

Versatile oleic acid-based nanocarriers: characterization and applications

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Oleic acid (cis-9-octadecenoic acid, OA) is the most abundant monounsaturated omega-9 fatty acid in dietary fats and oils. In the last years, several researchers reported its modulatory effects on a wide range of physiological functions and on human health. OA is one of the major constituents of the membrane phospholipids and it is highly concentrated in myelin. Furthermore, several studies suggest a beneficial effect on cancer, autoimmune cardiovascular and inflammatory diseases, besides its ability to facilitate wound healing. Interestingly, OA shows pH-sensitive properties, due to the presence of a carboxylic acid group presents in the hydrophobic segments and it could be used to formulate different amphiphilic-based nanocarriers in order to take advantage from the many beneficial effects of OA. Aim of our studies is to develop and characterize different pH-sensitive surfactant-based nanocarriers, containing OA, in order to evaluate their therapeutic application.