Diagnostics and biomarkers

**PO - (8441) - EXPERIMENTAL COMPARISON OF SENSITIVITY OF LAMP AND REAL TIME PCR**

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**Background:** Human African trypanosomiasis, or sleeping sickness, remains a serious problem in tropical Africa. Timely diagnosis of this disease requires systematic population screening, particularly for *Trypanosoma brucei gambiense*, which has a long asymptomatic period. The lack of sensitivity and specificity of conventional diagnostic tests has led in recent years to the use of molecular tools. Amplification of parasite-specific DNA sequences significantly improved diagnosis of infection. However, these molecular tools still have some limitations especially in the case of low parasitemia. Furthermore, research is still needed to make molecular detection a real tool for control and fight against sleeping sickness. The purpose of this study is to determine the threshold of sensitivity of the Real-Time PCR using the 18S and TgsGp primers and of the LAMP technique, applied in the DiTECT-HAT project as molecular reference tests.

**Methods:** we used serial dilutions containing 0, 1, 10, 100, 10³, 10⁴, 10⁵, 10⁶ parasites per ml of blood. Samples were extracted and DNA was amplified.

**Results:** The analytical sensitivity of the 18S Real-Time PCR with the Taqman probe of the filter paper samples is 100 parasites / ml and that of the TgsGp Real-Time PCR with the Taqman probe of filter paper samples is 10⁴ parasites / ml. For Lamp technique, the analytical sensitivity is 10³ parasites / ml.

**Conclusion:** this study shows that a "negative PCR" would not mean "no parasite". It suggests that DNA detection techniques should still be improved.