AquaLaurin (Aqua-GML) Uses in BioMedicine

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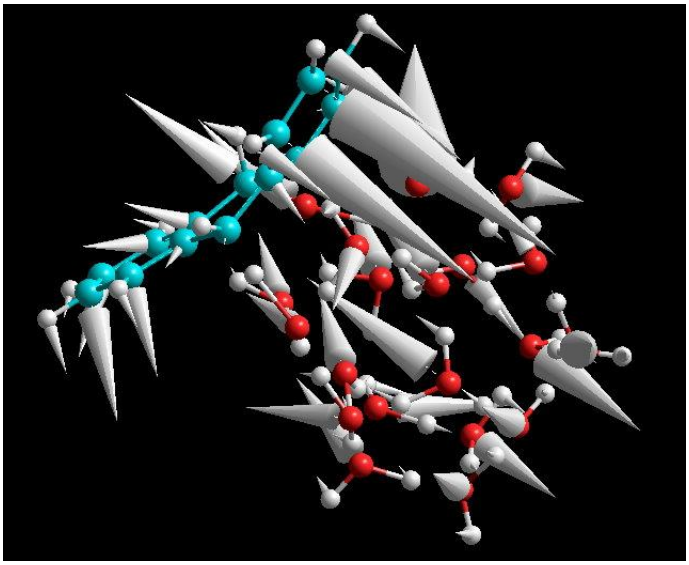
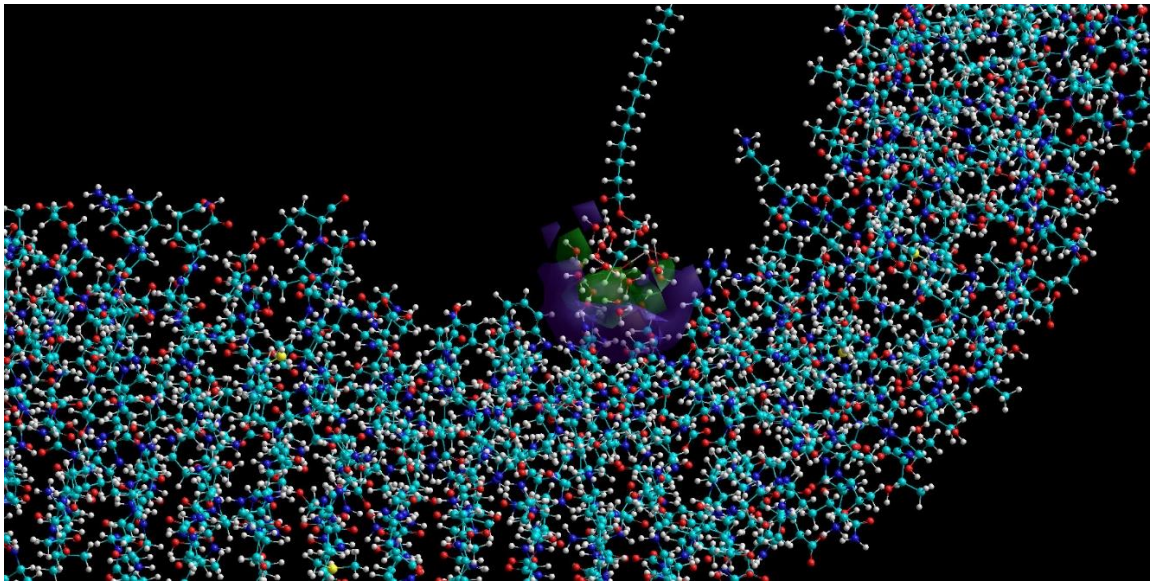
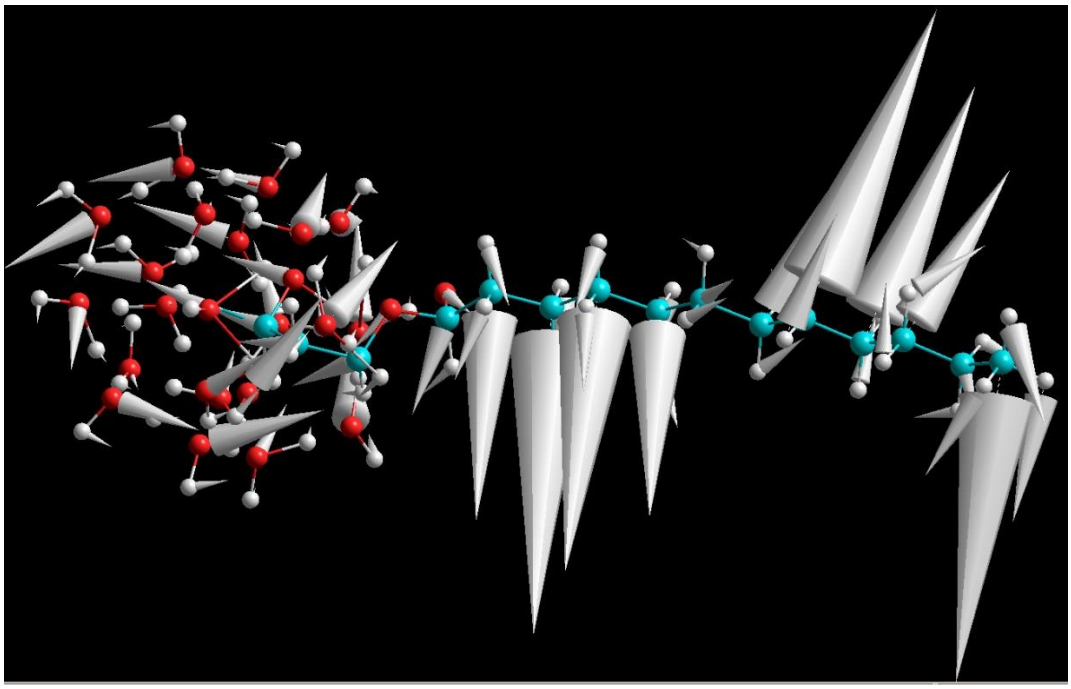
In US Patent 5800576, *Water Clusters and Uses Therefor*, Johnson *et al.* showed how water-in-oil nanoemulsions break down carcinogenic molecules by forming inverse micelles composed of water nanoclusters attached to the polar ends of proprietary surfactants. This occurs through the terahertz vibronic interaction of the water nanoclusters with the target molecules, as illustrated for anthracene below:



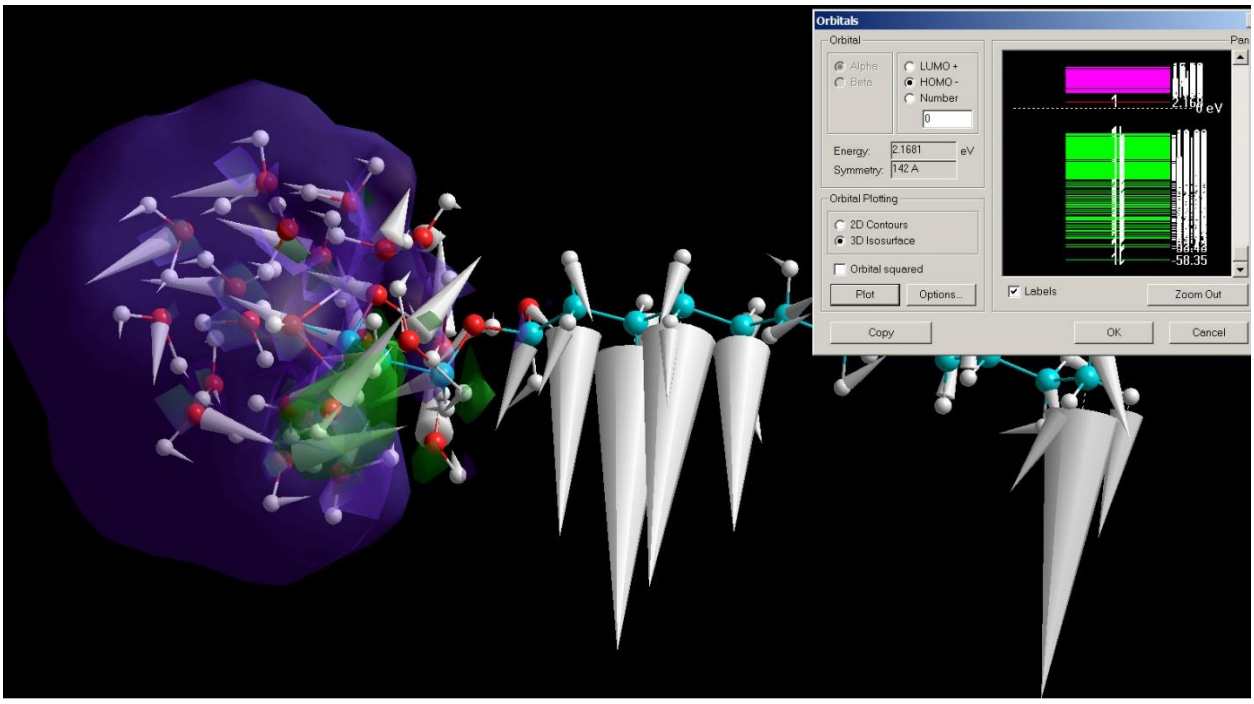
It has been demonstrated that AquaLaurin (Aqua-Glycerol-Monolaurate) breaks down the dangerous biofilms formed by pathogenic bacteria responsible for diseases ranging from Lyme to Dementia economically and without side effects. This occurs by a molecular vibronic mechanism analogous to that shown above in US Patent 5800576, as illustrated below for the interaction of AquaLaurin with a typical biofilm:



Closeup, we see how this occurs for the water nanocluster attached to the polar end of GML, where the composite molecule vibrates at the biofilm resonant frequency of 1.5 THz:



The electrons located on the water nanocluster surface:



are transferred to otherwise empty “antibonding” biofilm electron states that break down the biofilm. The Aqualaurin can be delivered in solution or as a micro/nanoemulsion, and it has the further advantage of being capable of carrying other beneficial drugs to the infected cells.