The Roche cobas® HPV Test

High-Risk HPV DNA Screen and HPV 16/18 Genotype

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CLINICAL APPLICATION

Although most human papillomavirus infections of the cervix are transient and resolve without intervention, some infections remain persistent. These persistent infections with high-risk HPV are the primary cause of cervical cancer and its precursor, cervical intraepithelial neoplasia. Persistent HPV infection is implicated in more than 99% of cervical cancers worldwide. Therefore, a successful screening program is paramount to the prevention of morbidity and mortality from cervical cancer.

CLINICAL BACKGROUND

Cervical cancer screening practices and guidelines have continued to evolve since George Papanicolaou’s cytopathologic test became widely adopted in the early 1940’s. The ALTS study published in 2000 effectively demonstrated the utility of HPV testing in women with ASC-US or LSIL Pap. Current cervical cancer screening guidelines declare an essential role for HPV testing, along with cytologic studies, in screening women 30–65 years of age. Recent recommendations also describe the importance of detecting high-risk HPV types 16 and 18 in women 30 years and older who are cytology negative and HPV positive, to identify women who should be referred immediately to colposcopy.

Keeping step with this progress is the development and availability of assays for detecting and genotyping HPV in cervical specimens. Currently, there are four FDA-cleared HPV DNA assays on the market and two FDA-cleared tests to detect the two most common HPV genotypes found in invasive cervical cancers.

METHODOLOGY AND TEST OPTIONS

PAML has adopted the FDA-cleared Roche cobas HPV Test, a unique automated real-time multiplex PCR system that detects 14 high-risk HPV types (HPV types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68) with simultaneous identification of HPV types 16 and 18 and detection of human-globin, a target that serves as both an indication of ample patient DNA present in the sample and of the efficacy of the PCR reaction. Although the assay has only been FDA-cleared for ThinPrep specimens, our laboratory has performed a thorough off-label validation of SurePath specimens; therefore, SurePath collections can be submitted for evaluation as well.

In women with a cytologic result of CIN3, this test has a clinical sensitivity of 93.5% and a negative predictive value of 99.7%. Analytical studies have shown that this test does not cross-react with low-risk HPV types, a common concern with HPV DNA testing.

Multiple test options are available for your needs:
A. High-risk HPV screen only (Test code: HPVHRD)
B. High-risk HPV with reflex to HPV Genotype 16/18 (HPVWGT)
C. HPV Genotype 16/18 only (HPVGTY)
The Roche cobas® HPV Test
High-Risk HPV DNA Screen and HPV 16/18 Genotype

**TEST INTERPRETATION**

Valid high-risk HPV results will be reported out as ‘detected’ or ‘not detected’. A result of ‘detected’ means the specimen is positive for DNA from any one of, or a combination of, the high-risk HPV types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and/or 68. A result of ‘not detected’ means that HPV DNA for types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68 was undetectable or below the pre-set threshold of the assay.

The HPV genotype test has two reportable results. Any combination of these two results will be provided, and will include a result for HPV type 16 (‘detected’ or ‘not detected’) and HPV type 18 (‘detected’ or ‘not detected’). A result of ‘detected’ means the specimen is positive for the genotype indicated. A result of ‘not detected’ means that DNA for the genotype indicated was undetectable or below the pre-set threshold of the assay.

**TEST INFORMATION**

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Test Description</th>
<th>Method</th>
<th>CPT Code</th>
<th>Specimen</th>
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<tbody>
<tr>
<td>HPVHRD</td>
<td>HPV, High Risk</td>
<td>Polymerase Chain Reaction</td>
<td>87621</td>
<td>Liquid based cytology specimen (SurePath® or Thin Prep®) stored and transported at ambient room temp. SurePath® stability 3 weeks; Thin Prep® stability 18 weeks</td>
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<td>HPVWGT</td>
<td>HPV, High Risk; reflex 16/18 Genotype if Pos</td>
<td>Polymerase Chain Reaction</td>
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<td>Liquid based cytology specimen (SurePath® or Thin Prep®) stored and transported at ambient room temp. SurePath® stability 3 weeks; Thin Prep® stability 18 weeks</td>
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<tr>
<td>PAPAC</td>
<td>Liquid Pap; reflex HPV if ASCUS</td>
<td>Polymerase Chain Reaction</td>
<td>88175</td>
<td>Liquid based cytology specimen (SurePath® or Thin Prep®) stored and transported at ambient room temp. SurePath® stability 3 weeks; Thin Prep® stability 18 weeks</td>
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<tr>
<td>PAPACR</td>
<td>Liquid Pap; reflex HPV if ASCUS; reflex 16/18 Genotype if HPV Pos</td>
<td>Polymerase Chain Reaction</td>
<td>88175</td>
<td>Liquid based cytology specimen (SurePath® or Thin Prep®) stored and transported at ambient room temp. SurePath® stability 3 weeks; Thin Prep® stability 18 weeks</td>
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<td>PAP30</td>
<td>Liquid Pap with HPV; reflex 16/18 Genotype if HPV Pos, Pap Neg</td>
<td>Polymerase Chain Reaction</td>
<td>88175 88621</td>
<td>Liquid based cytology specimen (SurePath® or Thin Prep®) stored and transported at ambient room temp. SurePath® stability 3 weeks; Thin Prep® stability 18 weeks</td>
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</tbody>
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**SELECTED REFERENCES**