

## CORRESPONDENCE

### Solid phase immunoassay for *C trachomatis*

The development of chlamydial antigen detection kits has led to the wider availability of diagnostic services for this organism. Currently, two technologies are readily available; immunofluorescence microscopy and enzyme linked immunosorbant assay (EIA). Neither technology is perfect, with problems of sensitivity and of specificity.<sup>1</sup> Advances continue, and it is important that new kits are properly evaluated against chlamydial cell culture in both high and low risk populations.

Solid phase immunoassay (IA) tests are simple to use, requiring little technical expertise. They are likely to become popular as "office" tests. We recently evaluated the performance of a novel IA utilising coloured latex particles (Clearview Chlamydia, Unipath, Bedford, UK) for cervical specimens against conventional cell culture.

Specimens from the cervix of 148 women attending the Genitourinary Medicine Departments of the Middlesex Hospital and University College Hospital were examined. Two cotton tipped swabs were taken from the cervix, one was expressed into 2SP transport medium for chlamydial culture, and the other was used for immuno-assay. The order of taking the swabs was determined from a random number table.

Chlamydial culture utilised cycloheximide treated McCoy cells, grown on glass coverslips in plastic vials. All specimens were inoculated in duplicate, and one of each pair sub-

jected to a single blind passage. The presence of *Chlamydia trachomatis* was confirmed using a specific immunofluorescent monoclonal antibody stain (Microtrak, Syva Cor., Palo Alto, Calif.).

Swabs for immunoassay were processed according to the manufacturers' instructions. In brief, the swab plus extraction reagent were held at 80°C for 10 minutes. The swab was then discarded. After cooling, 5 drops of the extract were added to the sample window of the test unit. The appearance of a blue/black line in the result window within 15 minutes was taken to indicate the presence of chlamydial antigen (positive and negative controls were included in each batch). Discrepant results were further evaluated by application of the Syva Microtrak Direct Immunofluorescence (DIF) test to the remaining immunoassay extract, and examining for stained elementary bodies.

*C. trachomatis* was isolated from 34 of 148 women (23%). There were seven discrepant results (see table), all were culture positive, immunoassay negative. One of the seven (immunoassay swab taken first) was positive with the Microtrak DIF test. The other six were all randomised to have the immunoassay swab taken second, and were negative on DIF. This could reflect low levels of antigen on the swab. The sensitivity, specificity, predictive value of a positive result (PVP), predictive value of a negative result (PVN), and agreement were 79.4%, 100%, 100%, 94.2% and 95.27%, respectively, for the Clearview immuno-assay compared with cell culture.

In our hands, the Clearview Chlamydia immunoassay test compares favourably with other immunoassays evaluated against our cell culture system. We found that sensitivity was low compared to our results for the Abbott Chlamydiazyme,<sup>2</sup> and Pharmacia EIA<sup>3</sup> tests (92.3%, 90.5%, respectively), and indeed lower than the 93.5% sensitivity reported by Arumainayagam *et al*<sup>4</sup> in a recently reported comparison of Clearview against cell culture. A similar degree of sensitivity was found with the Ortho Chlamydia EIA test (80%).<sup>5</sup> Specificity and PVP were excellent, as reported by Arumainayagam and co-workers. This indicates that the test will be reliable for both high and low

risk populations. However, the lower sensitivity compared to other enzyme immunoassays may restrict its use in the latter group. The test was simple to use, requiring a dry swab without the need for a special transport medium. The test took an average of 40 minutes to perform, and the endpoint was clear.

The test is not as yet available for use on specimens from the male urethra, or other sites.

G L RIDGWAY  
G MUMTAZ  
E ALLASON-JONES\*  
J S BINGHAM\*  
Departments of Microbiology  
and G-U Medicine\*,  
University College and  
Middlesex Hospitals,  
London WC1E 6AU

- Ridgway GL, Taylor-Robinson D. Chlamydial infections: which laboratory test? *J Clin Pathol* 1991; 44:1-5.
- Mumtaz G, Mellars BJ, Ridgway GL, Oriel JD. Enzyme immunoassay for the detection of *C. trachomatis* antigen in urethral and endocervical swabs. *J Clin Pathol* 1985;38:740-2.
- Mumtaz G, Ridgway GL, Nayagam A, Oriel JD. Enzyme immunoassay compared with cell culture and immunofluorescence for detecting genital chlamydia. *J Clin Pathol* 1989;42: 658-60.
- Arumainayagam JT, Matthews RS, Uthayakumar S, Clay JC. Evaluation of a novel solid-phase immunoassay, Clearview Chlamydia for the rapid detection of *Chlamydia trachomatis*. *J Clin Microbiol* 1990;28:2813-4.
- Mumtaz G, Ridgway GL, Nayagam A, Robinson AJ. Comparison of an enzyme immunoassay (Ortho) with cell culture and immunofluorescence for the detection of genital chlamydial infection. *Int J STD and AIDS* 1990:187-90.

### Susceptibility of *Haemophilus ducreyi* to spermicidal compounds, in vitro

The active ingredients of spermicidal preparations are known to have antimicrobial activity against most of the causative organisms of sexually transmitted diseases, in vitro<sup>1</sup> and clinical studies have also confirmed that spermicides can provide effective prophylaxis against the infections in vivo.<sup>2</sup> *Haemophilus ducreyi* is endemic in many African and other third-world countries where it is the commonest

Table Comparison of immuno-assay (Clearview Chlamydia) with cell culture for detecting cervical chlamydial infection

Incidence (by cell culture) = 34/148 = 23.0%

	Cell culture	
	Pos	Neg
CLEARVIEW IMMUNOASSAY	Pos 27	Neg 0
	Neg 7	114