Antimicrobial peptide CAP18 and its effect on Yersinia ruckeri infections in rainbow trout Oncorhynchus mykiss (Walbaum): comparing administration by injection and oral routes

The antimicrobial peptide CAP18 has been demonstrated to have a strong in vitro bactericidal effect on Yersinia ruckeri, but its activity in vivo has not been described. In this work, we investigated whether CAP18 protects rainbow trout Oncorhynchus mykiss (Walbaum) against enteric red mouth disease caused by this pathogen either following i.p. injection or by oral administration (in feed). It was found that injection of CAP18 into juvenile rainbow trout before exposure to Y. ruckeri was associated with lowered mortality compared to non-medicated fish although it was less effective than the conventional antibiotic oxolinic acid. Oral administration of CAP18 to trout did not prevent infection. The proteolytic effect of secretions on the peptide CAP18 in the fish gastrointestinal tract is suggested to account for the inferior effect of oral administration.

General information
Publication status: Published
Organisations: National Food Institute, Research Group for Gut Microbiology and Immunology, Research group for Genomic Epidemiology, National Veterinary Institute, Section for Bacteriology, Pathology and Parasitology, University of Copenhagen, Aalborg University, BioMar A/S
Contributors: Chettri, J. K., Mehrdana, F., Hansen, E. B., Ebbensgaard, A. E., Overgaard, M. T., Lauritsen, A. H., Dalsgaard, I., Buchmann, K.
Pages: 97-104
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 40
Issue number: 1
ISSN (Print): 0140-7775
Ratings:
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
Original language: English
Keywords: Antimicrobial peptide, CAP18, Rainbow trout, Yersinia ruckeri
Electronic versions:
DOIs: 10.1111/jfd.12497
Source: FindIt
Source ID: 2306040474
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review