

# WAAVP



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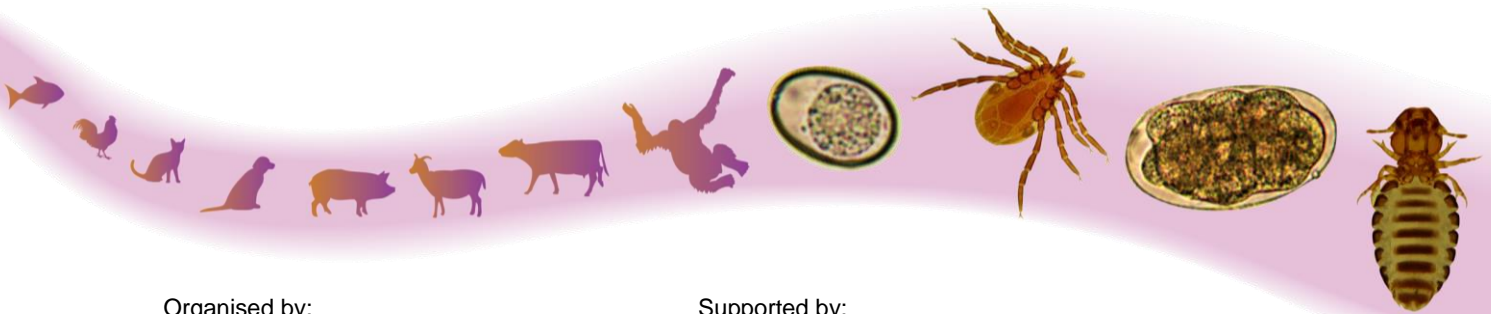
## 26<sup>th</sup> International Conference of the World Association for the Advancement of Veterinary Parasitology

In conjunction with 53<sup>rd</sup> MSPTM Annual Conference

*Conference Theme*

# Combating Zoonoses: Strength in East-West Partnerships

## ABSTRACT BOOK



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**Further evidence of P-glycoprotein involvement in resistance to ivermectin in adult stages of *Haemonchus contortus***

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**Abstract Content**

The efflux transporter P-glycoprotein (P-gp) has been implicated in drug resistance of nematodes affecting livestock. Increased expression of P-gps in nematodes after *in vitro* as well as *in vivo* exposure to anthelmintics suggests a role of P-gps in the efflux of these drugs. The present work evaluated the expression of different P-gps genes in a laboratory selected ivermectin (IVM)-resistant isolate of *H. contortus in vivo* exposed to IVM. Six lambs were experimentally inoculated with a a laboratory selected IVM-resistant isolate (L<sub>3</sub>) and adult parasites were collected at 0 (control), 6, 12 and 24 h post oral treatment with IVM (9 X therapeutic dose). The expression profiles of several P-gps was studied by qPCR using ACTB as a reference gene. P-gp1, P-gp3, P-gp9 and P-gp11 gene expression decreased along the different experimental times. P-gp2 increased its expression in a time-dependent manner (181, 200 and 248 % at 6, 12 and 24 h post-administration, respectively). P-gp12 was not detected under our experimental conditions. Overexpression of membrane drug transporters including P-gp have been associated with IVM resistance in different nematodes. However, the high variability observed in the expression profiles of the analyzed genes and the large genetic diversity within the resistant isolates hamper the comprehension of the resistance mechanisms against anthelmintic drugs. Currently, no consistent pattern has been observed between different nematode species in terms of up-regulation of ABC transporters such as P-gp after treatment with IVM. Further studies are needed to improve the understanding of resistance mechanisms in adult-stage of *H. contortus*.