Preparation and Modification of Pectin Nanorods

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We prepared pectin nanorods via a low-temperature inversed emulsion process by using methacrylate-modified pectin. The nanorods had a diameter of about 50nm and a length of a few hundreds nm. The formation of nanorods was explained by the egg box model in which calcium ions and pectin molecules were strongly associated. To enhance the stability, nanorods were further chemically crosslinked by using a water soluble initiator. It is anticipated that the control over several parameters such as concentrations, solvents, reaction temperature and time improve the physicochemical properties of pectin nanorods, suggesting applications to biology, medicine, and cosmetics. Acknowledgments: This work was funded by the Korea Research Foundation (2012-047716) and the Ministry for Health and Welfare (A10301712131330200).