

Abstract dell'intervento di Vittorio Elia e Elena Napoli

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L'acqua e le sue proprietà chimico – fisiche: le strane connessioni con i più semplici sistemi viventi

In questo articolo presentiamo i risultati di uno studio gravimetrico su soluzioni estremamente diluite della Medicina Omeopatica (EDS) evaporate alla temperatura di 90° C. I risultati confermano l'esistenza di aggregati molecolari di molecole di acqua, strutture dissipative che presentano una elevatissima resistenza alle alte temperature.

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Conductometric and pHmetric titrations of Extremely Diluted Solutions (EDS) were performed by adding NaOH or HCl solutions at concentrations between 1×10^{-2} and 1×10^{-3} M. The aim of this work is to obtain further confirmation of the hypothesized presence, in the EDS, of molecular aggregates of water molecules.

The measurements on the EDS evidenced some relevant differences compared to those on solutions with just water as solvent. The conductivity and the pH caused by adding the titrant, namely NaOH or HCl were markedly different to those of the control solutions.

We suppose that the preparation procedure of the EDS could produce non-equilibrium changes in the supramolecular structure of water. The experimental results were interpreted by considering the interactions that can take place between the OH^- or H^+ and the hypothesized molecular aggregates of water molecules i.e. dissipative structures.

A qualitative comparison was made about the nature of the driving force that leads to the formation of the complexes between the two ions deriving from water and the molecular aggregates of water molecules (dissipative structures).

In this work we have introduced a new methodology to study the EDS and to have more information about the presence of the dissipative structures, ie the gravimetric one. We evaporate at 90°C for 36-48 hours, a known quantity of the EDS and compare the quantity of the solid obtained with the one we should obtain taking into account the chemical composition of the liquid obtained via analytical measurements: Atomic Absorption and ICP mass.

Systematically we obtain that the experimental results are higher than the predicted one. The ratio of the obtained and predicted one is about 3 to 2 putting in evidence that some water remain stable until the very long treatment at 90°C.

Linear correlation is obtained between the differences of experimental weight of the solid obtained after the complete evaporation of bulky water and the predicted one depending on the chemical composition, Δmg and the conductivity in excess, namely the difference between the experimental conductivity and the one due to their chemical composition, χ_r^E .

The stabilizing process of the dissipative structures around the impurities and their ability to reproduce the physico-chemical properties after the refilling procedure have, mutatis mutandis, some similitude to the ability of some simple living systems, bacterium or a protist, to stay in a quiescent state, in environmental not favorable condition to life.

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