

Abstract

High Dilutions of Drugs show Distinct Variation from each other in their Electronic Spectra

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Abstract

Drugs at high dilution (HD) produce therapeutic effect on man, animals and plants. Experimental evidence shows that free water molecules and hydrogen bond strength of OH groups constitute the physical basis of HDs which are otherwise devoid of original drug molecules. HDs are produced in aqueous EtOH by serial dilution of a substance with mechanical agitation or succussion in each step, and are called potencies. Three potencies 6 cH, 12 cH and 30 cH of two drugs *Anacardium orientale* and *Natrum muriaticum* (NaCl) and their mother tincture (MT) are used in this study. Electronic spectra of these MTs and potencies, all in 90% EtOH, were taken in the wavelength region of 190 nm – 350 nm. The objective is to find out any additional physical-chemical entities in potencies besides the aforesaid two factors. It was reported earlier that charge transfer (CT) interaction accompanies potentization of drugs. This study focused on the CT interaction. The results indicate that spectral pattern and absorbance intensities of the test samples vary from each other. Natm 6cH (absorbance 0.30 at 196.53nm), 12cH (abs. 0.06 at 196.53nm) and 30cH (abs. 1.32 at 196.5nm). Anac 6cH (abs. 0.33 at 203nm), 12cH (abs. 0.61 at 208nm) and 30cH (abs. 0.09 at 200.67nm). The spectrum of each potency shows two peaks. The 2nd peak at higher wave length belongs to CT interaction. Anac 6cH suc, 7cH unsuc. Intersections at 197.14nm with abs. 0.05, and 290nm with abs. 0.01. Anac 12cH suc, 13cH unsuc. Intersections at 196.93nm with abs. 0.06, and 273nm with abs. 0.00. Anac 30cH suc, 31cH unsuc. Intersections at 194.42nm with abs. -0.05, 238.03nm with abs. -0.01, 252.15nm with abs. -0.002, and 261nm with abs. 0.004. Natm 6cH suc, 7cH unsuc. Intersection at 199.44nm with Abs -0.11. Natm 12cH suc, 13cH unsuc. Intersection at 200.48nm with abs. -0.11. Natm 30cH suc, 31cH unsuc. Intersection at 204.24nm with abs. -0.08. Potentization involves CT interaction in consecutive potencies. Water and EtOH do not form a homogeneous mixture and have aggregates of EtOH and water molecules. CT interactions occur in these individual aggregates and are mostly inter molecular within EtOH or water. These aggregates vary from each other in the test samples. The spectra of test samples were analysed for margin of error (MOE). The MOE is very small (0.001-0.002%), and for this reason the difference between the spectra is significant. Besides that the intersection between consecutive spectra vary in number and position. It is concluded that water and EtOH aggregates and their relative distribution constitute additional physical-chemical basis of potencies.

Key-words: High dilution, Electronic Spectra, Water, Ethanol, Charge Transfer.

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