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Original article

Investigation of the Influence of clathrate hydrate crystals on the Structuring of Homeopathic High Dilutions

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Abstract

High dilutions (HD) of drugs used in homeopathy are mostly too dilute to contain original drug molecules. But evidence supports their specific biological and therapeutic effects. The reason behind this is thought to be the water structure characteristic of the original drug. Spectroscopic studies indicate that the specific water structure in HDs can be resolved into free water molecules, the hydrogen bonding strength of water hydroxyl, the number of hydrogen bonds, and clathrate hydrate crystals (CHC). HDs are prepared in EtOH water solution by serial dilution and mechanical agitation and are called potencies. The objective of the present study is to further confirm the presence of CHCs in the two potencies of three drugs. Electronic spectra of the HDs of the potencies indicate two broad peaks and marked differences in intensities of absorption. Fourier Transform Infrared (FT-IR) spectra of the test potencies and their control show difference in intensity shift and contour shape of OH stretching and bending bands. All the experimental data indicate the presence of CHCs in varying amounts in the test potencies. Potentization of drugs involves charge transfer (CT) interaction.

Keywords: High dilutions, FT-IR spectra, UV spectra, Clathrate hydrate crystal, Water structure, Charge transfer interaction.

Introduction

High dilutions of drugs (HDs) have been used in homeopathy for more than 200 years. This therapeutic system was introduced by Dr. Samuel Hahnemann, a German physician, in 1756 [1,2]. The HDs, prepared by serial dilution followed by mechanical agitation or succussion in several progressive steps, are called potencies. The drugs are diluted in 90% EtOH in the proportion of 1:100. The twelfth potency has a dilution of 10^{-24} which crosses the Avogadro number. So the twelfth and higher potencies are too dilute to contain original drug molecules. This makes homeopathy scientifically untenable. But there is a large number of evidence that shows that these potencies have biological and therapeutic effects [3,4].

Scientists believe that the biological effects of potencies are due to characteristic water structures [5-8]. In a series of experiments, we have demonstrated that water structures in the potencies involve free water molecules, hydrogen bond strength of water hydroxyl, and several hydrogen bonds. We have recently demonstrated that the potencies of two homeopathic drugs contain clathrate hydrate crystals (CHC) in addition to other factors already reported [9]. The objective of the present study is to further confirm the presence of CHCs in the potencies of other drugs. These crystals occur in methane gas trapped in ice crystals and break down at higher temperatures [10,11]. Homeopathic

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