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TITLE

System of correlative light electron microscopy /immunogold probes for bioimaging

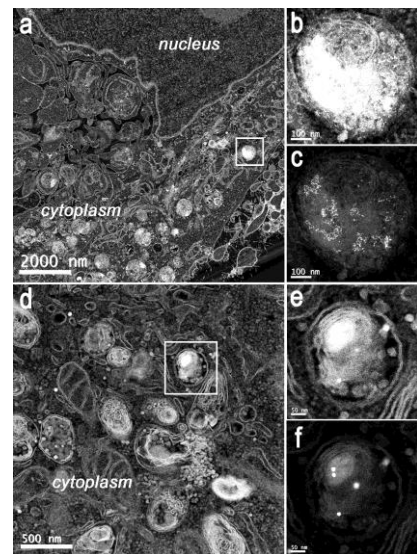
INVENTORS

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DESCRIPTION

The invention deals with a probe constituted of platinum nanoparticles (PtNPs) inherently fluorescent (quantum dots) or functionalized with several biological molecules and fluorescent markers, among which fluorophores, proteins, peptides or antibodies. The probe is based on the inherent activity horseradish peroxidase-like of the PtNPs in presence of H_2O_2 and a substrate. The oxidation of a 3,3'-Diaminobenzidine (DAB) substrate leads to its polymerization, in proximity of the nanomaterial, which results in an osmiophilic precipitate. This precipitate significantly amplifies the electron-dense signal of the nanoparticles, thus making them highly visible in electron microscopy analysis.

Hence, the PtNPs of the invention, if properly functionalized, can be employed as CLEM probes to follow with a nanometric resolution the sub-cellular location of the biological molecules of interest.



APPLICATIONS

fluorescence microscopy, electron microscopy, correlative light electron microscopy (CLEM) imaging

KEYWORDS

CLEM probes, immunohistochemistry, Pt nanoparticles, peroxidase activity, 3,3'-Diaminobenzidine (DAB)

BIBLIOGRAPHIC DATA

Metodo di imaging di un campione biologico e relativa sonda

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