

# Licensing Opportunity

**The PACTT is proposing an exclusive or non-exclusive license for a diagnostic test detecting emerging agents of miscarriage and pneumonia.**

**Field:**

- Diagnostic of *Waddlia chondrophila* and *Parachlamydia acanthamoebae*, two emerging agents of miscarriage and pneumonia, using serological or antibody-based tests.

**Patent Status:**

- Patent EP08172133.4 filed December 18, 2008 in the name of the University of Lausanne and naming as inventors G. Greub, D. Raoult, C. Kebbi-Beghdadi and B. Riederer.
- Patent EP09172401.3, filed October 9, 2009 in the name of the University Hospital of Lausanne (CHUV) and naming as inventors G. Greub, C. Kebbi-Beghdadi, L. Vaughan, D. Baud and B. Riederer.

**Innovative aspects:**

- Immunogenic specific antigens were identified.

**Additional information is available upon request**

(N Ref. IDF 05/08 and 17/08)

**Contact:**

PACTT  
Technology Transfer Office  
University and University  
Hospital Lausanne  
21, Rue du Bugnon  
CH - 1011 Lausanne  
Switzerland  
tel: +41 21 314 59 72  
fax: +41 21 314 49 57  
pactt.info@chuv.ch  
<http://www.pactt.ch>

## *Diagnosis of agents of miscarriage and pneumonia*

**Background**

*Waddlia chondrophila* and *Parachlamydia acanthamoebae* are two newly identified *Chlamydia*-like organisms. These two strict intracellular bacteria have been associated with miscarriage and pneumonia.

Miscarriage affects as many as 15% of clinically recognized pregnancies and sporadic miscarriage defined as two or more losses represents 5% of all women trying to conceive. However a cause is identified in only 50% of all miscarriages. Seroprevalence study demonstrated that *W. chondrophila* is associated in more than 31% of cases with miscarriages, whereas *P. acanthamoebae* is associated to 1.6% of these severe adverse pregnancy outcomes.

Hospital admission caused by community acquired pneumonia (CAP) increases of 34% in the last decade. Treatment failure is observed in 13% of hospitalized patients, whose 10% require intensive care. Among these patients, mortality rate is of 28%. Importantly, the current diagnostic approach fails to identify a causative agent in approximately 50% of cases. Serological studies have demonstrated an association of *P. acanthamoebae* with 2.2% of patients with CAP and identified a possible role of this strict intracellular bacteria in up to 13% of subjects with nosocomial pneumonia. As this agent was proved to be resistant to certain antibiotics including new quinolones, diagnosis of the causative agent of pneumonia is crucial to adapt clinical treatments.

**Description of the invention**

The invention relates to the use of peptides in the diagnosis of infection by the intracellular microorganisms: *Waddlia chondrophila* or *Parachlamydia acanthamoebae*.

**Proof of concept**

The genomes of *W. chondrophila* and *P. acanthamoebae* were sequenced and immunogenic proteins identified. The sequence of these proteins were analyzed by blast and those displaying high sequence homology with similar proteins in other species were discarded to avoid cross reactivity. Recombinant proteins were tested by ELISA to confirm their reactivity and selectivity.

**Applications**

Diagnosis of *Waddlia*-associated miscarriage and *Parachlamydia*-associated pneumonia using a serological or immunohistochemical test. In addition to their use in human medicine, these diagnostic tools may also be marketed in the veterinary sector as these bacteria were associated with abortion in bovine and small ruminants.

**Development Phase**

- Proof of concept demonstrated.
- Commercial kit to be developed.