Conference presentation

Drugs in ultra-high dilution induce changes in the enthalpy associated with loss of crystallization water in lactose

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Abstract

Drugs in ultra-high dilution (UHD) are used in homeopathy. Lactose is used as a binding medium for UHD drugs. FTIR and Raman spectroscopy revealed that although devoid of molecules of the starting substance, different UHD drugs exhibit different amounts of free water molecules and variation in hydrogen bond strength. The aim of the present study was to establish whether specific water structures in UHD could specifically modify the water structure in lactose, particularly the water of crystallization. 3 UHD's (potencies), 30cH, 200cH and 1000cH, of 2 drugs, *Natrum muriaticum* and *Sulphur* were mixed to lactose samples separately. Differential scanning calorimetry (DSC) of the samples was measured. The thermograms of potencies mixed to lactose differed from each other with respect to temperature and enthalpy associated with the removal of water of crystallization from lactose. We believe that the tested UHD modified the water structure in lactose thereby changing the enthalpy for the removal of water of crystallization. Different levels of thermal energy are needed to remove both free water molecules and water of crystallization from lactose. UHD's also contributed to the change in enthalpy associated with the removal of water of crystallization from lactose. The tested UHD might have modified the number and strength of hydrogen bonds in the crystal structure of lactose. Specific water structures in liquid aqueous ethanol medium are transferable to the solid medium (lactose).

Keywords: homeopathic drugs, DSC, lactose, water of crystallisation

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