GENETIC CHARACTERISATION OF *TRYPANOSOMA BRUCEI* IN PIGS OF ENDEMIC AND HISTORICAL FOCI FOR A SUSTAINABLE ELIMINATION OF HUMAN AFRICAN TRYPANOSOMIASIS IN CÔTE D'IVOIRE

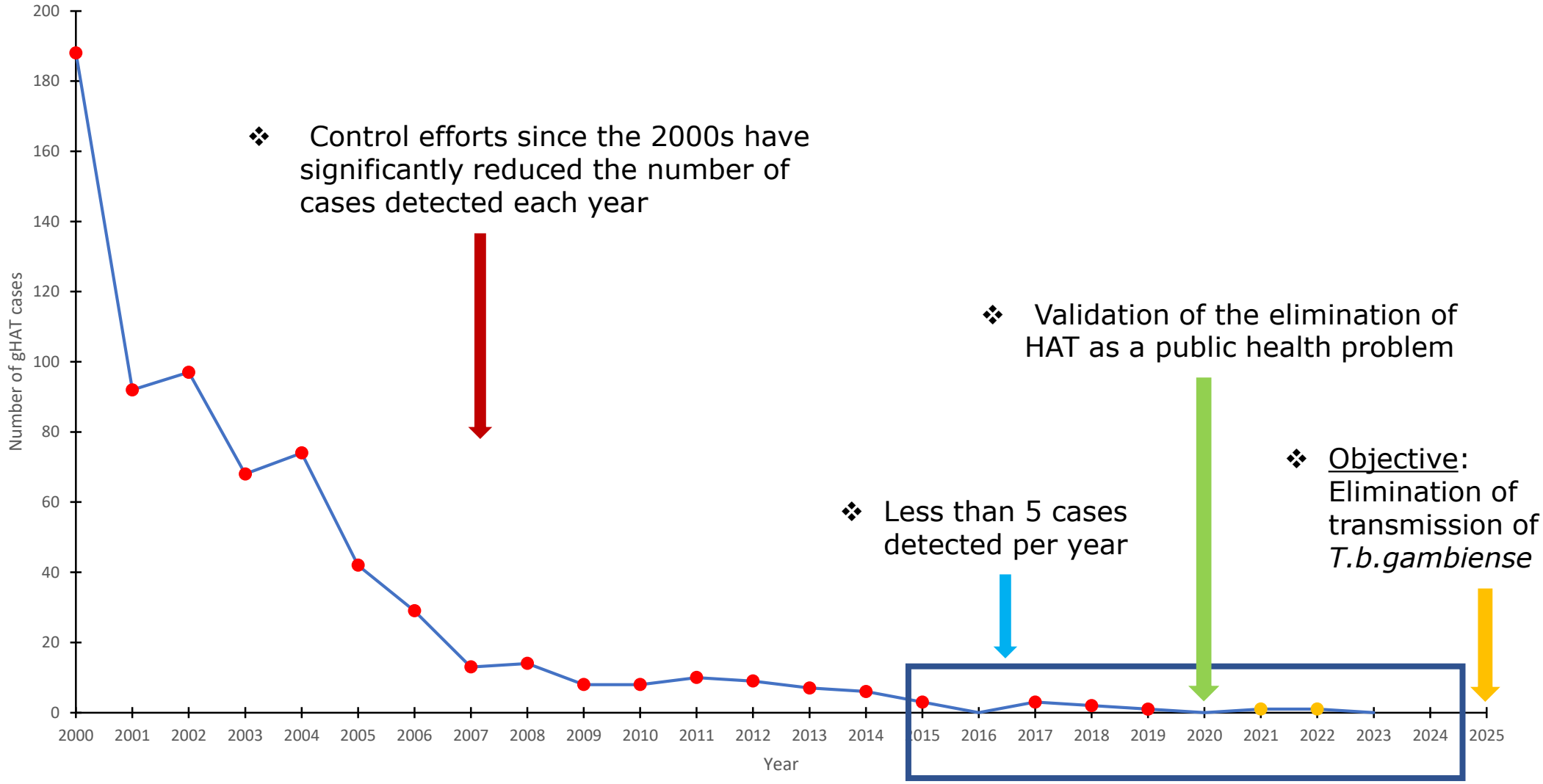
37 th ISCTRC Conference

Nairobi, Kenya

15th-19h September 2025

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Context and justification: Current HAT situation in Côte d'Ivoire



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- Residual reservoirs of *Tbg* may exist in animals

- In Vavoua historical HAT focus, isolated strains in pigs tested positive for TgsGP PCR, specific of *Tbg* but still some doubts about of the presence of human strains of *Tbg* in animals (Traoré et al. 2021)

- We conducted a population genetics study using samples collected in pigs

Objective: Assessing the genetic diversity of *Tb* s.l. circulating in pigs and compare genotypic profiles with those of human strains

Study areas

- Sinfra and Bonon endemic HAT foci
- Vavoua historical HAT focus

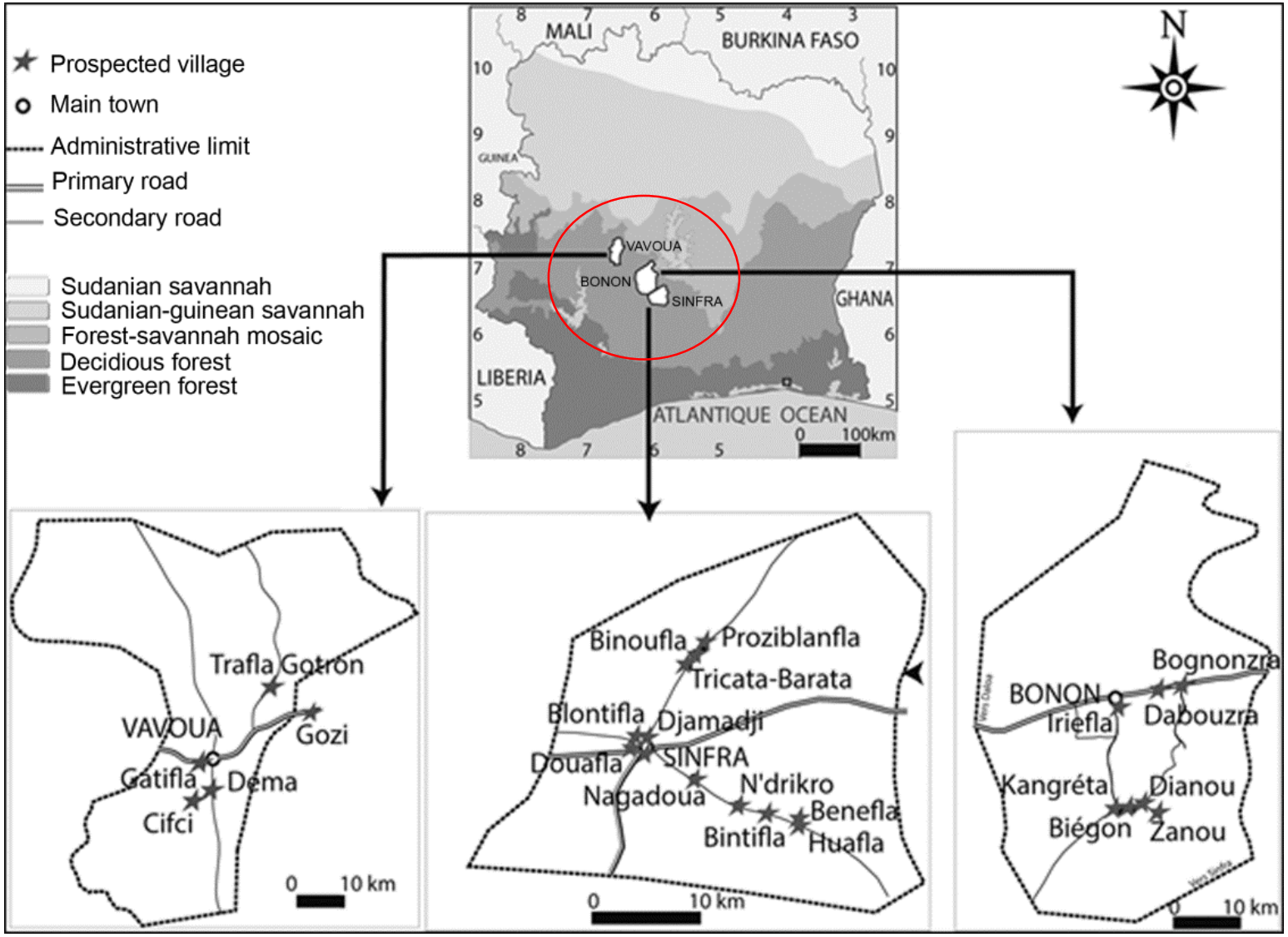


Figure 1 : Study areas and sites of sampling of *Tb* s.l. from pigs

Sampling

	DNA samples	
	biological samples	isolated stock samples
Bonon	11	3
Sinfra	29	17
Vavoua	20	20
Total	**60**	**40**

- Both selected BS and IS were positive with the TBR1-2 PCR specific of *Tb* s.l..

- PCR TgsGP , which is described as specific to *Tbg* / genetically characterised using eighteen microsatellite primers

- DNA from 27 reference isolated stocks of *Tbb* (n=10)*, Tbg1* (n=13) and *Tbg2* (n=4) were also included in this study

Results

❖ **PCR TgsGP**

Five strains isolated from pigs in Vavoua tested TgsGP PCR positive

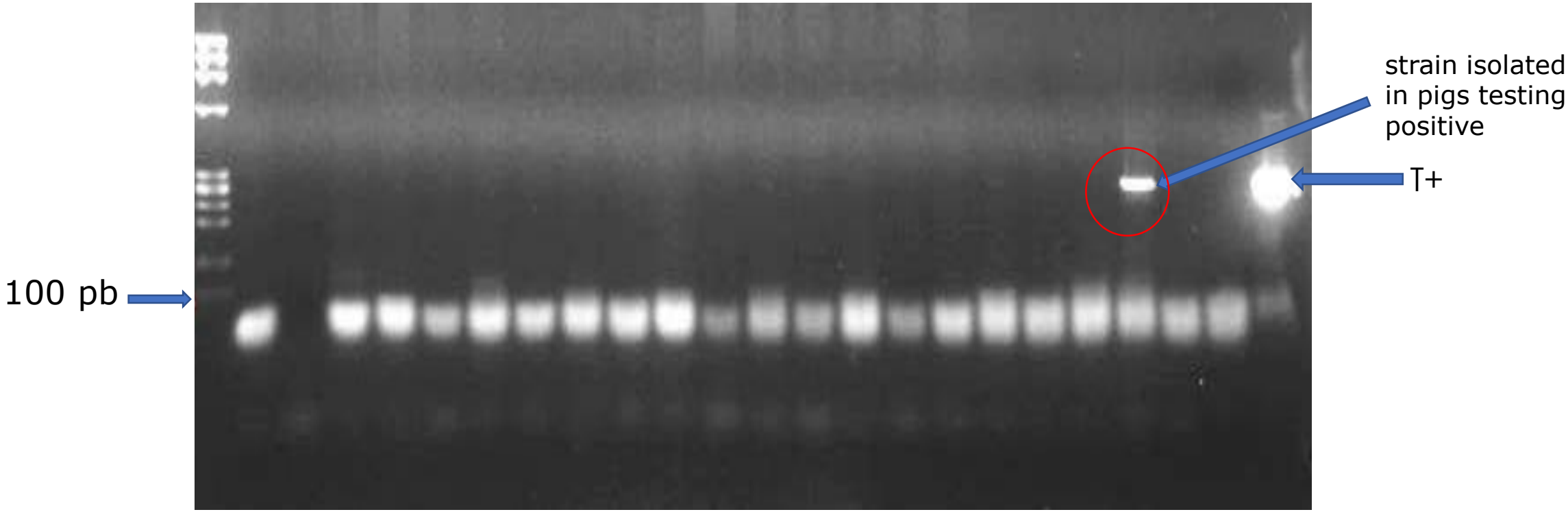


Figure 2 : Electrophoresis gel showing PCR amplification products of TgsGP

Results

❖ **Microsatellite genotyping**

✓ *Tbg*1(light blue) reference stocks took place in a distinct clade

✓ *Tbg*2 (gold) and *Tbb* (green) reference stocks and both BS and IS, occurred in a scattered order in the tree

✓ **TgsGP positive IS looked very distant from the *Tbg*1 clade**

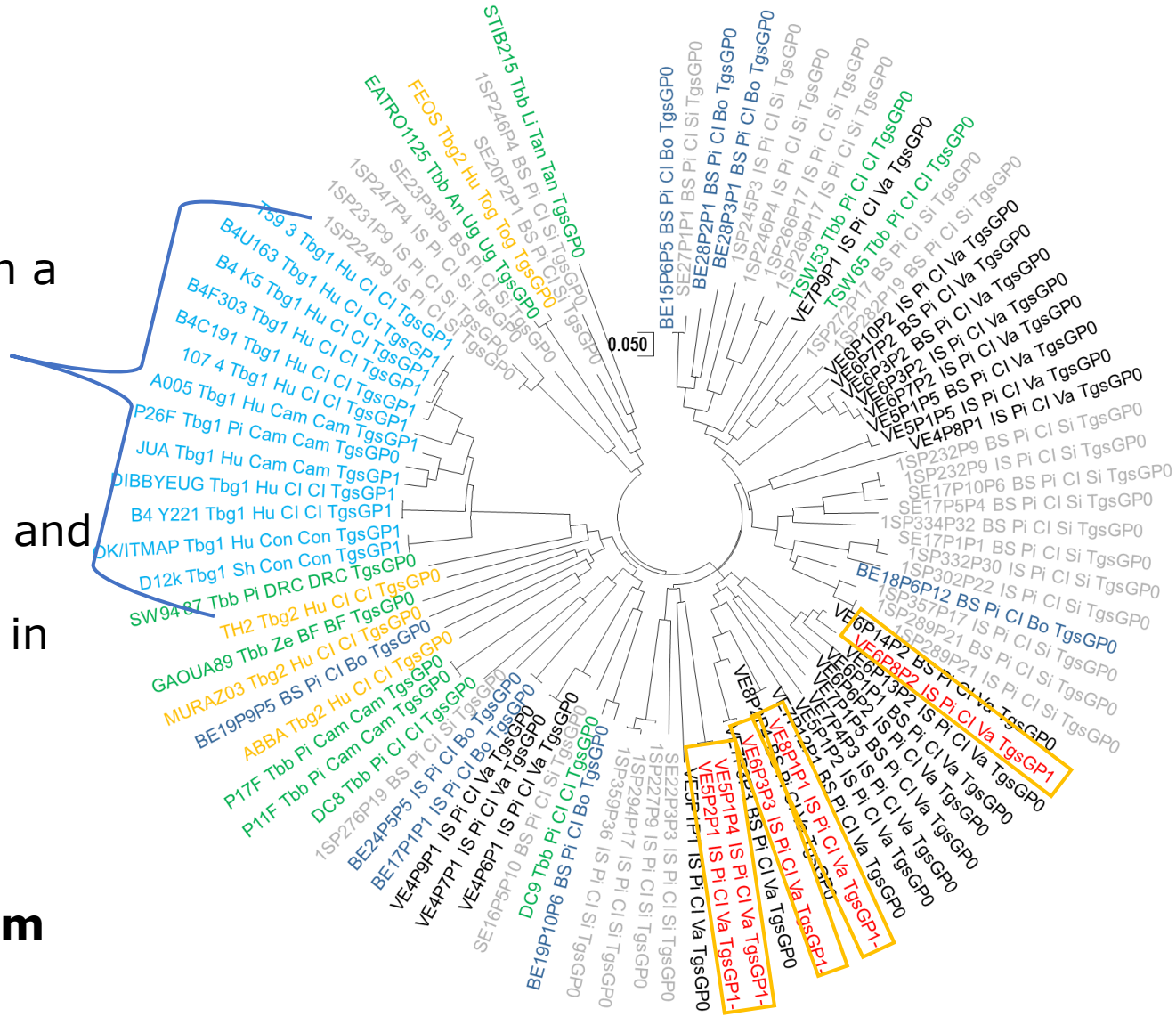


Figure 2: Neighbor-joining Tree (NJTree) of trypanosome stocks

Discussion

- The results of the TgsGP PCR call into question the specificity of this PCR, as no cases of HAT have been detected the Vavoua historical HAT focus since 2011 (Traoré et al., 2021)
- The TgsGP PCR-positive samples did not correspond to *Tbg*1 on the basis of their genotypic profile
- TgsGP PCR and microsatellite genotyping results suggested that *Tbg*1 is not circulating at a detectable level in pigs in HAT foci in Côte d'Ivoire

We can not conclude!!



- This is why it is still very difficult at present to assess the precise role of animal reservoir in the epidemiology of HAT

Perspectives

- ✓ Need to develop more effective tools to study the epidemiological role of the potential animal reservoir of *Tbg*

- ✓ Need to isolate of maximum strains to better understand the relations between *Tbb* and *Tbg* using population genetic study

- ✓ Need to evaluate the resistance of these strain to human serum and study the mechanisms involved

Thank you


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