題名:Human papillomavirus typing with a polymerase chain reaction-based genotyping array compared with type-specific PCR

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摘要:Abstract

Background: Type-specific persistence of human papillomavirus (HPV) infection can cause invasive cervical cancer.

Objectives: To evaluate the efficacy of HPV detection and typing with a general polymerase chain reaction (PCR)-based genotyping array
and to compare it with a type-specific PCR assay.

Study design: Four hundred and thirty-three cervical samples were tested with a modified MY11/GP6+ PCR-based reverse-blot assay
(EasyChip® HPV Blot; King Car, Taiwan [hereafter HPV Blot]) and with 20 genotypes of L1-type-specific PCR (HPV-6, -11, -16, -18, -31,
-33, -35, -39, -45, -51, -52, -53, -56, -58, -59, -62, -66, -68, -70, and -71 [CP8061]).

Results: The concordance of the two tests in determining HPV positivity was 96.8% (419/433), with a Cohen's κ = 0.93 (95% CI: 0.90–0.97)
and McNemar's test of P = 1.0, which indicates excellent agreement. The overall concordance of the two tests in the identification of typespecific
HPV was 91.0% (394/433). Sensitivity (90–100%), specificity (99.2–100%), and accuracy (98.6–100%) rates of HPV Blot against
the gold standard were satisfactory for HPV-16, -18, -58, -33, -52, -39, -45, -31, -51, -70 while HPV-71 (63.6%) had suboptimal sensitivity.

Though the κ values between the two tests for many

individual genotypes could not be reliably calculated because of low positivity, the κ values for HPV-16, -52, and -58 were excellent (0.93, 0.96, and 0.95, respectively).

Conclusion: The modified MY11/GP6+ PCR-based HPV Blot assay is accurate and sensitive for detection and genotyping of HPV in cervical swab samples.