POSTER PRESENTATION



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Preliminary characterization of N-trimethylchitosan as a nanocarrier for malarie vaccine

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Vaccination is considered to be most effective way of fighting infectious diseases like malaria etc [1]. N, N, N-trimethylchitosan (TMC) was synthesized from chitosan. Nanoparticles of the TMC were prepared in various media (milliQ water, Na₂CO₃ (pH 10.92), Na₂HPO₄ (pH 9.01) and alhydrogel[®] beads which were characterized as adjuvant for possible vaccine delivery. The nanoparticles were analyzed using microscopy (Phase contrast microscope and Confocal laser scanning microscope), and Malvern zetasizer Nano- ZS. Time-resolved particle size analysis was performed after one month storage of the TMC nanoparticles at 4 °C. The result of the study showed that PBS was the best medium that produced cationic, monodispersed and stable TMC nanoparticles of less than 65 nm forming a compatibly homogeneous system even upon storage. Microscopy of the polyelectrolyte doped nanoparticles showed a clear coating due to PSS at the periphery of the particles and a fluorescent core with some tiny central hollow cavities Confocal microscopy of the alhydrogel beads showed particle size of 1.6 µm. The fluorescent dye (PSSRhodamine) coated the entire particle surface suggesting a more or less adsorption process for the antigen delivery [2]. Hence, the hope of nanocarrier for malaria vaccine.

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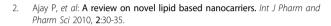
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References

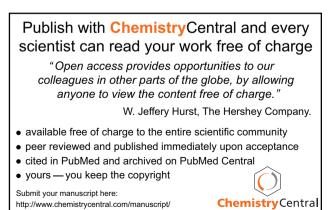
 Kammona O, et al: Nanocarrier Aided Nasal Vaccination: An Experimental and Computational Approach. Ind Eng Chem Res 2011, 50:590-601.

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