

First detection of anguillid herpesvirus 1 (AngHV1) in European eel (*Anguilla anguilla*) and imported American eel (*Anguilla rostrata*) in Poland

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Abstract

Herpesvirus anguillae (HVA, AngHV1) belongs to the biggest group of DNA viruses known to induce disease in eel and poses a real threat to both farmed and wild eel species. Mortality rates in eels caused by AngHV1 range from 1% to 10%, and may increase up to 50% under stressful conditions. Since 2007, the European eel has been placed in the CITES list, and restoration of its population has been conducted, among other methods, by active restocking and introducing protective fishing regulations. The aim of the present work was to detect AngHV1 in eel and to evaluate the risk connected with its presence. This study was based on 60 specimens belonging to the genus *Anguilla* (European eel n = 50, Japanese eel n = 8 and American eel n = 2), collected from north-western Polish waters (Dąbie Lake, Szczecin Lagoon), China (food product for direct human consumption) and Denmark (breeding material). It is the first detection of AngHV1 in eel (*Anguilla anguilla*) in the Polish territory and in American eels (*A. rostrata*) from China at Polish fish processing plants. However, in imported Japanese eels (*A. japonica*) from China, AngHV1 was not detected.

Introduction

Herpesvirus anguilla (AngHV1) was first observed in skin lesions of the European eel (*Anguilla anguilla*) by electron microscopy (Békési et al., 1986). Its detailed systematic infection was established by Sano et al. (1990), who conducted studies on two eel species: *A. anguilla* and *A. japonica*. According to Ueno et al. (1992), the morphology of the virus was always identical and did not show any modifications (isolate differences) from one eel species to another.

In Europe, AngHV1 (*Alloherpesviridae*) was for the first time described in an eel farm in the Netherlands, in 1998 (Davidse et al., 1999), and then its presence was confirmed both in fish farms and in natural waters i.e. in Japan, Taiwan, Italy, France and Germany (van Ginneken et al., 2004; Jakob et al., 2009; Haenen et al., 2010; Van Beurden et al., 2012). AngHV1 belongs to the most numerous group of DNA viruses encountered in fish and because of its

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