

9th European Chemistry Congress

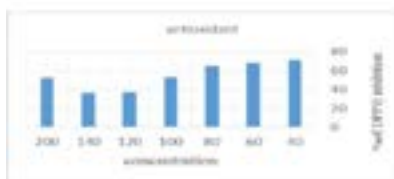
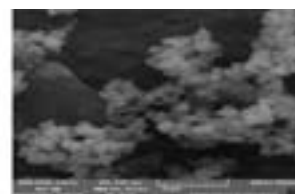
June 17-18, 2019 | Berlin, Germany

Enhance antioxidant activity of Curcumine-loaded mesoporous silica via silver nanoparticles

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The research field of nanoporous materials is an interesting and exciting topic with researchers involved called M41S periodic mesoporous silica were discovered in 1990s. They have high surface areas and long-range ordered pores, which is beneficial for many application of this nanomaterials activity. Mesoporous silica nanoparticles MSN is an ideal nanocarrier for drug delivery system due to non-toxic nature, high pore volume, no concerns with chemical or biological safety, the ability to functionalize the surface, and good biocompatibility. MSN release can be operated by variety of methods such as, ray radiation, exposed to a specific molecule or pH or temperature. Curcumin has many biological activity extends to anti-cancer effects, pancreatic, breast, prostate, multiple myeloma, lung cancer, cancer lesions. Additionally, curcumin has proper effects against inflammation and infection related ailments like inflammatory bowel disease, irritable bowel syndrome, arthritis, uveitis, post-operative inflammation, peptic ulcer. The major limitation of curcumin is low solubility in water. Curcumin administered at 2g/kg in rat resulted in serum concentration of $1.35 \pm 0.23 \mu\text{g/mL}$. The water solubility is at nano molar concentration. Another weakness of curcumin is instability at pH 7.4 and half-life time for 20 min. The curcumin absorb by cells is limited and lesser concentration of cytoplasm. In this study, we are functionalized curcumin on the mesoporous nanoparticles and then supported Silver nanoparticles on this nanocomposite and investigated its antioxidant properties. Studies have shown that due to the high surface area of mesoporous and the successful modification of curcumin on its surface and synergistic effect of nanoparticles and nanoporous as well as curcumin, it has been shown enhanced anti-oxidant properties than curcumin. The MSN-CURC-Ag showed a higher DPPH radical-scavenging activity with the lowest 50% inhibitory concentration.

**Figure 1:** DPPH radical-scavenging activity**Figure 2:** XRD of MSN-CURC-Ag**Figure 3:** SEM of MSN-CURC-Ag

Biography

Rasoul Bolghar has graduated bachelor period in applied chemistry and master's degree in Nanoscience and is currently studying in Ph.D. in organic chemistry.

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