LASER SCANNING CONFOCAL MICROSCOPY ANALYSIS OF B. HENSELAE INTERACTION TO CAT RED BLOOD CELL

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*Bartonella henselae* (*B.henselae*) is a gram negative, fastidious small bacillus. This microorganism is a pathogen for humans and is associated to the Cat Scratch Disease (CSD). *B. henselae* can cause a zoonosis involving humans as occasional host and cats as natural reservoir. The human infection is transmitted by cats bite or scratch. In general, an erythrocytic affinity is observed in *Bartonella* spp, moreover, several evidence support the conclusion that Bartonella spp. generally cause persistent infection in the susceptible host.

The infection of *B.henselae* in cats is considered asymptomatic and is characterized by extended bacteremia recurrent within 2 weeks p.i., 4-8 months up to 1 year and specific serological reaction arises at 2-4 weeks p.i. A first report based on electron microscopy showed the intraerythrocytic localization of *B. henselae* in naturally infected cat blood. The actual accepted theory sustains that red blood cells (RBC) invasion by bacterial cells is perhaps limited to a small percentage and is time-depending. A series of *in vitro* infection experiments of cat RBC with

![Figure 1: A - B. henselae adhere to RBC. Evans blue evidences RBC membrane, DAPI evidences B.henselae cells. B - Fluorescence intensity profile along the line segment of B.henselae. C - Fluorescence intensity profile along the line segment of RBC.](image)

* B. henselae* were performed to assess the localization of bacteria in the first step (one hour) of infection. All the analysis were performed with a confocal microscopy system LEICA TCS SP2. Preliminary results showed that *B.henselae* were adherent to RBC after 1 h of incubation: the percentage of RBC with adherent *B. henselae* (epicellular) was 1.8-2.3% and only less than 1% of RBC contained *B.henselae* cells inside.