Use of ESwab for the detection of *Mycoplasma hominis* and *Ureaplasma urealyticum* from genital specimens

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**Abstract**

**Objectives:** *Mycoplasma hominis* (Mh) and *Ureaplasma urealyticum* (Uu) are common inhabitants of the urogenital tract of women. ESwab (Copan Italia), a Liquid Based Microbiology device, for collection and transportation of clinical specimens, preserves microorganisms at room temperature. This study validates the use of the ESwab kit for the collection and storage of clinical specimens for the detection of *M. hominis* and *U. urealyticum* with the MYCOFAST Evolution 3 test.

**Methods:** ATCC strains of Mh and Uu and clinical specimens were used for this study. Mock specimens were prepared by adding 100 ul of Mh and Uu culture to Rayon swabs and to the flocked swabs of the ESwab kit. The rayon swabs were added to the UMMt broth, while the flocked swabs were added to the 1 ml Amies medium tubes, then different volumes were added to the UMMt broth. Genital specimens (102) for the diagnosis of genital infections, collected with the flocked swab and transported in the Amies medium, were tested with the MYCOFAST Evolution 3 (Elitech, distributed by DID in Italy). Clinical specimens were tested the same day of collection and after 24 hours storage at room temperature (RT) following the method for liquid specimen. Each specimen was vortexed and 300 microliters were inoculated into an UMMt broth vial as per the kit manufacturer procedure. Vials and trays were incubated at 37°C and read after 48 hours incubation.

**Results:** In the mock specimens, 300 ul of the ESwab specimens gave the same results as the Rayon swabs after 36 to 48 hours incubation. In the 102 genital specimens 32(31.37%) were positive, 6 Mh and 26 Uu and 70 negative for the same day testing, while 34(33.33%) were positive, 9 Mh and 25 Uu and 68 negative when tested after 24 hours at room temperature. There was 100% antibiotic resistance correlation in 6 Mh and 15 Uu at both testing times. The resistance of the other positive was variable with both inoculation times.

**Conclusions:** ESwab didn't interfere with the performance of the MYCOFAST Evolution 3 for the detection of Mh, Uu, and antibiotic resistance with mock and clinical specimens. 300 microliters of ESwab specimen are suitable for the detection, identification and antibiotic susceptibility of Mh and Uu with the MYCOFAST Evolution 3. Genital specimens, collected with the ESwab kits, a Liquid Based Microbiology (LBM) device, can be tested from the same specimen:

- With the MYCOFAST Evolution 3 assay even after 24 hours incubation.
- In the 102 genital specimens 32(31.37%) were positive, 6 Mh and 26 Uu and 70 negative for the same day testing while 34(33.33%) were positive, 9 Mh and 25 Uu and 68 negative when tested after 24 hours at room temperature.
- There was 100% antibiotic resistance correlation in 6 Mh and 15 Uu at both testing times. The resistance of the other positive was variable with both inoculation times.