

Carbogenic Fluorescent Nanodot As New Probe For Super Resolution Microscopy And Method Of Application Thereof

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ABSTRACT

Present invention relates to new class of nanomaterials, carbogenic fluorescent nanodots (FNDs) as a universal probe for Super Resolution Microscopy (SRM); the method of synthesis and purification of such fluorescent nanodots (FNDs) and the method of its conjugation for use in SRM. FNDs are ultra-pure and these could be used for specific attachments with any organelles in the cell for super resolution imaging. Said Carbogenic fluorescent nanodots (FNDs) as probe for SRM is characterized in its properties namely superior photostability, high quantum yield, aqueous solubility and non-toxic, and safe storage for a longer period of time at room temperature without losing its fluorescent properties.

KEY APPLICATION AREAS

- 1.Super-resolution microscopy (SRM).
- 2.Fluorescence bioimaging.
- 3.Cellular and organelle imaging.
- 4.Actin filament labeling.
- 5.Nano-bio probes and biosensing.
- 6.Advanced optical microscopy.

POTENTIAL USES

- 1.Ultrahigh-resolution imaging of cells.
- 2.Fluorescent labeling of biomolecules.
- 3.Live-cell and fixed-cell imaging.
- 4.Imaging of cytoskeletal structures.

5. Low-toxicity alternatives to organic dyes and quantum dots.
6. Long-term photostable fluorescence imaging.