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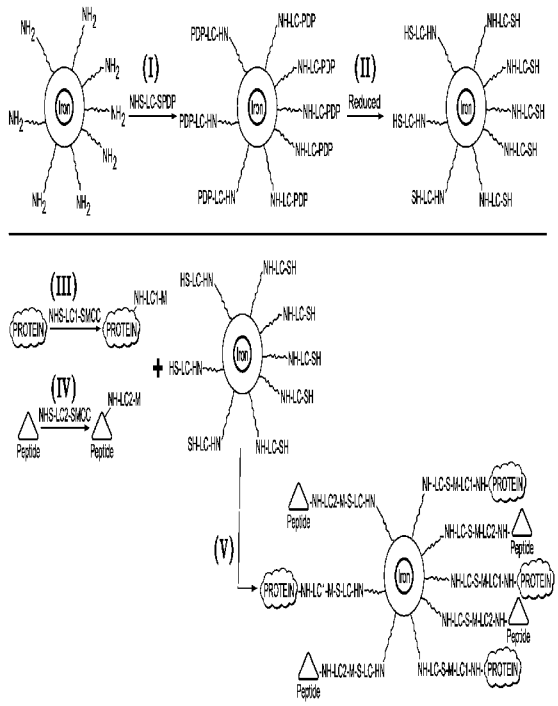
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(54) Title: FUNCTIONALIZED NANOPARTICLES FOR INTRACELLULAR DELIVERY OF BIOLOGICALLY ACTIVE MOLECULES



(57) Abstract: Functionalized biocompatible nanoparticles capable of penetrating through a mammalian cell membrane and delivering intracellularly a plurality of bioactive molecules for modulating a cellular function are disclosed herein The functionalized biocompatible nanoparticles comprise: a central nanoparticle ranging in size from about 5 to about 50 nm and having a polymer coating thereon, a plurality of functional groups covalently attached to the polymer coating, wherein the plurality of bioactive molecules are attached to the plurality of the functional groups, and wherein the plurality of bioactive molecules include at least a peptide and a protein, and wherein the peptide is capable of penetrating through the mammalian cell membrane and entering into the cell, and wherein the protein is capable of providing a new functionality within the cell. The protein may be a transcription factor selected from the group consisting of Oct4, Sox2, Nanog, Lin28, cMyc, and Klf4.

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