to go for clinical collection. Aim of this study was to evaluate the performance of a new Home-based Self Vaginal FLOQSwab™ (HBHSV - COPAN Italia, Brescia) in combination with a commercially available real-time PCR assay, Anyplex II STI-7 (Seogene, Seoul, Korea) which detects seven major pathogens in a single reaction (Chlamydia trachomatis - CT, Neisseria gonorrhoeae - NG, Trichomonas vaginalis - TV, Mycoplasma hominis - MH, Mycoplasma genitalium - MG, Ureaplasma urealyticum - UU, and Ureaplasma parvum - UP).

**Methods**

A total of 78 asymptomatic donors, employees of a private industry (aged 18 to 45 years) were voluntarily enrolled to STIs screening. The subjects answered to a standardise anonymized questionnaire regarding the easy of use of self vaginal collection. The new HBHSV swab was collected in a domestic context by following the detailed “how to use it” instructions. After collection, the HBHSV swabs were shipped at room temperature to the laboratory in Pievesestina and processed within five weeks. The threshold cycle value (Ct) of a human genomic target (internal control, IC) and Ct of pathogens (CT, NG, TV, MH, MG, UU, UP) were taken as parameters to assess respectively, the efficiency of self-sampling and presence of any inhibitor effects, the stability of nucleic acids on dry swabs.

**Results**

No failure results have been observed, the IC of all samples were amplified (average Ct 30). The real time PCR assay was able to identified 2/78 CT, 4/78 UU, 40/78 UP, 6/78 MH, 1/78 TV positive patients. No MG and NG positive patients have been detected. Women reported self-collection with HBHSV easy and comfortable (100%).

**Conclusion**

the new HBHSV device showed excellent recovery and stability of nucleic acid of STI pathogens up to 5 weeks at room temperature. The HBHSV is suitable for screening of STIs with real-time PCR assay.

**LACTIC ACID EXERTS ANTI-CHLAMYDIA TRACHOMATIS ACTIVITY ON THE EPITHELIUM BY REDUCING HOST CELL PROLIFERATION**

Vonetta Edwards, Elias McComb, Steven Smith, Patrick Bavoil, Jacques Rawel. University of Maryland School of Medicine, Baltimore, USA; Institute for Genome Sciences, Baltimore, USA; University of Maryland – College Park, College Park, USA; University of Maryland – School of Dentistry, Baltimore, USA; University of Maryland – School of Medicine, Baltimore, USA

**Introduction**

Epidemiological studies have demonstrated that the vaginal microbiota can significantly impact the risk of acquiring sexually transmitted infections. The human vagina often contains Lactobacillus spp., which produce lactic acid and create an acidic environment (pH 3.5–4) thought to reduce vaginal STIs. Unlike high d-lactate producers, Lactobacillus spp. that produce low amounts or no d-lactate, while producing vaginal acid (D, L or D/L) at concentrations that often contain features that promote adaptation to the genitourinary niche, making them “gonoococcus-like” and distinguishing them from other N. meningitidis. These results suggest a differential role for vaginal Lactobacillus spp. in protecting against C. trachomatis infections and potentially other STIs. This protection is driven by the production of d-lactate, which acts on epithelial cells by inhibiting cell proliferation, which appears to be required for infection.

**GENOMIC CHARACTERISATION OF URETHRITIS-ASSOCIATED NEISSERIA MENINGITIDIS**

Ma KC, M Ueno, S Jesenca, RD Kikimately, M Onishi, YG Grad. Department of Immunology and Infectious Diseases, Harvard T.H. Chan School of Public Health, Boston, USA; WHO Collaborating Centre for Gonorrhoea and other STIs, National Reference Laboratory for Pathogenic Neisseria, Faculty of Medicine and Health, Örebro University, Örebro, Sweden; Institute for Microbiology and Immunology, Medical Faculty, University of Ljubljana, Ljubljana, Slovenia; Division of STD Prevention, National Centre for HIV/AIDS, Viral Hepatitis, STD and TB Prevention, CDC, Atlanta, Georgia, USA; Department of Bacteriology I, National Institute of Infectious Diseases, Tokyo, Japan; Division of Infectious Diseases, Brigham and Women’s Hospital and Harvard Medical School, Boston, USA

**Introduction**

Mainly case reports have shown that N. meningitidis, typically a resident of the oropharynx and the causative agent of meningococcal meningitis and meningococcaemia, is capable of invading and colonising the urogenital tract. This can result in urethritis, akin to the syndrome caused by N. gonorrhoeae, the etiologic agent of gonorrhoea. Recently, meningococcal strains associated with outbreaks of urethritis were reported to share genetic characteristics with gonococci, raising the question of the extent to which these strains contain features that promote adaptation to the genitourinary niche, making them “gonoococcus-like” and distinguishing them from other N. meningitidis. These results suggest a differential role for vaginal Lactobacillus spp. in protecting against C. trachomatis infections and potentially other STIs. This protection is driven by the production of d-lactate, which acts on epithelial cells by inhibiting cell proliferation, which appears to be required for infection.

**Conclusion**

The meningococcal urethritis strains in this study do not share the allelic patterns of AniA, fHbp, or the capsule, yet the meningococcal urethritis isolates harbour mutations in AniA predicted to result in truncated peptides and a minority (n=4) of these isolates contain alleles associated with frameshifted fHbp. We noted substantial diversity in the capsule biosynthetic locus, including intact, disrupted, and absent capsules, indicating urethral colonisation is possible across a range of capsular phenotypes.