

## **SNPS/INDELS IDENTIFICATION IN GENOMIC REGIONS OF ABC TRANSPORTERS IN SUSCEPTIBLE AND IVERMECTIN-RESISTANT HAEMONCHUS CONTORTUS**

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*Haemonchus contortus* is an economically important parasite of small ruminants but its control has been a widespread problem due to resistance against most anthelmintic drugs. Ivermectin is a broad-spectrum anthelmintic commonly used in livestock and its mechanism of resistance is of great challenge to our understanding. Due to the complex association between genetic changes and ivermectin's low efficacy, it has been difficult to identify a single molecular marker for resistance. A field isolate of *H. contortus*, IVR1503, highly resistant to ivermectin was isolated from sheep and 8000 larvae were passaged through experimental animals. We analyzed the presence of polymorphisms from the IVR1503 at genomic regions encoding the ATP binding cassette (ABC) transporter family. The data were compared to a fully drug-susceptible isolate of *H. contortus*, PF23. The susceptible MHco3 strain was used as the reference genome. This study reports the final set of high-quality variants for single nucleotide polymorphisms (SNPs), and small insertions and deletions obtained from the Illumina next-generation sequencing of genomic DNA of both isolates. A total set of 179 variants (132 SNPs, 47 indels) to IVR1503 and 60 variants (34 SNPs, 26 indels) to PF23 were selected in the ABC region. The genetic variation levels were markedly higher in IVR1503, and the features and pattern of all these polymorphic sites were analyzed and compared within and between IVR1503 and PF23. We found genetic regions showing a different/unusual pattern of polymorphisms in the resistant isolate. This study provides a rich data of putative SNPs/indels of specific regions that could be used to evaluate and validate molecular markers for studies of genetic and association mapping. Validation of these variants will be important to future work on the diagnosis of ivermectin resistance. Furthermore, these results shall contribute to the advancement of genetic studies and anthelmintic resistance in *H. contortus*.

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