Dottorato di ricerca in Scienze Veterinarie - XXXVI Ciclo - Anno di corso: 3°Dott. Bonetti AndreaCurriculum: Produzioni Animali e Sicurezza AlimentareSupervisor: Dr.ssa Ester Grilli

A thymol-based blend of botanicals protects intestinal cells during a chronic inflammatory challenge in vitro



Day 7

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Caco-2 cells

Harvesting

mRNA isolation and oPCE

gene expression analysis

Days 1 to 7

nsepithelial Electrica

Resistance (TER)

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0.4 µm Transwell inserts

INTRODUCTION

Botanicals represent a wide class of natural bioactive compounds that contain **active principles** with numerous biological functions. Amongst them, the **antiinflammatory action** is of pivotal importance to support the **intestinal health** of **pigs** during stressful phases.

AIM OF THE STUDY

The aim of the study was to investigate the ability of a **thymol-based blend of botanicals** (BOT) to protect intestinal Caco-2 cells from the damages induced by a **chronic inflammatory challenge** *in vitro*.



DISCUSSION AND CONCLUSION

- BOT was able to maintain epithelial integrity in vitro by helping enterocytes to face a chronic inflammatory stress.
- This thymol-based blend of botanicals



has the potential to be **further investigated** *in vivo* as a dietary supplement to support intestinal health of animals during stressful phases.





MATERIALS AND METHODS



TER data (n=6) analyzed with Two-Way ANOVA; in graph, superscript letters indicate significant differences within each timepoint. Gene expression data (n=6) analyzed with One-Way ANOVA and Tukey post-hoc test; in graphs, superscript letters indicate significant differences; pairwise comparisons performed with T test with p values above horizontal bars.

All data are displayed as means \pm SEM. Differences considered significant at p < 0.05.



RESULTS



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