Supplemetary Table 1: Molecular HPV Tests: Target, Detection Method, and HPV Genotypes

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| **Test** | **Manufacturer / Technology** | **Target**  | **Amplification** | **Detection** | **Description of method** | **high-risk HPV detected** | **Number of types detected** | **Genotyping** |
| digene HC2 High-Risk HPV DNA Test | Qiagen / Hybrid Capture 2 | HPV DNA | Several alkaline phosphatase is conjugated to each antibody. Multiple conjugated antibodies bind to each captured RNA-DNA hybrid | microplate chemiluminescense | - RNA probes hybridize to taget DNA. - Antibodies specific to RNA-DNA hybrids capture them to surface of microplate. - Alkaline phosphatase conjugated Antibodies specific to RNA-DNA hybrid react to immobilized hybrids. - Cleavage of chemilluminiscent substrate emits light to be measured.  | 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, and 68 | 13 | No |
| cobas HPV Test | Roche / real-time multiplex PCR | HPV DNA | Multiplex PCR | fluorescent probe (quencher-reporter | Multiplex real-time PCR with a pool of HPV primers for different types. Human β-globin as the reference amplicon. | 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68 | 14 | 16, 18 |
| Cervista HPV HR assay | Hologic / Invader Chemistry | HPV DNA | 106-107 signal amplification per hour in two isothermal reactions | cleavage of FRET oligonucleotides | - Two sequence specific oligos bind to target DNA with an overlap  - 5' portion (flap) of overlaping oligos cleaved by Cleavase - Cleaved flaps bind to a hairpin FRET oligo - The new structure cleaved by Cleavase producing a fluorescence signal - Oligos specific to human histone 2 gene as internal control | 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68 | 14 | No |
| Aptima HPV assay | Hologic / TMA & HPA | HPV E6/E7 mRNA | Transcription-Mediated Amplification (TMA) | Hybridization Protection Assay (HPA) | - Capture oligomers specific to HPV mRNA target and linked to magnetic microparticles pull HPV mRNA down - HPV mRNA is amplified using TMA (MMLV reverse transcriptase and T7 RNA polymerase) to create multiple copies of RNA amplicon - Chemiluminescent labeled probes hybridize to RNA amplicon - DNA:RNA hybrid produces a light signal to be measured | 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68 | 14 | No |
| OncoE6 Cervical Test | Arbor Vita / Immunochromatography | E6 oncoprotein | None | anti E6 dectector monoclonal antibody conjugated to alkaline phosphatase | Lysate migrates up the nitrocellulose membrane strip by capillary forces. Capture monoclonal antibodies fixed to strip at specific lines, bind to oncoprotein. Detector monoclonal antibodies conjugated to alkaline phosphatase allow to visualization of positive bands through a colorimetric reaction. | 16 and 18 | 2 | 16, 18 |
| HR/LR PCR | Various / PCR and enzyme immunoassay (EIA) | HPV DNA L1 region | PCR (GP5+/GP6+) primers are non-specific and would amplify both HR and LR HPV. | enzyme immunoassay | Two universal primers (GP5 and GP6-biotin) amplify a 150 bp of HPV genome. Biotinylated PCR products are captured on a streptavidin-coated microplate well. Incubation with denaturation solution separates the non-biotinylated strand. Hybridization takes place with a labeled HPV-specific probe cocktail. The label is detected with a conjugate, which is visualized by a substrate. Optical density is measured. | 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68 plus LR HPV | > 14 (non-specific) | No |
| Linear Array HPV Genotyping | Roche / Line Blot Assay | HPV DNA | PCR | line blot assay | Multiplex PCR to amplify the polymorphic L1 region of the HPV genome biotinylated PGMY primers and a human β-globin amplicon as reference. The biotin-labeled PCR products hybridize to an array of immobilized oligonucleotide probes specific to different HPV types | 6, 11, 16 18, 26, 31, 33, 35, 39, 40, 42, 45, 51, 52, 53, 54, 55, 56, 58, 59, 61, 62, 64, 66, 67, 68, 69, 70, 71, 72, 73 (MM9), 81, 82 (MM4), 83 (MM7), 84 (MM8), IS39, and CP6108 | 37 (13 high-risk) | Yes |
| INNO-LiPA HPV Genotyping Extra II | Fujirebio / Line Probe Assay (LiPA) | HPV DNA | PCR | line probe assay | Similar to linear array genotyping. SPF10+ primers are used to amplify a 65 bp amplicon of L1. | - HPV HR: 16, 18, 31,33, 35, 39, 45, 51, 52, 56, 58, 59, 68 - HPV possibly HR: 26, 53, 66, 70, 73, 82 - HPV LR or not classified: 6, 11, 40, 42, 43, 44, 54, 61, 62, 67, 81, 83, 89 | 32 | Yes |