

Dissipative structures in water, validated by quantum electrodynamics, are information carriers of solute through dilutions

Abstract

Do the highly persistent tiny icicles or ice-like structures present in water at room temperature which are identified as dissipative structures and supported by Quantum electrodynamics (QED), serve as information carriers of the solute dissolved in it? – This question is addressed by the present article using pictures obtained from atomic force microscope (AFM). Here, as a case study, we worked with six potentised homeopathic medicines: Arnica Mont, Cuprum Met and Pulsatilla, each of them with potencies of 6CH and 30CH, that is, one dilution below and the other beyond Avogadro limit. Dissipative structures are found in all of them, which are different for different medicines. They seem to suggest that information related to starting material is carried by material-specific dissipative structures of water through dilutions below as well as beyond Avogadro limit.

Keywords: tiny icicles, dissipative structures, information carriers

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Abbreviations: QED, quantum electrodynamics; AFM, atomic force microscope; CD, coherent domains; EDS, extremely diluted solution

Introduction

It is found that some scientific information are linkable to scientific basis of homeopathy (apparently fallacious but really a genuine healthcare system), particularly, its high potency preparations containing no trace of the starting material. In this respect G.O. Barnard, a physicist, proposed water polymer model¹ to explain how water may retain the information related to potentised homeopathic medicines. B Sergeev,² a biologist, apprised us about presence of tiny icicles or ice-like structures in water at room temperature. Then, Ilya R. Prigogine,³ a chemist, informed us about self-aggregating dissipative structures in liquid water. Physicists R Arani et al.⁴ proved by Quantum Electrodynamics (QED) that nano-sized ice-like structures will exist in water which they called as Coherent Domains (CD). The review article by A.I. Konovalov and I.S. Ryzhkina in their paper⁵ reports the formation of nano-sized molecular assemblies, so called nano-associates, in aqueous solutions of low concentrations prepared by successive serial dilutions. V. Elia, R. Germano and E. Napoli present a short review⁶ of the evidence – both experimental and theoretical – of the formation of dissipative structures in liquid water induced in extremely diluted solution (EDS). It also tells about their tremendously persistent nature even in the solid phase. In a review paper⁷ C.R. Mahata tells that medicinal information is carried by induced water structures in the form of nano-associates. The point is that though called by different names (like, water polymer, ice-like structures, Coherent Domains, nano-associates) one cannot fail to understand that they are nothing but dissipative structures. These structures of water were empirically observed and are conceived to carry molecular information – be it impressed by homeopathic means or otherwise.

Method

Tremendous persistence of dissipative structures (surviving drying or lyophilization) in a solution supposed to carry information of the dissolved solute opened up the possibility of simple experimental verification. We can put one drop of the solution on a glass slide, dry it up and take its picture by an AFM. We performed this experiment with six medicines: Arnica Mont-6CH, Arnica Mont-30CH, Cuprum Met-6 CH, Cuprum Met-30 CH, Pulsatilla-6 CH and Pulsatilla-30CH prepared in ethanol and then further diluted 200 times in distilled water allowing a settling time of one hour for each of them for the structures to form. It was found even with naked eyes that there were solid residues left after drying – not that everything evaporated. While recording the picture the zoomed area was carefully selected so that it did not contain impurity images.

Results

Three dimensional AFM pictures of these solid residues are given in Figure 1 to Figure 3 suggesting that structures are carrying information about the starting material and the degree of dilution.

Discussion and conclusion

Three dimensional AFM pictures of homeopathic medicines with such clarity is a distinguishing feature of our present experiment. All the six pictures are different from each other – at present only qualitatively. It is just a preliminary report. But, it strengthens the feeling that information related to starting material is carried by material-specific dissipative structures of water through dilutions below as well as beyond Avogadro limit. It tries to characterize potentised medicines with their AFM pictures.

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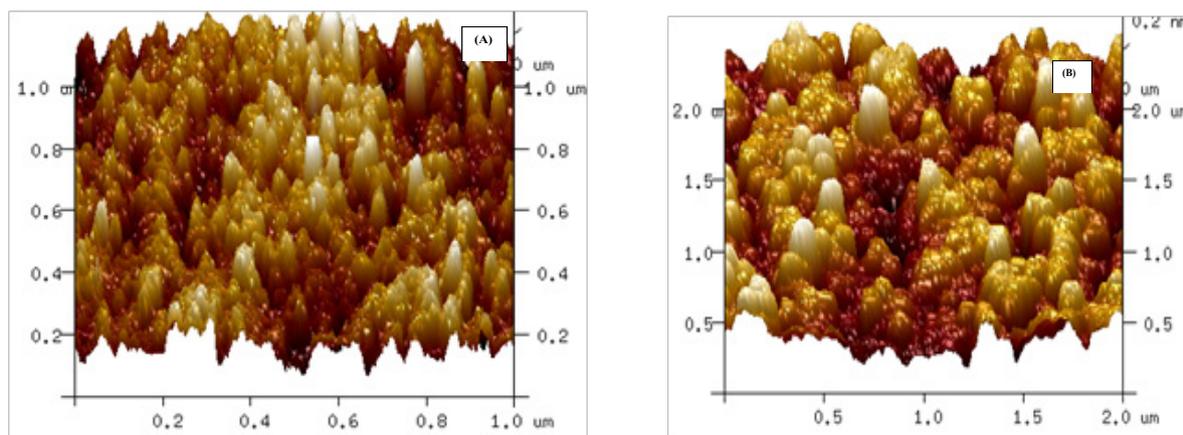


Figure 1 (A) Arnica Mont-6CH, 1 μm frame; (B) Arnica Mont-30CH, 2 μm frame.

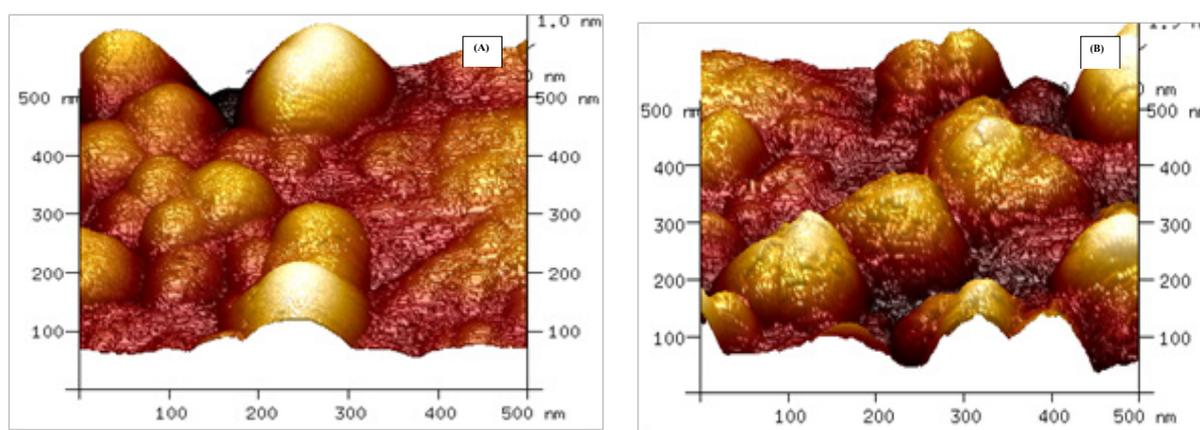


Figure 2 (A) Cuprum Met-6CH, 0.5 μm frame; (B) Cuprum Met-30CH, 0.5 μm frame.

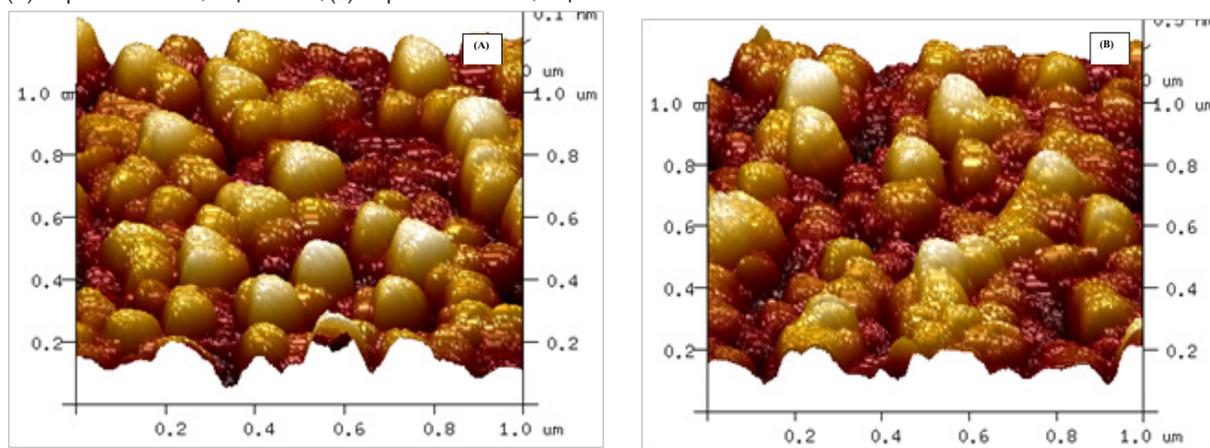


Figure 3(A) Pulsatilla-6CH, 1 μm frame (B) Pulsatilla-30CH, 1 μm frame.

Conflicts of interest

Author declares their are no conflicts of interest towards the article.

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