ABSTRACT

Novel, nanoparticle-based vaccines are provided that elicit an immune response to a broad range of infectious agents, such as influenza viruses. The nanoparticles comprise a heterogeneous population of fusion proteins, each comprising a monomeric subunit of a self-assembly protein, such as ferritin, joined to one or more immunogenic portions of a protein from an infectious agent, such as influenza virus. The fusion proteins self-assemble to form nanoparticles that display a heterogeneous population of immunogenic portions on their surface. When administered to an individual, such nanoparticles elicit an immune response to different strains, types, subtypes and species with in the same taxonomic family. Thus, such nanoparticles can be used to vaccinate an individual against infection by different Types, subtypes and/or strains of infectious agents. Also provided are specific fusion proteins, nucleic acid molecules encoding such fusion proteins and methods of using nanoparticles of the invention to vaccinate individuals.

[Figure 1]