

Related publications

Hogan, R., Mathews, S, Mukopathday, S., *et al.*, (2004) Chlamydial persistence : beyond the biphasic paradigm. Mini-review. *Infect. Immun.* **72**: 1843-1855.

Debattista, J., Gazzard, C., Wood, R., *et al.*, (2003) Microbiological analysis of samples from women undergoing falloposcopic investigations for infertility. *Human Reprod.* (in press).

Debattista, J, Allen, J, Allen, J *et al.*, (2003) Immunopathogenesis of Chlamydia trachomatis infections in women – a Review. *Fertility & Sterility* **79**: 1273-1287.

Hogan, R., Mathews, S., Kutlin, A., *et al.*, (2003) Differential expression of genes encoding membrane proteins between acute and continuous Chlamydia pneumoniae infections. *Microbial Pathogen.* **34**: 11-16.

Cochrane, M., Pospischil, A., Walker, P., *et al.*, (2003) The distribution of Chlamydia pneumoniae DNA in atherosclerotic carotid arteries and the significance for sampling procedures. *J. Clin. Microbiol.* **41**: 1454-1457.

Debattista, J., Timms, P., Allan, J. *et al.*, (2002) Reduced levels of gamma-interferon secretion in response to chlamydial heat shock protein 60 amongst women with pelvic inflammatory disease and a history of repeated Chlamydia trachomatis infections. *Immunol. Lett.* **81**: 205-210.

Inman-Bamber, J., Wan, C., Gardham, T., *et al.*, (2002) Novel PCR-EIA method for the detection of Chlamydia pneumoniae in respiratory specimens. *Mol. Cell. Probes* **16**: 57-61.

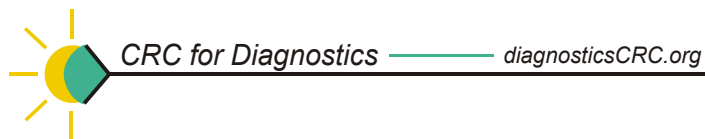
Mathews, S., George, C., Flegg, C., *et al.*, (2001) Differential expression of ompA, ompB, pyk, nlpD and Cpn0585 genes between normal and interferon-gamma-treated cultures of Chlamydia pneumoniae. *Micro. Pathogen.* **30**: 337-345.

Somodevilla-Torres, M., Timms, P., Harris, R., *et al.*, (2001) Solid-phase amplification and detection : A single-tube method for detection of infectious agents. *Mol. Diagnosis* **6**: 131-136.

Beagley, K and Timms, P. (2000) *Chlamydia trachomatis* infection : Incidence, health costs and prospects for vaccine development. *J. Reprod. Immunol.* **48**: 47-68.

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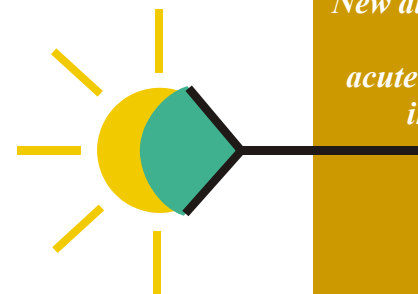
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Chlamydia Detection

*New diagnostic tests
for
acute and chronic
infection*



The CRC for Diagnostics

An Australian Co-operative Research Centre,
with world class researchers and end users
in a strong alliance of research & commercialisation expertise.

Detection of Chlamydia

The Product

A new antigen panel is being developed to enable the easy and accurate detection of chlamydial infections in patient serum. *Chlamydia* is a major infectious agent in humans, causing diseases such as infertility, pelvic inflammatory disease, trachoma, bronchitis, pneumonia, chronic obstructive pulmonary disease and has been strongly linked to heart disease. Currently available tests are inadequate, particularly for *C.pneumoniae*. The new serum-based tests will be able to detect both acute and chronic infections caused by either *C.trachomatis* or *C.pneumoniae*.

The Advantages

PCR tests are available for *C.trachomatis*, however there currently are no reliable tests available for *C.pneumoniae*. Serological tests for both chlamydias are inadequate or unreliable and generally chronic infections, which lead to the serious disease sequelae, are unreliable.

The CRC for Diagnostics has formulated new tests that utilize easily-obtained specimens or serum and which are able to differentiate between acute and chronic chlamydial infections. It is important to be able to detect chronic chlamydial infections as these often go unnoticed and yet the chronic or persistent infections lead to the important disease sequelae caused by this bacterium, including infertility in women, chronic obstructive pulmonary disease and potentially heart disease in both men and women.

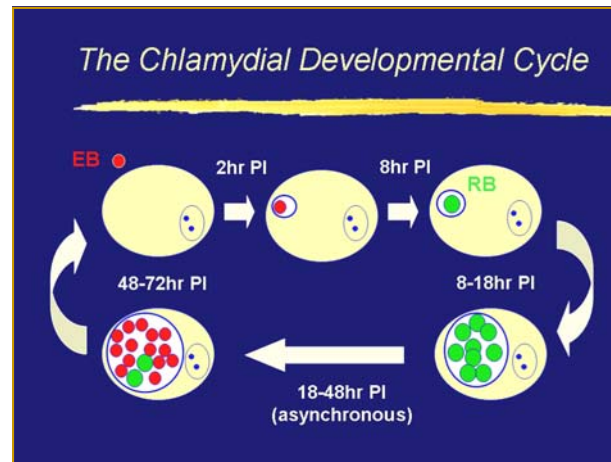
The Science

CDx scientists are identifying novel chlamydial antigens associated with both acute and chronic or persistent chlamydial infections. These novel antigens are then formulated and used in assays with patient sera.

The team is making use of direct patient samples as well as *in vitro* models of chlamydial persistence.

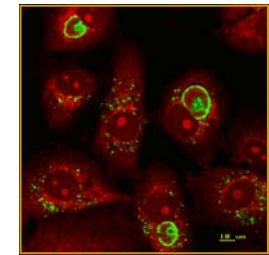
Several patient groups are being utilised, including those with acute and chronic infections by the sexually transmitted disease (STD) pathogen, *Chlamydia trachomatis*. Particularly useful are samples from patients who have developed pelvic inflammatory disease (PID) or are infertile and making use of *in vitro* fertilization (IVF) procedures.

In addition to STD patients, the group is using respiratory patients and carotid artery disease patients infected with *Chlamydia pneumoniae*.



The *in vitro* model being utilized in the research is the gamma-interferon model of chlamydial persistence. Genes and proteins which are up- or down-regulated in this model are being identified and characterised.

Proteins from normal and persistent *in vitro* cultures are being analysed with patient samples to identify unique antigens for use in diagnostic assays.



The IP position

The team is identifying novel chlamydial antigens by various approaches and these will be patented in the near future. The team already has lodged a full patent covering the identification of novel chronic disease markers using persistence models of infection.

Timms, P. and Mathews, S. Novel Chlamydia diagnostic reagents and uses therefor. Intl. Patent Application No. PCT/AU01/01021

The Investment Opportunity

Opportunities now exist for either diagnostic or pharmaceutical companies to partner with the CRC for Diagnostics either to license the IP or to enter into an on-going collaborative arrangement.