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# Product Information

## Human Papillomaviruses Type 16 Virus-like Particles (HPV16 VLPs)

Cat. No.: **VLP-009YF**
This product is for research use only and is not intended for diagnostic use.

Recombinant Human Papillomaviruses Type 16 Virus-like Particles (HPV16 VLPs) are produced in Baculovirus/Insect cell expression system, assembled with L1 major capsid protein. VLP is mimicking the native 3D structure of viruses which can elicit strong immune responses. However, VLPs lack viral genomic material which makes them non-infectious, unable to replicate and enhance the safety during manufacture and administration. HPV16 VLPs can be used in the development of HPV16 diagnostics and in vaccine development and R&D (including use as an immunogen).

## Product Specifications

### Structural Proteins

L1 protein

### Expression Systems

Baculovirus/Insect cell expression system (please specify if other expression system is needed)

### Form

Liquid

### Alternative Names

Human Papillomaviruses Type 16 Virus-like Particles; HPV16 VLPs; HPV 16; Human Papillomaviruses Type 16; VLP; Virus-like particle

### Storage

Store at -80 °C long term. Avoid repeated freeze/thaw cycles.

## Virus Background

### Virus Family

Papillomaviridae

### Virus Species

Human Papillomaviruses Type 16

### Virus Overview

Human papillomavirus (HPV) is a small, non-enveloped deoxyribonucleic acid (DNA) virus that infects skin or mucosal cells. The circular, double-stranded viral genome is approximately 8-kb in length. The genome encodes for 6 early proteins responsible for virus replication and 2 late proteins, L1 and L2, which are the viral structural proteins. At least 13 of more than 100 known HPV genotypes can cause cancer of the cervix and are associated with other anogenital cancers and cancers of the head and neck. The two most common "high-risk" genotypes (HPV 16 and 18) cause approximately 70% of all cervical cancers. HPV was estimated to cause almost half a million cases and 250,000 deaths from cervical cancer in 2002, of which about 80% occurred in developing countries. Results showed that expression of L1 alone led to the production of virus-like particles (VLPs) which morphologically resemble the authentic HPV virions but contain no viral DNA. These VLPs are produced by self-assembly of the L1 protein when expressed in a heterologous

cell substrate. HPV VLPs are highly immunogenic in mice or rabbits, and the resulting antibodies have been shown to be neutralizing and type restricted when tested in a pseudovirion neutralization assay.

**Virus Structure**

Non-enveloped, double-stranded DNA virus

**Related Disease**

Cervix caner; Head and neck caner

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