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## Use of colistin sulfate for the oral treatment of experimental post-weaning diarrhea in pigs: Therapeutic efficacy and antibiotic resistance

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A ntibiotic resistance development is a challengefor bothhumanand veterinary medicine. Enterotoxigenic Escherichia coli (ETEC: F4) associated withpost-weaning diarrhea (PWD) in pigs has developed resistanceagainstseveralantimicrobial families, leading to an increase use of colistin sulfate (CS) for the treatment of this disease. The objective of this study was to determine the efficiency of oral CS treatment in experimental PWD due to ETEC: F4 challenge and determine the effect of this therapeutic regimeninE. coli resistance apparition. In this study, 48 pigs were divided intofour groupsof12pigs each: challenged treated, challenged untreated, unchallengedtreatedand unchallenged untreated group. Fecal ETEC: F4, total E. coli population, CS-resistant E. coli shedding were evaluated. The MIC was carried out by microdilution method using a sterile 96-well polystyrene microplate.

CS treatment resulted in areduction fecal ETEC: F4 and E. coli population shedding butonly during the treatment period. However, CS treatment resulted in an increase in fecal shedding of CS resistant E. coli. Results indicated thatsomeE. coliisolateswereconfirmedresistant to CS.

Our study is among the first to demonstrate that under controlled farming conditions, CSwas effective to reducefecal shedding of ETEC: F4 and total E.coli population in experimental PWD. However, CS treatment was associated with a selection pressure on E. coli. Further studies areneeded infield conditions, to better characterizeCS E. coli resistance dissemination in meat and in the environment.

## **Biography**

Alexandre Thibodeau has completed his PhD at the University of Montreal and is currently doing postdoctoral studies at the NSERC industrial research chair in meat safety in Dr Ann Letellier laboratory at the Faculty of veterinary medicine of the University of Montreal. He is a specialist of Campylobacter jejuni and his postdoctoral research focuses mainly of C. jejuni and the chicken microbiome.

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