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ABSTRACT BOOK

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Inactivated nervous necrosis virus (NNV) vaccine elicits antiviral activity and protection in the teleost European sea bass (*Dicentrarchus labrax*)

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Nodavirus (NNV; *Nodaviridae* family, *Betanodavirus* genus), is one of the most threatening virus for teleost fish and causes the viral encephalopathy and retinopathy (VER) disease that alters brain and retina structure and function. Among marine fish, the European sea bass (*Dicentrarchus labrax*), a very relevant species in Mediterranean aquaculture, is one of the most susceptible species, being larvae and juvenile stages those suffering highest mortalities. Though some laboratory vaccines have been tested their transference to the market has been much reduced and with unknown efficacy. Thus, our aim was to generate an inactivated NNV vaccine for sea bass and evaluate the immunity and protection conferred. To this end, sea bass specimens of 10 g were intraperitoneally injected with UV-inactivated NNV (iNNV) and after 1 month infected with a lethal dose of NNV. Antiviral activity and specific antibody levels were determined in serum samples as well as the fish protection. The vaccine elicited antiviral activity and antibody levels in sea bass specimens as well as increased the relative protection survival up to 57.9%. Interestingly, in specimen vaccinated with the iNNV vaccine the antibody levels were significantly increased in sea bass specimens 2 days after infection. This is one of the few NNV vaccines tested in sea bass and the protection conferred was very similar to other NNV vaccine types tested in other fish species. In conclusion, we have generated an effective iNNV vaccine that protects European sea bass specimens by increasing the antiviral activity as well as the antibody levels. More efforts are needed to generate potent anti-NNV vaccines that could be applied to the aquaculture sector. (Support: Grants AGL2013-43588-P and AGL2016-74866-C3-1-R (MINECO and FEDER) and 19883/GERM/15 (*Fundación Séneca de la Región de Murcia*, Spain) are gratefully acknowledged).

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