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## Diagnosis of equine trypanosomiasis by molecular detection of 7SL-derived small RNAs: a promising alternative to serological diagnosis?

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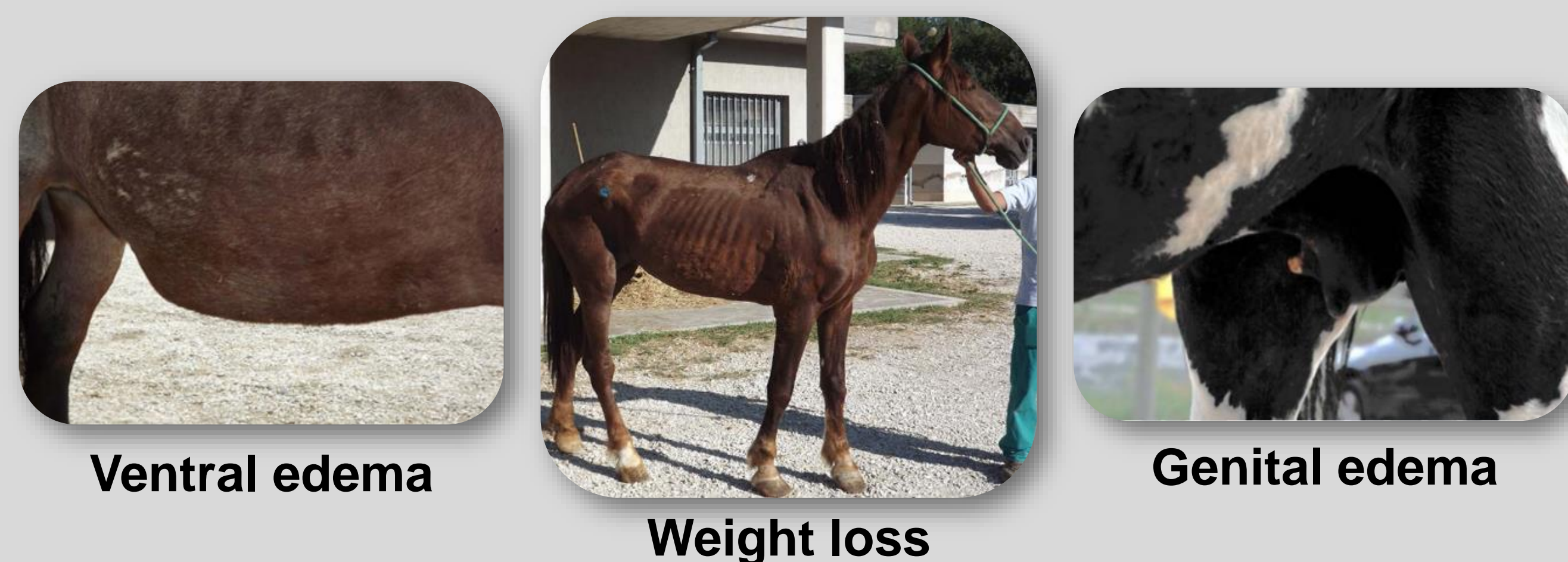
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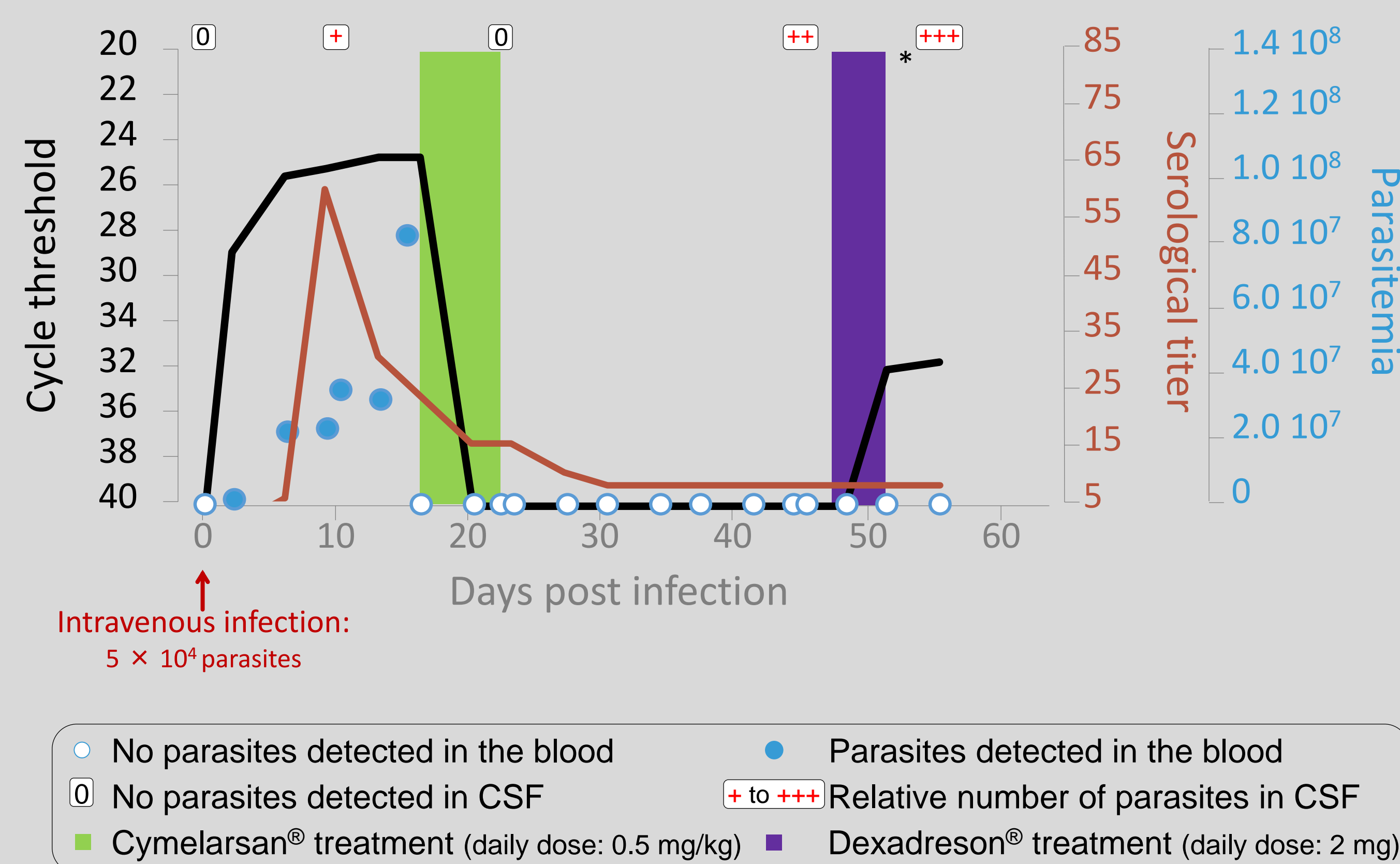
### INTRODUCTION

Dourine is an equine trypanosomiasis, a parasitic disease caused by *Trypanosoma equiperdum*. Given the absence of vaccine and efficient drugs, equine trypanosomiasis constitute a major health and economic problem for international trade.



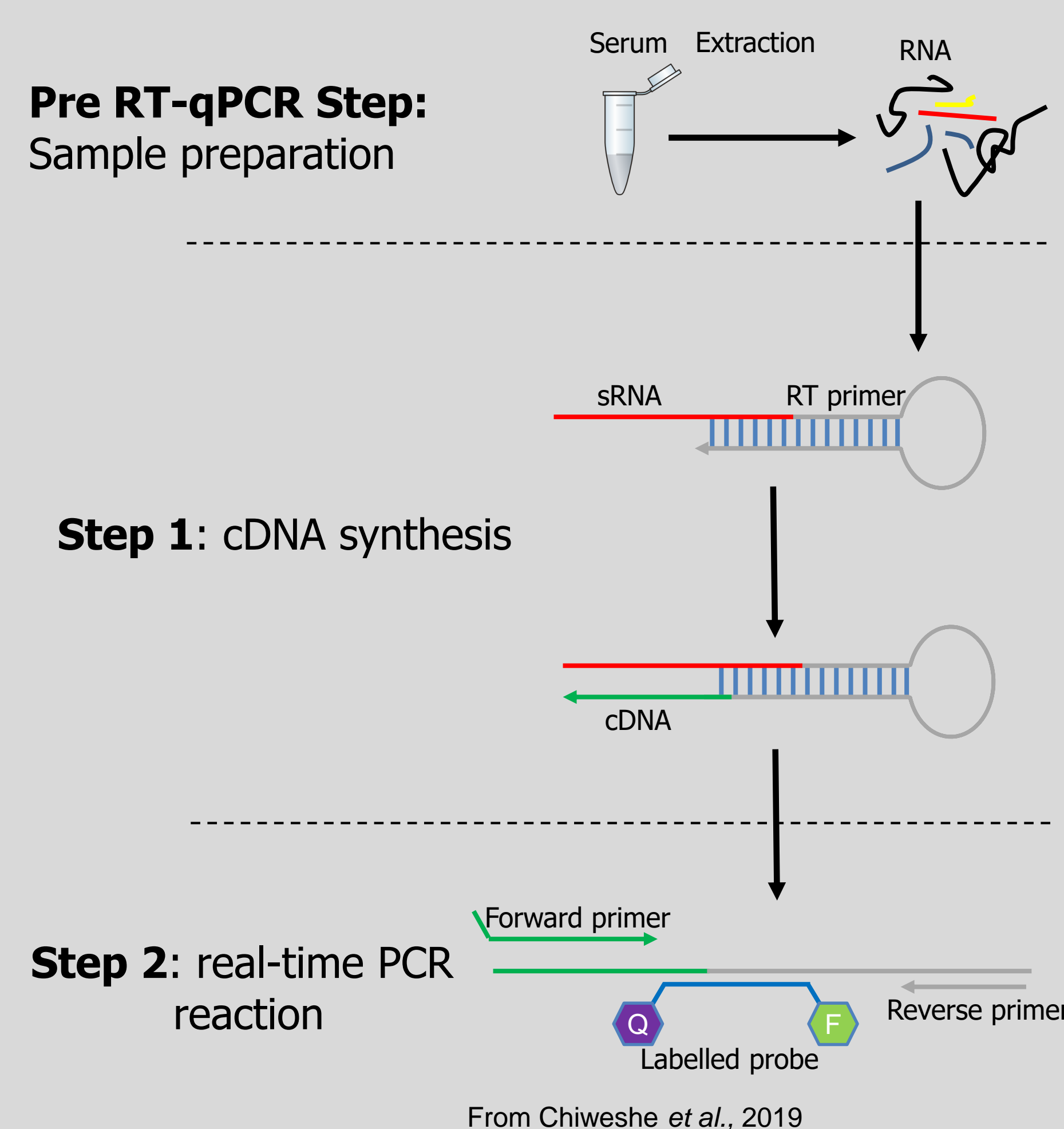
Diagnosis of equine trypanosomiasis is a challenge, but it has been recently demonstrated that a small RNA (7SL-sRNA) is secreted in high concentration in the serum of infected horses. In collaboration with the Roslin Institute in Edinburgh, this study aimed to determine if the detection of the 7SL-sRNA by RT-qPCR represents a suitably sensitive and specific marker for detection of *T. equiperdum* OVI infection.

### DETECTION OF 7SL-sRNA IN ANIMALS INFECTED BY *T. EQUIPERDUM*



- Fast accumulation of 7SL-sRNA in blood.
- Rapid disappearance of signal after trypanocidal treatment.
- Relapse detected following immunosuppressive treatment.
- 100% of specificity (tested on 63 seronegative sera)

### 7SL-sRNA TAQMAN RT-qPCR ASSAY



Schematic representation of the Taqman RT-qPCR assay.

### CONCLUSIONS

- RT-qPCR assay targeting trypanosome 7SL-sRNA:
  - Is highly sensitive.
  - Predicts active infections and parasite clearance.
- This tool allows a rapid, sensitive and specific detection of *Trypanosoma* infection!

### OUTLOOK

- Evaluate the methods with sera from naturally infected animals.
- Standardize this method and implement it as an alternative method for dourine diagnosis.