Abstract

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Nanoparticles and Quercetin Synergize with NIR Laser for Covid-19 Infectious Diseases Treatment

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Abstract

This work shows that novel virus-like mesopore silica-zinc oxide/Ag nanoparticles (SZnOAg) synthesized and professionally collected on NIR laser irradiation with quercetin to improve their effectively eliminates the virus as a biomedical application. The properties of the nanoparticles can be tuned with respect to their core diameter, tubular length, and outer diameter. Due to their biomimetic appearance, they can rapidly transform living cells into virus-like particles, this SZnOAg nanomaterials has specific elimination effect on bacteriophage and covid-19. Using epitaxial growth, we can construct virus-like structures that can be used for biomedicine applications. These nanomaterials and NIR laser could open the way to a new range of antiviral materials, due to the low-efficiency cellular uptake of current nanoparticles, their applications in the biomedical field are limited. Herein, it clearly shown that novel mesoporous silica nanoparticles can be easily exhibited superior cellular uptake property.

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Biography

The winner of PhD graduate research award in applied sciences for postgraduate research project from Kuwait University 2013/2014. Participated in the “International Conference on Chemistry and Chemical Engineering” (ICCCE-2015) September 14-16, 2015, Dubai- United Arab Emirates.Participated in the 2nd Kuwait Oil & Gas Show and Conference 2015.The winner of Kuwait National Petroleum Company KNPC-8th CEO Annual HSE improvement performance, 2015.The winner of best paper award certificate from TJPRC “International Journal of Nanotechnology and Application”, 2015, with paper titled “Synthesis of Smectic and Discotic Liquid Crystals Derivatives by Flow Injection System”.The winner of Energy Globe National Award 2016 "Polymer for Climate Protection".Participated in 27th International Conference on Organometallic Chemistry ICOMC, "High surface area anthracene-based microporous polymer bridged by imide links for H2 storage", 17-22 July 2016, Melbourne, Australia.Participated in ISERD- 199th International Conference on Chemical and Biochemical Engineering (ICCBE) Kuwait City, Kuwait. Paper Title: Smart Synthesis of Microporous Polymers by Flow Injection method For CO2 capture. 29th-30th June 2017.Participated in7th World Congress on Biopolymers and Polymers Chemistry, June 04-06, 2018, Osaka, Japan.The winner of Excellence in Reviewing Certificate from the Annual Research & Review in Biology 2020. The winner of the best researcher award of international scientist awards 2021 on engineering science and medicine