

BioCarrier™—A Novel Molecular Carrier from Newcastle Disease Virus

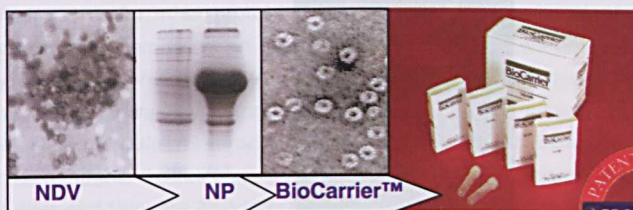


Various kinds of carrier molecules have been used to deliver nucleic acids, drugs, vaccines and other important compounds. We have developed a molecular carrier for immunogenic peptides, which can be used for the development of multi-component vaccines, diagnostic reagents and the delivery of novel therapeutics or drugs (Malaysian Patent Pending: PI 20004837 and PI 20021709; US Patent Application No. 09/970,851).

Award Winner

We have discovered that the nucleocapsid protein of a local Malaysian poultry virus (Newcastle disease virus) produced in *Escherichia coli* assembles into ring-like and herringbone-like particles. It is possible to manipulate the lengths of these particles by genetically engineering one end of this nucleocapsid protein.

In addition, these particles can be fused with foreign polypeptides. Some of the advantages of this carrier molecule are its ability to increase the solubility of proteins, deliver immunogenic peptides or proteins in animals, as well as aid the purification of specific protein molecules.



BioCarrier™: A novel molecular carrier from Newcastle Disease virus—Solutions to protein



Several fusion proteins have been constructed. These include the antigenic regions of the Newcastle disease virus, Nipah virus, hepatitis B virus, enterovirus virus 71, chicken anemia virus, and infectious bronchitis virus. Chickens inoculated with these particles mounted an immune response against the foreign peptides, supporting the use of these particles as carriers for immunogens in the development of multi-component vaccines and immunological reagents.

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