

Homeopathy, Extreme dilutions and Nanoparticles

Describing it as a “fascinating observation,” a recent paper by IIT Bombay researchers has been lauded in an editorial “Do serial dilutions really dilute?” of the premier journal “Homeopathy”. The paper provides a key insight into the possible basis of Homeopathy, a scientific explanation of which has so far eluded researchers due to its use of extreme dilution, well beyond that predicted by atomic theory, by which the presence of any active starting active ingredient is ruled out. The paper entitled ‘Extreme Homeopathic Dilutions Retain Starting Materials: A Nanoparticulate Perspective’, is authored by a team from the Chemical Engineering Department of IIT Bombay consisting of Prashant Chikramane (PhD research scholar), Dr. A. K. Suresh (Professor and Dean of Faculty), Dr. S. G. Kane (Adjunct Professor and IITB alum, BTech ChE 1965 H7), and Dr. Jayesh Bellare (Professor and IITB alum, BTech ChE 1982 H3). The work was funded in part by IRCC, IIT Bombay and IITB Alumni (Sridhar Shukla BTech EE 1983 and S. G. Kane). The group built on their expertise of understanding Ayurvedic Bhasmas and the role of nanoparticles there.

The paper reports the fascinating observation that certain high potency (highly diluted) homeopathic remedies made from metals still contain measurable amounts of the starting material, even at extreme dilutions of 1 part in 10 raised to 400 parts (200C). It is well known that a series of 1:99 dilutions done sequentially will produce a significant dilution of the starting material in very short order. Specifically, if the starting material is at one molar concentration (6.023×10^{23} molecules per liter), then at about the 12th dilution (12C) there should be no or very nearly no molecules left of the starting material. At 200th dilution (200C) the likelihood of there being even one atom of the starting material approaches zero. However, dilution does not work so simply, according to this paper. Using electron microscopy (TEM), electron diffraction, and atomic spectroscopy, Chikramane et al. found that, contrary to the arithmetic, there are nanogram quantities of the starting material still present in these ‘high potency’ remedies in the form of nanoparticles.

Chikramane PS, Suresh AK, Bellare JR, Kane SG (2010). Extreme homeopathic dilutions retain starting materials: a nanoparticulate perspective. *Homeopathy* 2010; 99: 231-242. Web: <http://www.sciencedirect.com/science/article/B6WXX-518T4YP-3/2/6e6eb3920562d5d97e2a4671f0416546>

John A Ives, Wayne B Jonas and Joyce C Frye, Do serial dilutions really dilute? Guest Editorial *Homeopathy* 2010; 99: 231-242. Web: <http://www.sciencedirect.com/science/article/B6WXX-518T4YP-2/2/dfec73836f07c62e6863aaaaa5f6ea08>

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