

Physical properties of high dilutions and the corresponding biological action

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Mice bearing the protozoan *Leishmania (L) amazonensis* infection and treated with the homeopathic medicine *Antimonium crudum* (AC) 30cH presented significant reduction of the inflammation in the site of infection and clinical improvement. The mechanism was explained by *in vitro* studies, in which the treatment of infected macrophages (a kind of white blood cell) with AC 30cH produced inhibition of the parasite-induced peaks of CCL2, a protein important to increase inflammation. Moreover, AC 200cH induced a different effect, with the production of VEGF, another protein that acts as growth factor. No significant effect was seen with AC 6cH. In the following studies, a correlation between physical parameters of this remedy and its known biological effects was investigated. Examination of potency solutions using a scanning electronic microscope has shown the presence of agglomerations of microparticles (measuring 01 to 10 μ m), in AC 200cH. Measurement of the fluid conductivity of solutions made using a micro-Amperemeter has revealed that different homeopathic AC potencies, from different batches, present different variations of electric flow induced in the liquid, in relation to the control solutions, but the variations occur only with certain dilutions (30, 49, 150 and 200cH). Parallel with these investigations, the spectrophotometric method described by Steven Cartwright was applied to verify if the remedies were able to affect the dipole moment of solvatochromic dyes ET 33, BDN and Methylene violet, used as “probes” and to evaluate the suspected electromagnetic resonance between them and potencies. Potencies which had been presented to cells were also evaluated to assess whether biological samples were able to pass on potency “information”. Once again, potencies AC 30cH and 200cH increased the absorbance of these dyes, even when they were centrifuged before being tested. Centrifugation was applied to eliminate the heaviest microparticles found in AC 200cH. Therefore, the presence of these micro-particles was not necessary to induce the dye-potency resonance effect. The following experiments were performed to evaluate a potency-effect curve using the same methodology but testing raw potencies against those submitted to the interference of a weak electric flow (30 micro-Amperes) 24 hours before. The results show that AC potencies between 24 and 49CH affected the absorbance of the dye ET 33, but only AC 120 CH changed the absorbance of Methylene Violet. So, it seems that different potencies produce resonance with different dyes. Curiously, all these responses disappeared after the induction of an electric flow in the liquid. This sequence of experiments indicates that remedies have electromagnetic properties and that these properties are responsible for their interaction with the dyes. Moreover, these properties do not depend on the presence of particle agglomerates. Further experiments were performed using samples of the supernatant harvested from the cultures of infected macrophages previously treated with AC 6, 30 and 200cH. These samples were processed using the same procedures as used for the original medicines and were analyzed using the dye Methylene violet. All tested potencies presented a sharp increase of absorbance in relation to all controls (that is: supernatant from untreated cells and cells treated with succussed water), with a minimal variance. These results strongly suggest that biological systems could store and amplify the electric signal from the potencies to which they were exposed and induce resonance with the solvatochromic dye. The data, taken together, suggest that electromagnetic properties could well be involved in the biological effects of homeopathic dilutions.