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LIFE SCIENCES **SCHEDA BREVETTO NUMERO 26**

TITOLO

Materiali nanocompositi basati su nanoparticelle metalliche stabilizzate con polisaccaridi a struttura ramificata

Nanocomposite materials based on metallic nanoparticles stabilized with branched polysaccharides

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INVENTORI

Sergio Paoletti, Ivan Donati, Eleonora Marsich, Andrea Travan

TITOLARI

Università degli Studi di Trieste 100%

DESCRIZIONE E SETTORI DI APPLICAZIONE

La presente invenzione è relativa a materiali nanocompositi formati da nanoparticelle metalliche stabilizzate in una matrice di polisaccaridi basici a struttura ramificata, alla loro preparazione ed al loro uso per applicazioni in campo biomedico, farmaceutico ed alimentare.

The present invention provides nanocomposite systems made of metallic nanoparticles stabilized with branched cationic polysaccharides, in particular alditolic or aldonic mono- and oligo-saccharidic derivatives of chitosan, and their preparation obtainable with aqueous solutions of these polysaccharides in the presence or absence of reducing agents. The peculiar chemical and physical-chemical features of these polysaccharides allow to form metallic nanoparticles homogeneously dispersed in the polysaccharidic matrix and an effective stabilization thereof. The properties

associated with the nanometric dimensions and the presence of biological signals on polymeric chains may be exploited in applications with antimicrobial activities and of molecular biosensors.

VANTAGGI

The nanocomposite material obtained has metallic nanoparticles that are stabilized and size-controlled and the properties of which are particularly suitable for applications in biomedical and optical (biosensors) field.
Such a nanocomposite material is obtainable by means of a non- complex and economically advantageous chemical approach, and in particular by colloidal solutions in which metallic nanoparticles are stabilized by appropriate polysaccharidic solutions.
Systems are totally soluble in aqueous systems in the conditions of neutral pH and substantial ionic strength that are required in biomedical applications.

STATUS

Concesso in Italia

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