presents a set of aspects that are similar to other medical and philosophical vitalist conceptions[13,14].

According to the biomedical model, the vital functions of the body are essentially controlled by biochemical information contained in DNA (set of nucleotide sequences) or cellular genome, which transmits these characteristics to future generations and undergoes changes in the face of various stimuli and environmental factors. This genetic material is contained in highly organized nuclear structures called chromosomes, formed by extremely long DNA molecules, containing genes and other nucleotide sequences with specific functions. The genome is composed of the exome (portion of DNA encoding proteins necessary for maintaining and controlling physiological functions) and the epigenome (portion of noncoding DNA that regulates the expression of coding genes). While the exome makes up 2% of the genome, the epigenome is formed by the remaining 98% of it, showing the complexity of the cell differentiation process and the consequent homeostatic regulation. In turn, physiological imbalances and most chronic diseases are manifested as a result of changes in the patterns of this gene expression.

In correlating the vital force characteristics and functions with those of the genome, we can highlight some analogies: the vital force and the genome are the fundamental substrates for the emergence and maintenance of life (vitality of living beings); the vital principle is responsible for maintaining the balance of sensations and body functions, just as the genome stores the biochemical information that will produce the proteins responsible for maintaining vital processes and developing organisms; diseases generally occur due to vital principle dystonia, as well as disease-promoting genomic alterations, with both phenomena being affected by the same etiopathogenic factors or stimuli; among others.

In view of these correspondences, we infer the hypothesis that the genome (exome *plus* epigenome) is the representation or the biological substrate of the vital force or principle[7].

## FUNDAMENTAL CAUSE OF CHRONIC DISEASES: CORRELATION BETWEEN MIASMS AND EPIGENOME

In the homeopathic miasmatic conception[15], the dynamic action of chronic miasms is the fundamental cause for manifesting chronic diseases, as well as the main obstacle to their natural resolution. Hahnemann describes a series of etiopathogenic factors or stimuli that weaken the vital force, transforming a "latent" miasm into one that is "manifested" and predisposes the emergence of chronic diseases, such as lifestyle, diet, climate change, lack of physical activity or excess of mental activity, sexual excesses, trauma, acute infectious diseases, use of drugs and alcohol, inadequate medication and treatments, emotional and psychological disorders, among others. These miasms are transmitted hereditarily.

According to the biomedical model, the epigenome is composed of a series of epigenetic alterations (DNA methylation, acetylation of histones, and micro-RNAs, among others), comprising a set of chemical processes mediated by enzymes that represent an additional mechanism for regulating individual gene expression at the transcriptional level; they modulate the genome activity and the phenotypic profile through the "activation" or "silencing" of genes, without altering the nucleotide sequence of the genetic code. The individual epigenome is heritably transmitted, influencing the health disease process of offspring and acting through interconnected regulatory networks that provide the genome with instructions on gene modulation. In addition to being reversible, these epigenetic changes can be expressed in the genome of individuals at any age as long as they come into contact with etiopathogenic factors or stimuli (inadequate habits and lifestyle, pollution and irradiation, use of drugs and alcohol, medications and hormones, inflammation, stress, and emotions, among others), promoting the "activation" or "silencing" of genes responsible for the manifestation of chronic diseases.

In correlating miasms characteristics and functions with those of epigenetic alterations, we can highlight that most chronic diseases have a miasmatic or epigenetic cause that predisposes their appearance and prevents their natural resolution;

"latency" or "manifestation" of miasms, as well as "silencing" or "activation" of disease-promoting genes are modulated by similar etiopathogenic factors or stimuli; both miasms and disease-promoting epigenetic changes are heritably transmitted.

In view of these correspondences, we infer the hypothesis that disease-promoting epigenetic alterations are the representation or biological substrate of chronic miasms[8].

## HOMEOPATHIC MEDICINES ACT ON THE GENOME BY MODULATING GENE EXPRESSION (GENE REGULATORY HYPOTHESIS)

Based on experimental studies that showed the effect of homeopathic medicines in repairing chromosomal damage caused by toxic or radioactive stimuli, since 1997 Khuda-Bukhsh[16,17] defends the hypothesis that the mechanism of action of homeopathic medicines occurs through the regulation of gene expression.

Evidencing the experimental studies that demonstrate the action of homeopathic medicines in molecular biology, Dei and Bernardini[18] reaffirm the hypothesis of Khuda-Bukhsh, suggesting that the action of homeopathic medicines "is not quenched by ultrahigh dilution and proceeds through modulation of gene expressions." Analogously describing experiments that evidence the action of homeopathic medicines on gene expression, Bellavite et al.[19] suggest that "these findings support the hypothesis that homeopathic remedies could turn some important genes on or off, initiating a cascade of gene actions to correct the gene expression that has gone wrong and produced the disorder or disease."

Considering that *homeopathic medicines act in the regulation of the vital force*, these experimental studies reiterate the hypothesis that the genome (exome *plus* epigenome) is the representation or the biological substrate of the vital principle[7,8].

## USE OF AUTO-ISOTHERAPIC OF DNA AS A MODULATOR OF GENE EXPRESSION IN CHRONIC DISEASES: "GENOMIC HOMEOPATHY" PROPOSAL

Although homeopathy locates the primary cause of disease in the imbalance of nonmaterial organic vital force, Hahnemann did not believe it possible to know "how the vital force causes the organism to display morbid phenomena, that is, how it produces disease" or recognize in the organic constitution "a manifest cause that excites or sustains the disease *(causa occasionalis)*" (*Organon of medicine,* paragraphs 6–20)[20].

Therefore, the homeopathic treatment was structured in the *clinically perceptible representation (symptomatic totality) of these vital and dynamic dystonias*, prescribing medicines that present similar dystonias (symptoms) according to the principle of therapeutic similitude.

However, if a biological substrate for these vital and dynamic dystonias can be identified, it will be possible to direct homeopathic treatment that stimulates an intrinsic reaction of the body against this *inner essence of diseases (causa occasionalis),* acting on the individual and profound pathophysiology.

Based on the conceptual, functional, and experimental correlations described above[7,8], we infer that the genome (exome *plus* epigenome) is the biological substrate of the vital force or principle (primary cause of diseases), while the disease-promoting epigenetic alterations are the biological substrate of chronic miasms (fundamental cause of chronic diseases). In homeopathic terms, the genome (exome *plus* epigenome) would be the *simillimum* of the vital force and the epigenetic alterations that promote chronic diseases would be the *simillimum* of miasms.

Grounded in these hypotheses and using the reactional treatment method called "isopathy" ("a method of curing a given disease by the same contagious principle that produces it") described by Hahnemann (*Organon of medicine,* note on paragraph 56)[20], we are suggesting administering the homeopathic medicine prepared with the patient's own DNA (auto-isotherapic of DNA) with the aim of awakening a dynamic, complex, and self-organizing therapeutic reaction of the vital principle or genome, thereby respectively promoting the vital balance or modulating gene expression in chronic diseases.

According to the Brazilian Homeopathic Pharmacopoeia[21], in the chapter "Biotherapics and Isotherapics," "isotherapics" are described as "medicinal preparations obtained from inputs related to the patient's pathology that are prepared following the homeopathic, pharmaco-technical method and are classified as auto-isotherapics and hetero-isotherapics." In turn, "auto-isotherapics" are "isotherapics whose active inputs are obtained from the very patient (fragments of organs and tissues, blood, secretions, excretions, calculus, feces, urine and microbial cultures, among others) and are destined to this specific patient". Following the "Minimum Requirements for the Preparation of Biotherapics and Isotherapics," complying with the biosafety norms of the Brazilian health surveillance[22], "auto-isotherapics can only be stored in alcohol at 70% (v/v) and dispensed from 12cH[21]," meaning in concentrations less than $10^{23}$ $mol^{-1}$ according to homeopathic pharmacotechnics (Table 1), which are below the Avogadro limit ($6.02\times10^{23}$ $mol^{-1}$).

The extraction and purification of genetic material (DNA extracted from whole blood) must be performed by molecular

**Table 1.** Homeopathic pharmacotechnics for the preparation of medicines (dynamization or potentization) according to the Hahnemannian Centesimal Method (cH)[21].

| |
|---|
| 1 part of matrix substance (of any nature or origin)+99 parts of water (or alcohol) ⇨ 100 successions ⇨ **1cH** dynamization ($10^{2}$ $mol^{-1}$ of the matrix substance); |
| 1 part of 1cH+99 parts of water ⇨ 100 successions ⇨ **2cH** dynamization ($10^{4}$ $mol^{-1}$); |
| 1 part of 2cH+99 parts of water ⇨ 100 successions ⇨ **3cH** dynamization ($10^{6}$ $mol^{-1}$); |
| 1 part of 3cH+99 parts of water ⇨ 100 successions ⇨ **4cH** dynamization ($10^{8}$ $mol^{-1}$); |
| 1 part of 4cH+99 parts of water ⇨ 100 successions ⇨ **5cH** dynamization ($10^{10}$ $mol^{-1}$); |
| 1 part of 5cH+99 parts of water ⇨ 100 successions ⇨ **6cH** dynamization ($10^{12}$ $mol^{-1}$); |
| And so on ... |
| **12cH** dynamization ⇨ $10^{24}$ $mol^{-1}$ of matrix substance (below the Avogadro limit: $6.02\times10^{23}$ $mol^{-1}$) ⇨ "absence of molecule-gram" ⇨ biosafety and absence of significant adverse events. |

Successions: vigorous agitations.

biology laboratories following specific techniques and protocols[23], which will be sent to homeopathic pharmacies or laboratories to prepare the auto-isotherapic of DNA (Table 2).

It is worth mentioning that the isopathic (isotherapic) treatment method is similar to immunotherapy or vaccines, reactional treatment methods in which minimal doses of pathogens (allergens, poisons, and microorganisms, among others) are administered, usually subcutaneously and repeatedly, with the aim of stimulating modulation of the immune response against diseases caused by these agents. However, it is worth mentioning that isopathic treatment is administered orally and in doses that are tens of thousands of times more diluted than the aforementioned immunizing agents (below the Avogadro limit), making the isotherapeutic method safe and free from significant adverse events.

**Table 2.** Preparation of auto-isotherapic of DNA according to the homeopathic pharmacotechnics (Hahnemannian Centesimal Method or cH)[21].

| | |
|---|---|
| 1. Receive the material from the molecular biology lab (DNA soluble in buffer solution). | 6. Apply 100 strong succussions to the dynamization vial, obtaining the 1cH potency. |
| 2. Add absolute alcohol (95° to 100° GL) to precipitate the filament of DNA. | 7. Transfer 1 part of 1cH potency to another vial containing 99 parts of alcohol 30° GL and apply 100 strong succussions to obtain 2cH potency. |
| 3. Wash the filament of DNA with alcohol 70° GL several times to perform the antisepsis and remove residue of adsorbed buffer. | 8. Repeat the previous procedure to obtain 3cH to 12cH potencies. |
| 4. Dissolve the isolated DNA filament in 0.5mL of alcohol 30° GL and shake the vial. The DNA will become soluble again. | 9. If 12cH potency is dispensed (start treatment), store 11cH potency in alcohol 70° GL to dispense higher potencies in the future. |
| 5. Transfer 1 part of DNA soluble to vial of dynamization (potentization) adding 99 parts of alcohol 30° GL. | 10. Repeat the process until the desired potency is obtained. |

## CONCLUSION

If the auto-isotherapic of DNA is able to stimulate a constitutional modulation of vital force or gene expression, it will exert systemic action in preventing and treating organic disorders and chronic diseases in general.

It is important to reiterate that this is a theoretical hypothesis and without scientific evidence so far, and its use in humans can only be disseminated after studies attest to its safety and efficacy. Therefore, the preliminary disclosure of this innovative proposal is intended to unite researchers around it, encouraging research that confirms or refutes its validity.

## REFERENCES


1. Teixeira MZ. Scientific evidence of the homeopathic epistemological model. Int J High Dilution Res. 2011;10(34):46-64. https://doi.org/10.51910/ijhdr.v10i34.421
2. Teixeira MZ. Special Dossier: "Scientific Evidence for Homeopathy". Rev Assoc Med Bras. 2018;64(2):93-4. https://doi.org/10.1590/1806-9282.64.02.93
3. Teixeira MZ. "Similitude in Modern Pharmacology": two decades of studies contributing to the scientific basis of the homeopathic healing principle. Rev Assoc Med Bras. 2022;68(3):303-7. https://doi.org/10.1590/1806-9282.20211362
4. Teixeira MZ. "Similia Similibus Curentur": the scientific grounding of the homeopathic therapeutic principle through the systematic study of the rebound effect of modern drugs. Clinics (São Paulo). 2022;77:100091. https://doi.org/10.1016/j.clinsp.2022.100091
5. Teixeira MZ. Protocolo de experimentação patogenética homeopática em humanos. Rev Med (São Paulo). 2013;92(4):242-63. https://doi.org/10.11606/issn.1679-9836.v92i4p242-263
6. Teixeira MZ. "New Homeopathic Medicines" proposal: a database made available in three free-access bilingual digital books. Rev Assoc Med Bras. 2021;67(10):1387-91. https://doi.org/10.1590/1806-9282.20210482
7. Teixeira MZ. Correlation between vitalism and genetics according to the paradigm of complexity. Homeopathy. 2020;109(1):30-6. https://doi.org/10.1055/s-0039-1692162
8. Teixeira MZ. Isopathic use of auto-sarcode of DNA as anti-miasmatic homeopathic medicine and modulator of gene expression? Homeopathy. 2019;108(2):139-48. https://doi.org/10.1055/s-0038-1676810

9. Teixeira MZ. Telomere length: biological marker of cellular vitality, aging, and health-disease process. Rev Assoc Med Bras. 2021;67(2):173-7. https://doi.org/10.1590/1806-9282.67.02.20200655
10. Teixeira MZ. Telomere and telomerase: biological markers of organic vital force state and homeopathic treatment effectiveness. Homeopathy. 2021;110(4):283-91. https://doi.org/10.1055/s-0041-1726008
11. Teixeira MZ. Homeopatia Genômica – Genomic Homeopathy. Homeopatia: ciência, filosofia e arte de curar. 2022. [cited on 2022 Aug 15]. Available from: https://genomichomeopathy.com.br
12. Teixeira MZ. Concepção vitalista de Samuel Hahnemann. 2nd ed. São Paulo: Author's edition; 2021. [cited on 2022 Aug 15]. Available from: https://pesquisa.bvsalud.org/portal/resource/pt/biblio-1178043
13. Teixeira MZ. Antropologia médica vitalista: uma ampliação ao entendimento do processo de adoecimento humano. Rev Med (São Paulo). 2017;96(3):145-58. https://doi.org/10.11606/issn.1679-9836.v96i3p145-158
14. Teixeira MZ. A natureza imaterial do homem: estudo comparativo do vitalismo homeopático com as principais concepções médicas e filosóficas. 2nd ed. São Paulo: Author's edition; 2015. [cited on 2022 Aug 15]. Available from: https://pesquisa.bvsalud.org/portal/resource/pt/biblio-909924
15. Hahnemann S. The chronic diseases, their peculiar nature and their homeopathic cure [translated by Louis H. Tafel] [internet]. Philadelphia: Boericke & Tafel; 1896. [cited on 2022 Aug 15]. Available from: http://homeoint.org/books/hahchrdi/index.htm
16. Khuda-Bukhsh AR. Towards understanding molecular mechanisms of action of homeopathic drugs: an overview. Mol Cell Biochem. 2003;253(1-2):339-45. https://doi.org/10.1023/a:1026048907739
17. Khuda-Bukhsh AR. Current trends in high dilution research with particular reference to gene regulatory hypothesis. Nucleus. 2014:57:3-17. https://doi.org/10.1007/s13237-014-0105-0
18. Dei A, Bernardini S. Hormetic effects of extremely diluted solutions on gene expression. Homeopathy. 2015;104(2):116-22. https://doi.org/10.1016/j.homp.2015.02.008
19. Bellavite P, Signorini A, Marzotto M, Moratti E, Bonafini C, Olioso D. Cell sensitivity, non-linearity and inverse effects. Homeopathy. 2015;104(2):139-60. https://doi.org/10.1016/j.homp.2015.02.002
20. Hahnemann S. Organon of medicine [translated by William Boericke]. 6th ed. New Delhi: B Jain Publishers; 1991. [cited on 2022 Aug 15]. Available from: http://www.homeoint.org/books/hahorgan/index.htm
21. Agência Nacional de Vigilância Sanitária (ANVISA) [The National Health Surveillance Agency]. Farmacopeia homeopática brasileira [Brazilian homeopathic pharmacopoeia]. 3rd ed. Brasília: ANVISA; 2011. [cited on 2022 Aug 15]. Available from: http://antigo.anvisa.gov.br/en_US/farmacopeia-homeopatica
22. Agência Nacional de Vigilância Sanitária (ANVISA) [The National Health Surveillance Agency]. Resolução da diretoria colegiada – RDC nº 67, de 08 de outubro de 2007. Diário oficial da república federativa do Brasil, Poder executivo, Brasília, DF: ANVISA; 2007. [cited on 2022 Aug 15]. Available from: http://189.28.128.100/dab/docs/legislacao/resolucao67_08_10_07.pdf
23. El-Ashram S, Al Nasr I, Suo X. Nucleic acid protocols: extraction and optimization. Biotechnol Rep (Amst). 2016;12:33-9. Available from: https://doi.org/10.1016/j.btre.2016.10.001