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Luca Scotti

University G. d'Annunzio Chieti Chieti-Pescara, Italy

SUNc Silver (I,II,III) Ultra Nano Clusters for Biomedical applications

The divalent silver in a square-planar oxygen environment was unknown before 1984 and for the first time there is evidence of these compounds. Silver oxide has a number of important applications (biomedical, sensor technologies, antibacterial applications, ...). In our laboratory with a special method (EP 18181873) we have synthesized a Silver Ultra Nano Cluster and its characterization, stability and applications are now reported. These nanoclusters have evidence of a singular structure and characteristics, like to the silver oxides (II, III) as reported in the literature. In this preparation Nanoclusters are presented a non spherical shape and a medium size very small (< 2 nm) the core of nanoclusters are composed by silver metal and coated with silver oxide in diverse oxidation state (I,II,III) and different legant with oxygen (peroxide). The characterization of the nanoclusters required the following analysis techniques :MALDI, UV-Vis, IR, DLS, ZetaPals, XRD, TEM, SEM. The microbiological applications make evidence of bactericidal and bacteriostatic effect more important than silver nanoparticles (0,6 ug vs 5 ug) tested in other experiments if compared with same microorganism. The toxicity and effect in vitro for eucariotic cells are reported and the value founded confirmed the same level toxicity and no more of silver metal (Ag). Future investigation are necessary for understanding the action mechanism in vitro and possible applied technology for biomedical and nanotech applications

Biography

Luca Scotti has completed BsC in chemistry at Milan University (Italy) and his PhD in biomedical science at University of Chieti (2012). At present is researcher of Department of Medical and Oral science at University of Chieti. Many years of research have been spent in synthesis chemistry and in nanotechnology. He has published more than 25 papers in reputed journals and has been serving as an editorial board member of reputed.

l.scotti@unich.it

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