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Nanostructured Biomaterials for Medical and Biological Applications

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Nanostructured materials have been developed for various medical and biological applications. They have been designed as stimuli-responsive drug delivery systems and sustained protein delivery systems. Nanocomposite systems have also been derived to provide simultaneous drug delivery and bioimaging functions as theranostic systems. Micellar nanocomplexes have been synthesized with green tea-based ingredients as unique carrier materials that offer synergistic therapeutic effects with the drugs to be delivered.

In addition, nanostructure processing has been employed in creating synthetic cell culture substrates for the expansion and controlled differentiation of stem cells. Nanostructured scaffolds have also been obtained for cell and tissue engineering.