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ABSTRACT BOOK

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Nodavirus infection alters immunity in European sea bass at gene and protein levels

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The nervous necrosis virus (NNV), a single stranded RNA virus, produces the viral encephalopathy and retinopathy (VER) disease that is considered one of the most serious viral diseases in marine aquaculture, being the European sea bass (*Dicentrarchus labrax*) one of the most susceptible species. Several studies have suggested that the reason for this great susceptibility is an impairment of the local immunity response. Thus, our aim was to evaluate the sea bass immunity at protein level, for the first time, and to compare to the available mRNA data. For this, European sea bass specimens (18±0.8 g) were intramuscularly injected with NNV (RGNNV strain). Samples were processed 1 and 5 days later for gene expression, by means of real-time PCR, and for protein levels, measured by ELISA using in-house produced polyclonal specific antibodies. Our results show that NNV infection mainly produces significant reductions of CD8a, perforin, interferon gamma, NK-lysin, dicentracin and hepcidin in several tissues, which were more pronounced in the brain and spleen. In conclusion, this is the first time the protein levels were studied and they confirm that the immune response might be impaired and the reason for the high susceptibility of sea bass specimens to NNV. This data suggest that the cell-mediated cytotoxicity and the antimicrobial responses are impaired in sea bass tissues. This study represents an advance on our knowledge about the interaction between host and NNV, needed to understand the virus immune evasion strategies in adult fish. (Support: Grants AGL2013-43588-P and AGL2016-74866-C3-1-R (MINECO and FEDER), FONDECYT 1140797 (Chile) and 19883/GERM/15 (Fundación Séneca de la Región de Murcia, Spain) are gratefully acknowledged. Y. Valero was supported by Banco Santander for the funding grant program *Becas Iberoamérica. Santander Investigación* in 2016/2017 announcement. F.A. Guardiola wants to thank the *Fundação para a Ciência e Tecnologia* (Portugal) for his grant (SFRH/BPD/104497/2014)).

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