



Midcycle Review Memo

STN 125588: *BABESIA MICROTI* NUCLEIC ACID TEST
DCC Login # 607587

STN 125589: *BABESIA MICROTI* ARRAYED FLUORESCENCE
IMMUNOASSAY

Sponsor: IMUGEN™
(a division of Oxford Immunotec, Inc.)
315 Norwood Park South
Norwood, MA 02062

Date: April 18, 2015

To: File

Reviewer: Pawan K. Jain, M.D. Ph.D.
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Discipline Summary:

- Babesiosis is an intra-erythrocytic protozoa infection of the genus *Babesia*. The most common species causing human disease in the United States is *B. microti*.
- It is an obligate parasite of red blood cells and primarily transmitted to humans by ixodid (hard-bodied) ticks, however, infection can be acquired through transfusion of blood and blood products from donors infected with *Babesia*.
- The clinical symptoms of babesiosis are generally nonspecific and the diagnosis of infection with *Babesia* depends on laboratory testing.
- Babesiosis is usually a self-limiting disease and the presence of antibody to *Babesia*, from past or remote infections, is not uncommon in an endemic area population.
- Currently, there is no FDA licensed test for the clinical diagnosis of babesiosis or blood donor screening for infection with *Babesia*. There is a single question on the donor questionnaire asking if the donor has ever had babesiosis. Donors may answer 'no' to the screening question, and donors with asymptomatic infection can donate blood, potentially infecting recipients.
- IMUGEN's *Babesia* AFIA and *Babesia* Nucleic Acid Test (NAT), are both intended to screen blood donors to reduce transfusion-transmitted babesiosis (TTB).
- In response to a CR letter, the Sponsor clarified that study # 1 was conducted during the development phase of the assay, and therefore it is not a part of the final BLA for both assays.
- The Sponsor proposed a final S/CO ratio for the AFIA of 1:128 dilution, which was discussed in review committee meetings and through supervisory decision was found to be acceptable. Therefore, mid-cycle review comments based on dilution of 1:64 in study # 4 are obsolete. On FDA's recommendation AFIA specificity in studies 2 and 3a was re-calculated using a single dilution of 1:128. The Sponsor provided appropriate explanation for the specimens that were excluded from the analysis.
- Specificity of the NAT assay in studies 2 and 3a was re-calculated using single cut off for human 18s RNA (internal control).
- The Sponsor dropped the claim for testing (b) (4) using NAT and AFIA assays, and clarified all remaining clinical comments, and there are no additional issues.

Comments:

The response to clinical questions is acceptable and there are no additional comments.

Recommendation:

Based on my review there are no outstanding comments on the clinical section and I recommend licensing these BLAs.