HOMEOPATHY A MATERIAL SCIENCE AND PERSONALIZED NANOMEDICINE! – NEW CHALLENGES AND OPPORTUNITIES.

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NANOPARTICLE CHARACTERIZATION OF AURMET 6C - CM AND CARBO VEG 6C - CM

- This research during 2011-16 led to the discovery of Nanoparticles (NP) & Quantum dots (QD) in all ultra high dilutions (6C–CM & LM1–LM30), which confirmed Homeopathy is material science not dynamic science as believed earlier.

- More than 30 homeopathic drugs (C & LM) of metals, minerals, plants, imponderabilia, nosodes, etc. –130+ samples were analyzed.
INTRODUCTION

- Homeopathic medicines are prepared by the process called potentisation.

  - **Product**
  
    - **Potency**
    
      - Decimal (1:9)
      - Centesimal (1:99)
      - 50 millesimal (1:50000)

- Generally considered as placebo therapy.
NANOSCIENCE

• 1nm =1/billionth of a meter or 1/1000 of a micron

• Nanotechnology refers to the manipulation of matter on atomic and molecular level

• Electron microscopy – helps to see nanoscale particles

• Energy Dispersive Spectroscopy – helps to analyze the elementary composition of particles
EQUIPMENT USED FOR THE STUDY

A. High Resolution Transmission Electron Microscope (HRTEM) and Energy Dispersive Spectroscopy (EDS)
   for
   Aurum metallicum

B. Field Emission Scanning Electron Microscope (FESEM) and Energy Dispersive Spectroscopy (EDS)
   for
   Cabo veg
NEED OF STUDY

- Know the contents of Hom potencies
- Validate the scientific nature of Homeopathy
- No particle in Hom potencies !!!!!!!!!!!!!
- Presence of particles ??????????
Original Article

An evaluation of Avogadro's number in the light of HRTEM and EDS studies of high dilutions of *Ferrum metallicum* 6, 30, 200, 1M, 10M and 50Mc

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Abstract
As a therapeutic tool high dilutions (HDs) are always at the center of controversies due to problems to validate them as a function of Avogadro's number. Nevertheless, homeopathy is practiced around the world as a complementary and alternative medicine. The present study sought to evaluate HDs of homeopathic drug *Ferrum metallicum* (Ferr) 6, 30, 200, 1M, 10Mc and 50Mc, all of which except for 6c surpass Avogadro's number. Using HRTEM and EDS it was conclusively shown that: 1) all the investigated HDs of *Ferr* contained plenty of nanoparticles (NPs); 2) the size of NPs were within the quantum dots (QD) size range, except for 50Mc, in which larger particles were found (12.61nm); 3) NPs contained iron in various weight percentages; 4) the weight percentage of iron was highest in HDs 10Mc and 50Mc.

Keywords: Homeopathy, High dilutions, *Ferrum metallicum*, Nanoparticles, HRTEM, EDS, Quantum dots, Avogadro's number
Field Emission Scanning Electron Microscopic (FESEM) and Energy Dispersive Spectroscopic (EDS) Studies of Centesimal Scale Potencies of the Homeopathic Drug *Lycopodium clavatum*

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**Abstract**

Background: Homeopathy is a therapeutic method discovered by Samuel Hahnemann, MD, in 1790. Homeopathy often makes use of medicines prepared at such high dilutions that the physical existence of even a single molecule of the source substance is said to be theoretically impossible. Nevertheless, these drug products appear to have biological effects. Therefore, we sought to examine the potential physical properties of a common homeopathic medicine, *Lycopodium clavatum*.

Methods: Selected dilution factors (potencies) of *Lycopodium clavatum* were studied with the help of Field Emission Scanning Electron Microscopy (FESEM) and Energy Dispersive Spectroscopy (EDS) for the identification of particles and their elementary composition.

Results: Nanoparticles were detected in all potencies tested. Carbon and oxygen were the two elements present in all sample particles.

Conclusion: The present study confirms the presence of nanoparticles in multiple potencies of the common homeopathic medicine *Lycopodium clavatum*. This data adds to the body of evidence concerning the presence of source material in high potency homeopathic medicines.
Original Research Article


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Abstract: The author’s earlier publications have shown the presence of nanoparticles (NPs) of the original drug material in all the higher dilutions of homeopathic drugs; viz, Lycopodium and Ferrummetallicum. The present study is to compare the two different scales of potencies discovered by Samuel Hahnemann; with the help of HRTEM and EDS. It is found that:- i) all the high dilutions (HDs) of Natrummuriaticum (Nat mur) contain NPs; ii) the size of NPs is within quantum dots (QD) size range, except for 6C, where larger particles are found (14nm); iii) NPs contain Sodium (Na) and Chlorine (Cl) in various weight percentages; iv) The smallest NPs in higher concentration are present in 50 millesimal (LM) scale; v) The weight percentage of Na and Cl is very high (more than 99%) in all the potencies of LM scale except in LM6. The combined weight percentage of Na and Cl is less than 1% in all centesimal scale of potencies except in CM, where it is 1.09%; vi) The presence of elements other than Na and Cl is many in centesimal scale. The presence of other elements has been negligible in LM scale and vii) The comparative analysis shows that LM scale HDs are rich in the NPs than in centesimal scale HDs.

Keywords: Homeopathy, High dilutions, Nat mur, Nanoparticles, HRTEM, EDS, Quantum dots, Avogadro’s number, Angstrom, Centesimal scale, 50 millesimal scale (LM scale)
RESEARCH ARTICLE

HOMEOPATHY A MATERIAL SCIENCE! NANOPARTICLE CHARACTERIZATION OF AURUMMETALLICUM 6C, 30C, 200C, 1000C, 10000C, 50000C AND 100000C

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HRTEM, EDS, Aurummetallicum (Aur met), Nanoparticles (NPs), Quantum Dots (QDs), Homeopathic potencies, Trituration, Succession.

ABSTRACT

Background: In the earlier research publications of the author he has identified the presence of nanoparticles (NPs) of the drug material in all the higher dilutions of homeopathic drugs; viz, Lycopodium and Ferrummetallicum.

Method: The present study is done with the help of HRTEM (High Resolution Transmission Electron Microscope) and EDS (Energy Dispersive Spectroscopy).

Result and Conclusion:
1. The analysis of homeopathic drug Aur met (Gold) shows the presence of nanoparticles of Gold in all the potencies studied, i.e. 6c, 30c, 200c, 1000c, 10000c, 50000c and 100000c.
2. Nanoparticles of Aur met were found mostly in Quantum Dots scale in all the dilutions.
3. The study proves that homeopathy is really a material science and not merely an energy medicine or placebo therapy as considered earlier.
HOMEOPATHY A NANOMEDICINE – IDENTIFICATION AND CHARACTERIZATION OF NPS IN HYPERICUMPERFORATUM 6C, 30C, 200C, 1M, 10M, 50M AND CM

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Homeopathy, Potencies, ultra high dilutions, Hypericum perforatum, FESEM (Field Emission Scanning Electron Microscope), EDS (Energy Dispersive Spectroscopy), Centesimal scale, Avogadro’s number.

ABSTRACT

Homeopathy is a therapeutic method discovered by Dr. Samuel Hahnemann and is being practiced around the world. The validity of the science of homeopathy was questioned due to the lack of evidence of any material content in its ultra-high dilutions. The current paper as well as the earlier research papers of the author established the presence of a large number of nanoparticles and quantum dots in all scales of dilutions of homeopathic drugs. The body of evidence presented are sufficient to establish the fact that homeopathy is not a placebo therapy but a nanomedicine.
FINDINGS OF THE STUDY

A. HRTEM ANALYSIS

TEM images of Aurum met 6C. Particle size 0.3 nm – 20 nm

100 nm magnification

50 nm magnification

10 nm magnification

2 nm magnification
TEM IMAGES OF AURUM MET 30C. Particle size 3nm – 366nm
TEM IMAGES OF AURUM MET 200C. **Particle size 5nm – 125nm**

- **500 nm magnification**
- **100 nm magnification**
- **20 nm magnification**
- **10 nm magnification**
TEM IMAGES OF AURUM MET 1M. Particle size 5nm – 50nm

500nm magnification

100nm magnification

20nm magnification

10nm magnification
TEM IMAGES OF AURUM MET 10M. Particle size 25nm – 50nm

500 nm magnification

200 nm magnification

50 nm magnification

20 nm magnification
TEM IMAGES OF AURUM MET 50M. **Particle size** 3nm – 458nm

500 nm magnification

200 nm magnification

100 nm magnification

50 nm magnification
TEM IMAGES OF AURUM MET CM. **Particle size 7nm – 100nm**

- **10µm magnification**
- **50nm magnification**
- **500nm magnification**
## Percentage of Elements in the Particles Seen in Aurum Metallicum
### 6C – CM

<table>
<thead>
<tr>
<th>Weight percentage</th>
<th>Au</th>
<th>Al</th>
<th>Si</th>
<th>K</th>
<th>Fe</th>
<th>Cu</th>
<th>In</th>
<th>Hf</th>
<th>O</th>
<th>Na</th>
<th>Cl</th>
<th>B</th>
<th>Co</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>6C</td>
<td>2.82</td>
<td></td>
<td></td>
<td>6.51</td>
<td></td>
<td>75.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.53</td>
</tr>
<tr>
<td>30C</td>
<td></td>
<td>89.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>12.14</td>
<td></td>
<td></td>
<td>29.36</td>
<td></td>
<td>25.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20.08</td>
</tr>
<tr>
<td>1M</td>
<td>1.24</td>
<td>15.63</td>
<td>18.48</td>
<td>2.06</td>
<td>1.04</td>
<td>32.52</td>
<td>8.93</td>
<td>11.68</td>
<td>8.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10M</td>
<td>24.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.95</td>
<td>38.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14.54</td>
</tr>
<tr>
<td>50M</td>
<td>9.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.86</td>
<td>53.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM</td>
<td>6.58</td>
<td></td>
<td></td>
<td>6.01</td>
<td>35.36</td>
<td>36.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.08</td>
</tr>
</tbody>
</table>
COMPARATIVE WEIGHT PERCENTAGE OF Au IN AURUM MET 6C - CM

Aurum met 6C - CM

- 6C
- 30C
- 200C
- 1M
- 10M
- 50M
- CM
## SIZE OF NANOPARTICLES IN AUR MET 6C - CM

<table>
<thead>
<tr>
<th>Potency</th>
<th>Particle size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aur met 6C</td>
<td>0.3 – 20 nm</td>
</tr>
<tr>
<td>Aur met 30C</td>
<td>3 – 366 nm</td>
</tr>
<tr>
<td>Aur met 200C</td>
<td>5 – 125 nm</td>
</tr>
<tr>
<td>Aur met 1M</td>
<td>5 – 50 nm</td>
</tr>
<tr>
<td>Aur met 10M</td>
<td>25 – 50 nm</td>
</tr>
<tr>
<td>Aur met 50M</td>
<td>3 – 458 nm</td>
</tr>
<tr>
<td>Aur met CM</td>
<td>7 – 100 nm</td>
</tr>
</tbody>
</table>
B. FESEM ANALYSIS

FESEM Images Of Carbo veg 6c.
Particle size 162nm – 216nm

1µm magnification

FESEM Images Of Carbo veg 30C (82nm – 287nm)

200 nm magnification
FESEM Images Of Carbo veg 200C.
Particle size 45nm – 63nm

1µm magnification

FESEM Images Of Carbo veg 1M.
Particle size 90nm – 131nm

1µm magnification

200 nm magnification
FESEM Images Of Carbo veg 10M.
Particle size 59nm – 266nm

1µm magnification

200 nm magnification

FESEM Images Of Carbo veg 50M.
Particle size 132nm – 237nm

1µm magnification

200 nm magnification
FESEM Images of Carbo veg CM.
Particle size 68nm – 100nm

1μm magnification

200 nm magnification

FESEM Image of Alcohol sample
## PARTICLE SIZE OF CARBO VEG 6C - CM

<table>
<thead>
<tr>
<th>Carbo veg 6C</th>
<th>162 nm - 216 nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbo veg 30C</td>
<td>82 nm - 287 nm</td>
</tr>
<tr>
<td>Carbo veg 200C</td>
<td>45 nm - 63 nm</td>
</tr>
<tr>
<td>Carbo veg 1M</td>
<td>90 nm - 131 nm</td>
</tr>
<tr>
<td>Carbo veg 10M</td>
<td>59 nm - 266 nm</td>
</tr>
<tr>
<td>Carbo veg 50M</td>
<td>132 nm - 237 nm</td>
</tr>
<tr>
<td>Carbo veg CM</td>
<td>68 nm - 100 nm</td>
</tr>
</tbody>
</table>
## Weight Percentage of Elements in the Particles Seen in Carbo Veg 6C – CM

<table>
<thead>
<tr>
<th>Weight Percentage</th>
<th>Elements</th>
<th>C</th>
<th>O</th>
<th>Na</th>
<th>Cl</th>
</tr>
</thead>
<tbody>
<tr>
<td>6C</td>
<td>46.41</td>
<td>40.39</td>
<td>12.49</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td>30C</td>
<td>28.66</td>
<td>69.03</td>
<td>2.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200C</td>
<td>32.97</td>
<td>65.56</td>
<td>1.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1M</td>
<td>18.86</td>
<td>79.11</td>
<td>2.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10M</td>
<td>21.02</td>
<td>78.98</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50M</td>
<td>25.56</td>
<td>73.11</td>
<td>1.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM</td>
<td>30.46</td>
<td>67.48</td>
<td>2.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
COMPARATIVE WEIGHT PERCENTAGE OF CARBON & OXYGEN IN CARBO VEG 6C - CM

The chart shows the comparative weight percentage of carbon (C) and oxygen (O) in Carbo Veg 6C - CM at different levels of processing: 6C, 30C, 200C, 1M, 10M, 50M, and CM. The y-axis represents the percentage weight, ranging from 0 to 90, while the x-axis lists the different processing levels.
CONCLUSION

• Nanoparticles and quantum dots (QD) are seen in all potencies of Aurum metallicum
• Au is present in all the potencies of Aur met
• Nanoparticles are seen in all the potencies of Carbo veg
• Carbon (C) and Oxygen (O) constitute the main elements in all the particles of carbo veg
• Homeopathic drugs are Nanomedicine
MODE OF ACTION I

• NPs act as: Enzymes and/or modify them

• QDs have free entry through
  o Cell walls
  o Nucleus
  o Organelles
  o DNA & RNA
  o Activates epigenetic programming
MODE OF ACTION II

• Fundamentals of biological systems are managed at nanometer scale, e.g.
  o DNA, RNA
  o Hormones
  o Enzymes
  o Receptors
  o Antigens
  o Antibodies etc.
MODE OF ACTION III

Modern medicine

• Assumes cells as the basic unit of life and that diseases originate from cellular and biochemical plane and hence the cure

• Therapy of modern medicine – molecules act at cellular and biochemical levels
Homeopathy truly a nanomedicine
• Operates at subtler level than cells
• DNA, RNA, Hormones, Enzymes
• Receptors, Antigens, Antibodies etc

• Dr Hahnemann (1755 –1843) – The pioneer practitioner and founder of the concept of Nanomedicine.

• Michael Faraday (1791 –1867) – The father of Nanoscience
Faraday made the first experiments with nanoparticles (gold colloids) and thus initiated the fields which are today known as Nanoscience and Nanotechnology.

The preparations of gold sols that Faraday studied were ruby-red in color and were known as Faraday’s gold.
SAMUEL HAHNEMANN
(1755 – 1843)

Founder – Homeopathy and the concept of personalized Nanomedicine
The objectivity and predictability offered by Cartesian philosophy and Newtonian physics need to be modified in the course of time, warranting a radical shift in the perceptions of medical science.
HOMEOPATHS TO REALIZE:

The earlier concepts of Homeopathy needs revision

To make Practice of Homeopathy more definite

Modify the theory and practice

Forthwith The new discoveries
BASIC SCIENCE NEED TO GET OUT OF ITS FIXATIONS ON:

• Avogadro number
• Homeopathic dilutions as placebos

And Accept

New Advancement in science
MEDICAL SCIENCE TO ACCEPT

- Inter cellular realities of life
- Time to rework Virchow’s theories
- Appreciate the ability of homeopathic NPs to work at intercellular nanobiological units

- A synthesis of medical researches as the need of the time
FINALLY:
Homeopathy to be integrated into the research of

Nanoscience and Nanomedicine

Result
An impending medical revolution
PRESENT RESEARCH FINDINGS PROVE

• Homeopathy is a material science not a dynamic science as suggested by Dr. Hahnemann (Remember – Hah himself wrote “Dynamism” as a conjecture not a rational explanation)

• Homeopathy is a nanomedicine

• Hom is truly a PERSONALIZED NANOMEDICINE

Homeopathic individualization of patient is a way to sketch the genetic blue print of the person using individual expressions of signs and symptoms
HOMEOPATHS

• Practitioners of advanced form of PERSONALIZED Nanomedicine

• Dr. Hahnemann was unaware of the material potential of his discovery (potentization) and hence assumed as dynamic

• It is the time to declare that Homeopathy is a material science operating at intra cellular biologically active nanounits that fundamentally regulates life.
EXISTENTIAL REALITY

HOMEOPATHS BE PROUD
THAT THEY ARE THE
PRACTITIONERS OF
AN EVOLVING
FUTURISTIC
MEDICINE
CENTRE FOR STUDY

1. FESEM & EDS – CeNSE (Centre for Nano Sciences and Engineering) IISC (Indian Institute of Science), Bangalore.

2. HRTEM & EDS – International & Inter University Centre for Nanoscience & Nanotechnology, M.G. University, Kottayam.

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- Prof. T. Abdurahiman – Ph.D Guide.
Hope sees the invisible, feels the intangible and achieves the impossible.

THANK YOU