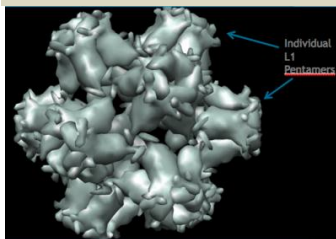
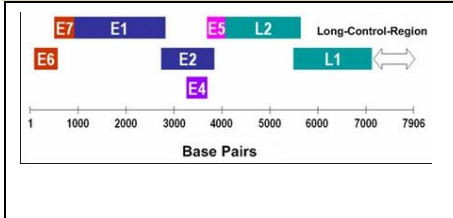


Human Papilloma Virus Vaccines Antibody ELISA Kits, Recombinant Proteins, Peptides and Antibodies

Human papillomavirus (HPV) is a virus from the papillomavirus family of viruses that is capable of infecting humans. Like all papillomaviruses, HPVs establish productive infections only in keratinocytes of the skin or mucous membranes. While the majority of the nearly 200 known types of HPV cause no symptoms in most people, some types can cause warts (verrucae), while others can lead to cancers of the cervix, vulva, vagina, and anus in women or cancers of the anus and penis in men. HPV infection is a cause of nearly all cases of cervical cancer. Over 120 HPV types have been identified and are referred to by number. Types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, and 59 are "high-risk" sexually transmitted HPVs. Two vaccines are available to prevent infection by some HPV types: **Gardasil**, marketed by Merck, and **Cervarix**, marketed by GlaxoSmithKline. Both vaccines utilize recombinant L1 proteins and protect against initial infection with HPV types 16 and 18, which cause most of the HPV associated cancer cases. Gardasil also protects against HPV types 6 and 11, which cause 90% of genital warts.

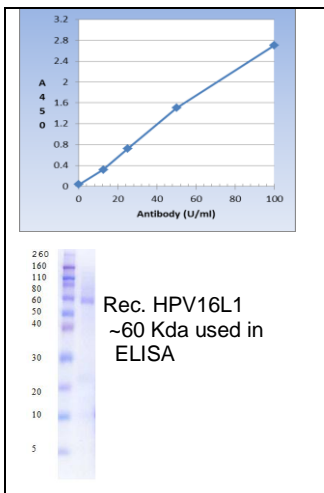


Gardasil is also effective in males, providing protection against genital warts, anal cancer, and some potentially precancerous lesions caused by some HPV types. An ongoing study of males demonstrated the efficacy of Gardasil in males who did not have HPV infection prior to vaccination. The vaccination is expected to protect against penile cancer and anal cancer caused by included HPV types, and research in this area is ongoing. The HPV genome (dsDNA of ~8000 base pairs) is composed of six early (E1, E2, E3, E4, E6, and E7) and two late (L1 and L2) proteins. After the host cell is infected E1 and E2 are expressed first. In the upper layers of the host epithelium, the late genes L1 and L2 are transcribed/translated and serve as structural proteins that encapsidate the amplified viral genomes. The papillomavirus capsid also contains a viral protein known as L2, which is less abundant. L2 is of interest as a possible target for more broadly protective HPV vaccines. HPV06 L1 (protein accession #CAU03682.1, 501-aa), HPV11 L1 (protein accession #CCB84764, 503-aa) HPV16 L1 (protein accession #ACA14209; 531aa/505-aa), HPV18 L1 (protein accession #AAP20601; 568-aa/427-aa).

Gardasil contains recombinant VLPs assembled from the L1 proteins of HPV types 6, 11, 16 and 18. Since VLPs lack the viral DNA, they cannot induce cancer. They do, however, trigger an antibody response that protects vaccine recipients from becoming infected with the HPV types represented in the vaccine. The L1 proteins are produced by separate fermentations in recombinant *S. cerevisiae* and self-assembled into VLPs.

ADI has cloned, expressed, and purified HPV L1s from HPV6, HPV11, HPV16, and HPV18 viruses. Specific antibody ELISA kits have been developed to test the efficacy of existing (Gardasil/Cervarix) or new HPV vaccines. ADI is further expanding the antibody ELISAs to measure IgG (and IgG1, IgG2a, IgG3, IgG4) and IgM classes.

Human papilloma virus vaccine Related ELISA kits



HPV Vaccine Anti-HPV16L1 IgG ELISA General Design

- Highly purified recombinant HPV L1s protein (HPV6/11/16/18) coated plates; Stability ~6-12 months
- Anti-HPV L1 IgG (HPV6, 11, 16, 18L1) controls at 100 u/ml allows quantitative antibody assay
- Samples 100 ul (1:100 or more) 3 incubations at room temp (60+30+15 min) or 105 min assay.
- Kit has all necessary ready-to-use reagents for 96 tests; Shelf Life ~6-12 months.

All ELISA kits follow the same basic design, General assay procedure etc.

- Step 1.** Pipet **100 ul** each of pre-diluted quantitative positive standards (6.25-100 u/ml), and samples (1:100 or higher).
- Step 2.** Mix gently for 5-10 seconds and incubate for **60 min at room temp.**
- Step 3.** **Wash 3X using supplied wash buffer.** Add **100 ul of Antibody-HRP Conjugate** to all wells, mix by gentle mixing for 5-10 seconds and incubate at room temperature for **30 min.**
- Step 4.** **Wash 4X using supplied wash buffer.** Add **100 ul of Substrate** solution to all wells, mix gently, and incubate at room temperature for **15 min.** Blue color develops in standards and positive samples.
- Step 5.** Pipet **100 ul of stop solution** into all tubes, mix gently (blue color turns yellow). **Measure OD at A450 nm.** Positive samples can be observed visually and the antibody concn calculated from the standard curve.

Available ELISA Kits

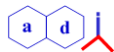
ELISA Kit Description	Human	Mouse	Rabbit
HPV Vaccine (Gardasil/Cervarix) HPV6L1 Antibody (IgG) ELISAs	550-106-PHG	550-306-PMG	550-206-PRG
HPV Vaccine (Gardasil/Cervarix) HPV11L1 antibody (IgG) ELISA kit	550-111-PHG	550-311-PMG	550-211-PRG
HPV Vaccine (Gardasil/Cervarix) HPV16L1 antibody ELISA kit	550-116-PHG	550-316-PMG	550-216-PRG
HPV Vaccine (Gardasil/Cervarix) HPV18L1 antibody ELISA kit	550-118-PHG	550-318-PMG	550-218-PRG



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Human Papilloma Virus Vaccines Antibody ELISA Kits, Recombinant Proteins, Peptides and Antibodies

Catalog#	Catalog#	Product Description	Product Type
HPV06	HPV06E71-M	Monoclonal Anti-Human Papilloma Virus 6 early protein 7 (E7) (HPV6E7) IgG,	Antibodies
	HPV06L11-M	Monoclonal Anti-Human Papilloma Virus 6 late protein L1 (HPV6L1) IgG	Antibodies
	HPV06L12-S	Rabbit Anti-Human Papilloma Virus 6 late protein L1 (HPV6L1, full length) antiserum	Antibodies
	HPV06L15-R-10	Recombinant (E.coli) Human Papilloma Virus 06 late protein L1 (HPV6L1), full length, His-tag	Recombinant protein
HPV11	HPV11L11-M	Monoclonal Anti-Human Papilloma Virus 11 (HPV11) late protein L1 (HPV11L1) IgG, aff pure #1	Antibodies
	HPV11L12-S	Rabbit Anti-Human Papilloma Virus 11 late protein L1 (HPV11L1, full length) antiserum	Antibodies
	HPV11L15-R-10	Recombinant (E.coli) Human Papilloma Virus 11 late protein L1 (HPV11L1), full length, His-tag	Recombinant protein
HPV16	HPV16E21-M	Monoclonal Anti-Human Papilloma Virus 16 early protein E2 (HPV16E2) IgG, aff pure #1	Antibodies
	HPV16E61-M	Monoclonal Anti-Human Papilloma Virus 16 (HPV16) early protein E6 (HPV16E6) IgG, aff pure #1	Antibodies
	HPV16E71-M	Monoclonal Anti-Human Papilloma Virus 16 (HPV16) early protein E7 (HPV16E7) IgG, aff pure #1	Antibodies
	HPV16L12-S	Rabbit Anti-Human Papilloma Virus 16 late protein L1 (HPV16L1, full length) antiserum	Antibodies
	HPV16L11-M	Monoclonal Anti-Human Papilloma Virus 16 (HPV16) late protein L1 (HPV16L1) IgG, aff pure #1	Antibodies
	HPV16L11-C	Recombinant purified Human Papilloma Virus 16 late protein L1 ((HPV16L1, full length) control for WB	Western Control
	HPV16E21-R-100	Recombinant (E.coli) Human Papilloma Virus 16 early protein (HPV16, E2+E6+E7 epitopes fused to GST protein	Recombinant protein
	HPV16L15-R-10	Recombinant (E.coli) Human Papilloma Virus 16 late protein L1 protein ((HPV16L1, his-tag), full length	Recombinant protein
HPV18	HPV18E61-M	Monoclonal Anti-Human Papilloma Virus 18 early protein E6 (HPV18E6) IgG, aff pure #1	Antibodies
	HPV18E71-M	Monoclonal Anti-Human Papilloma Virus 18 early protein E7 (HPV18E7) IgG, aff pure #1	Antibodies
	HPV18L12-S	Rabbit Anti-Human Papilloma Virus 18 late protein L1 (HPV18L1, full length) antiserum	Antibodies
	HPV18L11-M	Monoclonal Anti-Human Papilloma Virus 18 late protein L1 (HPV18L1) IgG, aff pure #1	Antibodies
	HPV618L13-S	Mouse Anti-Gardasil vaccine L1s (Human Papilloma Virus/HPV6+11+16+18 late proteins) antiserum control for ELISA	Antibodies
	HPV18L11-C	Recombinant purified Human Papilloma Virus 18 late protein L1 (HPV18L1, full length) control for WB	Western Blot +ve Control
	HPV18E25-R-50	Recombinant (E.coli) Human Papilloma Virus 18 early protein (HPV18; E2+E6+E7 epitopes fused to GST protein	Recombinant protein
	HPV18L15-R-10	Recombinant (E.coli) Human Papilloma Virus 18 late protein L1 (HPV18L1), full length, His-tag	Recombinant protein
	SP-100307-1	HPV-E7-N (AA: Tyr-Met-Leu-Asp-Leu-Gln-Pro-Glu-Thr-Thr-Asp-Leu-Tyr-Cys-Tyr-Glu-Gln-Leu-Asn-Asp) (MW: 2467.72)	Synthetic peptide
	SP-100308-1	HPV-E7-C (AA: Ser-Ser-Glu-Glu-Glu-Asp-Glu-Ile-Asp-Gly-Pro-Ala-Gly-Gln-Ala-Glu-Pro-Asp-Arg-Ala) (MW: 2102.08)	Synthetic peptide
	SP-100309-1	HPV-E6-N (AA: Asp-Pro-Gln-Glu-Arg-Pro-Arg-Lys-Leu-Pro-Gln-Leu-Cys-Thr-Glu) (MW: 1810.07)	Synthetic peptide
	SP-100310-1	HPV-E6-M (AA: Ser-Glu-Tyr-Pro-His-Tyr-Cys-Tyr-Ser-Leu-Tyr-Gly-Thr-Thr-Leu-Glu-Gln-Gln-Tyr-Asn) (MW: 2459.64)	Synthetic peptide
	SP-100311-1	HPV-E6-C (AA: Pro-Leu-Cys-Pro-Glu-Glu-Lys-Gln-Arg-His-Leu-Asp-Lys-Lys-Gln-Arg-Phe-His-Asn-Ile) (MW: 2516.92)	Synthetic peptide

Rev. 121212A



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