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VIRUS LIKE PARTICLES AS A SCAFFOLD FOR MENINGOCOCCAL VACCINE DEVELOPMENT

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Neisseria meningitidis **is a Gram-negative bacterium and causative agent of life-threatening meningococcal disease in humans (meningitis and septicaemia). The conventional approach of capsular polysaccharide (CPS) usage as a platform for meningococcal vaccines' development has been very effective with serogroups A, C, W135 and Y, but limited effect with serogroup B (MenB) due to antigenic similarity of its CPS with human antigen. A well-studied virus-like particle (VLP), Hepatitis B core antigen (HBcAg) was used as a scaffold to incorporate meningococcal surface antigens. The VLP-antigen fusion proteins were expressed, purified and characterized by SDS-PAGE analysis, circular dichroism and transmission electron microscopy. Uptake of the VLP-antigen fusion proteins by THP-1-derived dendritic cells and macrophages was carried out *in vitro*. Intracellular co-localization and upregulation of surface markers were assessed by cell culture, ImageStream and FACS analysis. The VLP-antigen proteins were shown to be taken up by clathrin-mediated endocytosis and macropinocytosis and co-localized in lysosomes. They also significantly stimulate higher upregulation of HLA-DR, CD80, CD206 and CD209 on macrophages compared to the antigen alone.**

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