Are Fluorescent Organic Nanoparticles Relevant Tools for Tracking Cancer Cells or Macrophages?

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Resumen

Strongly solvatochromic fluorophores are devised, containing alkyl chains and enable to self-assemble as very bright fluorescent organic nanoparticles (FONs) in water (Phi(f) = 0.28). The alkyl chains impart each fluorophore with strongly hydrophobic surroundings, causing distinct emission colors between FONs where the fluorophores are associated, and their disassembled state. Such color change is harnessed to assess the long-term fate of FONs in both cancer cells and monocytes/macrophages. Disintegration of the orange-emitting FONs by monocytes/macrophages is evidenced through the formation of micrometer green-yellowish emitting vesicles. By contrast, cancer cells retain longer the integrity of organic nanoparticles. In both cases, no significant toxicity is detected, making FONs as valuable bioimaging agents for cell tracking with weak risks of deleterious accumulation and low degradation rate.

Palabras clave

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