

# Galba truncatula and Helminths, the Importance of Microbes



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## BACKGROUND

- Liver fluke and Rumen fluke are primarily veterinary diseases
- Resistance to triclabendazole is emerging in liver fluke<sup>(1)</sup>
- Snails act as the intermediate host for both parasites. The primary purpose of the snail haemolymph is nutrient distribution and immune protection<sup>(2)</sup>.
- The haemolymph has a diverse microbiome<sup>(3)</sup>. The invading parasite is constantly in contact with the snail haemolymph<sup>(4)</sup>.

## AIMS & HYPOTHESIS

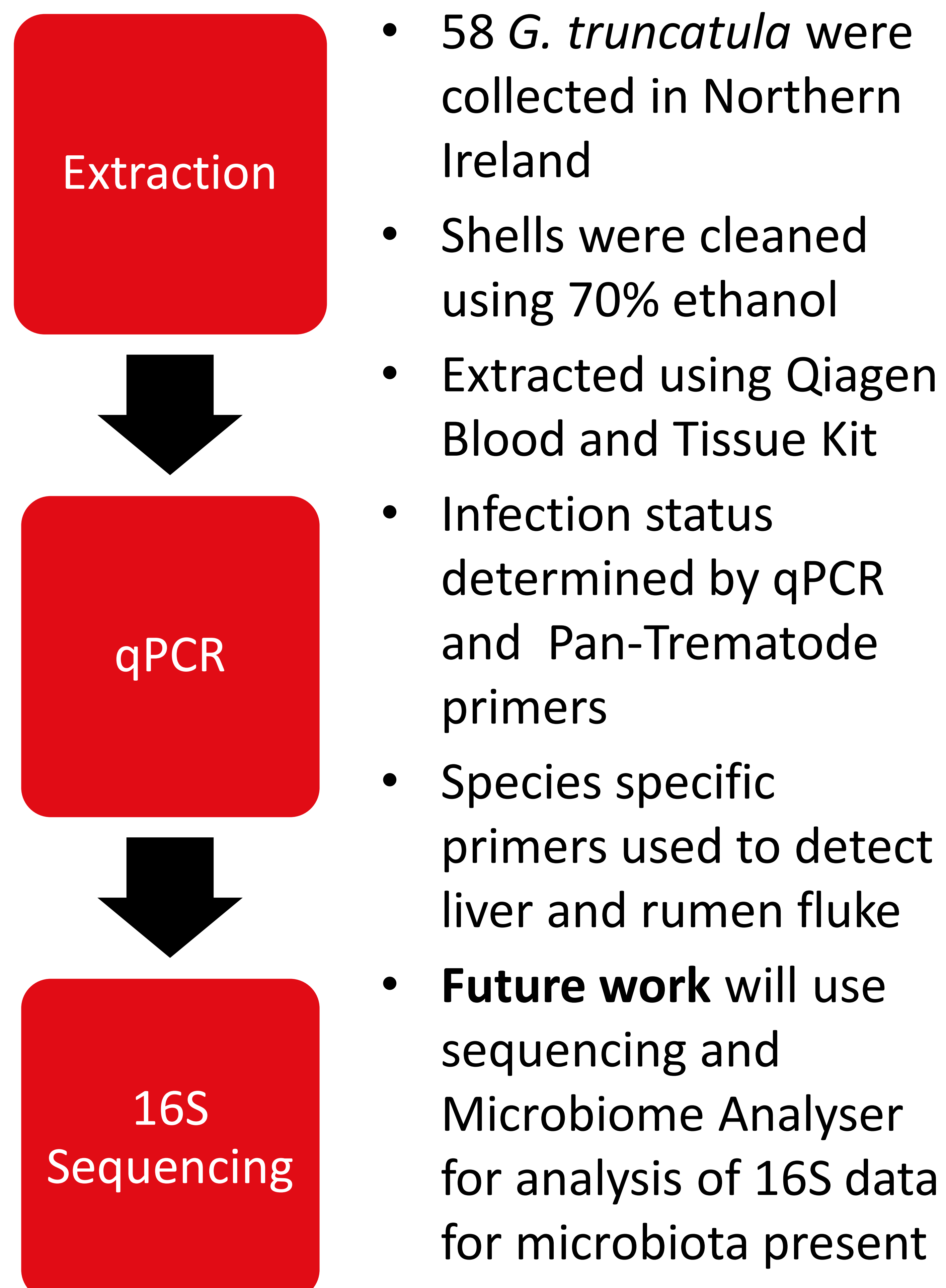
### Aims:

1. Profile the microbiome of snail species with/without helminth infection
2. Investigate the role played by the microbiome introduced by the invading helminth
3. To investigate functional roles played by the snail microbiome using microbiologically methods

### Hypothesis:

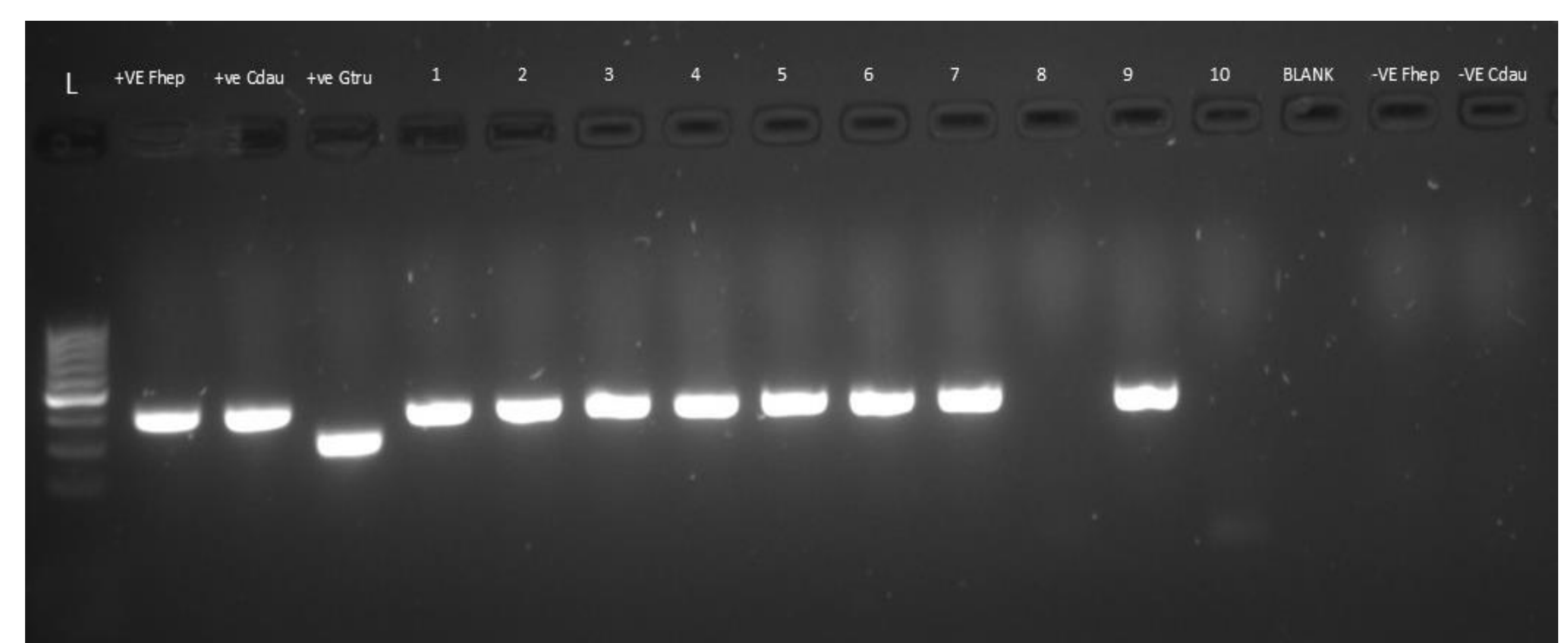
Naïve snails will have a different microbial composition than helminth infected snails.

## METHODS



## RESULTS

- 40 infected snails of 58 collected
- Infection status determined through analysis of qPCR and gel electropherograms (see **Figure 1**)
- Infected and naïve snails will be sequenced to profile their respective microbiomes



**Figure 1** – Gel electrophoresis showing 100kb ladder, positive controls (Pan- Trematode), 10 snails – 8 positive, 2 negative, & negative kitome controls. Band size 362bp represents positive result for infected snails. Band size 288bp represents *Galba truncatula* positive control.

(1) Kelley, et al., 2016. *Trends in Parasitology*, 32(6), pp.458-469. (2) Souza, S.D.S. and Andrade, Z.A., 2012. *Memórias do Instituto Oswaldo Cruz*, 107, pp.598-603. (3) Chevalier, F.D., et al., 2020. *Environmental microbiology*, 22(12), pp.5450-5466. (4) Clec'h, L., et al., 2016. *Parasites & Vectors*, 9(1), pp.1-11.