

Study of 'Ouzo effect' may lead to design of improved drugs, cosmetics

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Scientists studying the cloudy emulsions produced by anise-flavored liquors such as Ouzo have discovered new molecular insights into their formation, findings that could lead to the design of better commercial emulsions used in making pharmaceuticals, food products, cosmetics and other materials. Their study is scheduled for the Feb. 19 issue of ACS' *Langmuir*.

Although transparent when bottled, Ouzo, Pastis, Pernod, and other popular anise-flavored alcoholic beverages form milky-white emulsions when diluted with water prior to drinking, a phenomenon commonly known as the "Ouzo effect." These emulsions occur spontaneously and are stable for weeks and even months, a feature that is attractive to industry. However, scientists are unclear how these mixtures form and stabilize.

In the new study, Erik van der Linden and colleagues measured the stability of various emulsions prepared from commercial Pernod and compared the results to theoretical predictions of their formation. The scientists found that their experimental observations were often opposite the predicted behavior of the emulsions in the presence of various concentrations of oil, water, and alcohol components. "More knowledge of the parameters that determine the stability of these emulsions, besides interfacial tension, solubility, and density difference, might lead to better control of the emulsification process," the study states.

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