

## Research program IZS VE 04/15

**Safety in canine transfusion medicine: effects of leukoreduction on the “storage lesions” and on the potential infectivity of *Rickettsia conorii* in whole blood and in blood components**

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Growing literature on the adverse effects of blood storage and the possible clinical implications for transfusion recipients has recently identified the quality of stored blood as “the most critical issue facing transfusion medicine.” All these detrimental biochemical effects can be summarized by the term “storage lesions”.

Leukocyte metabolites such as cytokines, histamine, serotonin, elastase, and acid phosphatase can contribute to transfusion reactions and increase the percentage of hemolysis in stored red blood cells (RBC). Moreover, leukocytes may be carrier of several infectious agents, such as *Leishmania infantum*, *Ehrlichia canis*, *Anaplasma* spp. and *Rickettsia* spp., which can be transmitted to the recipient by a blood transfusion. The general aim of this study is to improve the safety of stored canine blood for recipients.

Specific aims are:

- 1) to evaluate the effect of prestorage leukoreduction on the canine RBC viability and plasma cytokines content;
- 2) to evaluate the survival and potential infectivity of *Rickettsia conorii* in whole blood (WB) and in leukoreduced whole blood (LR-WB) during the storage period.