



Bye-Bye Heat, A New Approach to Protein Gelation

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Gelation is one of the main functions of food protein. A protein gel forms when protein-protein interactions develop into a continuous 3D protein network which immobilizes the liquid phase. Heat is considered to be the most common method used for gelation. Protein gelation has high commercial interest in development of new food products with desired texture in addition to forming hydrogels for controlled delivery of bioactive substances such as vitamins. In particular, the protection and controlled delivery of water insoluble vitamins via gel matrix is of huge interest as this class of vitamins is subjected to degradation by heat and light. However, the conventional gelation method may damage these heat sensitive compounds. Thus the investigation of novel delivery systems for heat sensitive materials is required to improve their delivery and bioavailability in the body. This image demonstrate a whey protein gel formed using a simple and novel solvent gelling method at room temperature. The aim of my research is to gain an understanding of a solvent gelation mechanism of different types of proteins (plant and animal) to utilize them as a delivery vehicle for heat sensitive compounds.