

## High-throughput profiling of the humoral immune responses against thirteen human papillomavirus types by proteome microarrays

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### Abstract

We have developed microarrays with all eight proteins encoded by 13 different human papillomavirus types associated with anogenital cancer (HPV-16, -18, -31, -33, -35, -45, and -53), genital warts (HPV-6 and -11), or skin lesions (HPV-1, -2, -4, and -5). We analyzed the seroprevalence of antibodies in 546 patients, which had either cervical carcinomas, or precursor lesions, or which were asymptomatic. All patient groups contained sera ranging from high reactivity against multiple HPV proteins to low or no reactivity. Computational analyses showed the E7 proteins of carcinogenic HPV types as significantly more reactive in cancer patients compared to asymptomatic individuals and discriminating between cancer and HSIL or LSIL patients. Antibodies against E4 and E5 had the highest seroprevalence but did not exhibit differential reactivity relative to pathology. Our study introduces a new approach to future evaluation of the overall antigenicity of HPV proteins and cross-reaction between homologous proteins. © 2010 Elsevier Inc.

### SciVal Topic Prominence

Topic: [Human papillomavirus 16 | Papillomavirus Vaccines | minor capsid](#)

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### Author keywords

Cervical cancer; E7; High-throughput; Humoral immuneresponse; Microarray; Papillomavirus; Serology

### Indexed keywords

EMTREE drug terms:	monoclonal antibody; protein E4; protein E5; unclassified drug; virus protein
EMTREE medical terms:	Article; condyloma acuminatum; controlled study; cross reaction; human; Human papillomavirus type 1; Human papillomavirus type 11; Human papillomavirus type 16; Human papillomavirus type 18; human papillomavirus type 2; Human papillomavirus type 31; Human papillomavirus type 35; Human papillomavirus type 4; Human papillomavirus type 45; Human papillomavirus type 53; Human papillomavirus type 6; humoral immunity; immune response; nonhuman; priority journal; protein expression; protein microarray; proteomics; seroprevalence; Wart virus

MeSH:	Adenocarcinoma; Adult; Alphapapillomavirus; Antibodies, Viral; Child, Preschool; Female; Genome, Viral; Humans; Neoplasms, Squamous Cell; Papillomavirus Infections; Protein Array Analysis; Uterine Cervical Neoplasms
Species Index:	Human papillomavirus; Human papillomavirus types; Papillomaviridae

Chemicals and CAS Registry Numbers:

Antibodies, Viral

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