

# International Conference on Nanomedicine and Drug Delivery

Journal of Nanomedicine &amp; Nanotechnology Volume: 12

August 02-03, 2021 | Webinar

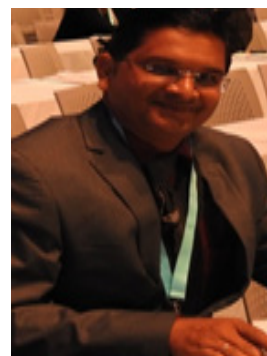
## Antibody Coated Liposomal construct for Transmucosal Vaccination Through Nasal Route

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The aim of the present investigation was to evaluate the prospective of surface-engineered vesicular carriers for mucosal immunization via the nasal route. IgG antibody was immobilized on the surface of hepatitis B surface antigen (HBsAg) antigen-loaded liposomes.

The developed formulations were characterized on the basis of physicochemical parameters, such as morphology, particle size, polydispersity index, entrapment efficiency, and zeta potential. Liposomal formulations were then evaluated for in-process antigen stability and storage stability. In vivo studies were conducted to visualize targeting potential, localization pattern, and immunogenicity. In addition, immune response was compared with alum-HBsAg vaccine injected intramuscularly.



The serum anti-HBsAg titer, obtained from the postnasal administration of IgG-coupled liposomes, was significantly higher than plain liposomes. Moreover, IgG-coupled liposomes generated both humoral (i.e., systemic and mucosal) and cellular immune responses upon nasal administration, while the alum-adsorbed antigen displayed neither cellular (cytokine level) nor mucosal (IgA) response. The formulation also displayed enhanced transmucosal transport, improved in vitro stability, and effective immunoadjuvant property. To conclude, IgG antibody-coupled liposomes may serve as novel carriers to augment the secretory immune response of antigen encapsulated in the liposomes, apparently by escalating liposome uptake via M cells, thereby rationalizing their use as a carrier adjuvant for nasal subunit vaccines.

**Keywords:** Immunoglobulin, IgG, liposome, HBsAg, M cell

### BIOGRAPHY:

**Tiwari BK**, has been a Registered Pharmacist for 14 years and a academician since 12 years. He was awarded best poster award in national seminar held Bilaspur and Best oral presentation in IPA convention 2011 held at indore. He has been awarded so many time for presentation in many international conferences and seminars in India as well as in abroad. His research areas include exploiting nanotechnological principles and employing concept of targeting in bioactive delivery against infectious disease. In addition he has a number of publications in international journal of high repute. He is also editor as well as reviewer of many international journals.

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