

Abstract

A composite particle comprising at least two polypeptides corresponding to all or part of a protein having the biological activity of one of the hepatitis B surface antigens, wherein the particle presents at least two antigenic determinants provided by the S-protein, preS2-protein or preS1-protein, said particle optionally further comprising host specific lipids. The invention also provides a modified hepatitis B surface antigen L protein which may be used alone or incorporated into such composite particles.

A particular embodiment of the modified L protein (L*) comprises residues 12-52 followed by residues 133-145 followed by residues 175-400 of the L protein and a particular embodiment of a composite particle has the form (L*, S) where S is the S-protein of HBsAg.

Improved hepatitis B vaccines may be prepared following expression of the above immunogens, especially in yeasts such as S. cerevisiae and Hansenula polymorpha.

