73. Flatfish fishery : impact & challenges.

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Sole (*Solea solea*) and plaice (*Pleuronectes platessa)* are by far the most targeted marine organisms by the Belgian fishermen. Both demersal fish species are mainly caught using beam trawls with tickler chains. However, this fishing technique has several disadvantages including seabed disturbance, excessive discards and high fuel consumption. Alternative passive techniques such as fly shooting, gill nets or long lines encounter much less this problems, but they are hardly economically feasible or too dependent on the weather conditions to be fully effective. Adequate long-term solutions hence are indispensable to ensure a sustainable and profitable future for the flatfish fishery. The most promising alternative meeting both the fisherman's aspirations and the need for ecological progress is pulse fishing. This technique replaces the tickler chains by electrodes towing over the sea floor and inducing electrical pulses, which elicit an upward movement of the fish enabling its catch without spading the bottom. Pulse fishing, using high frequency and voltage pulses, is currently evaluated for catching sole. Hitherto, several plus points are discernible in comparison to the classical trawl fishery: marked decrease in seabed disturbance, reduction of bycatch and halved fuel consumption. Unfortunately, also negative effects such as dislocated spinal cords, hemorrhages and mortality were observed in certain exposed fish species, especially cod. These adverse effects need to be tackled in order to be able to define pulse fishing as an environmental friendly fishing technique. Further studies hence are needed to define and optimize pulse characteristics for stimulating flatfish that are not harmful for exposed marine organisms.

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74. *cis*-Acting Inhibition of MHC class I-restricted Epitope Presentation by *Alcelaphine herpesvirus 1* genome maintenance protein.

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γ-Herpesviruses persist as latent episomes in actively dividing lymphocytes. Their consequent need to express a viral genome maintenance protein (GMP) during latency presents a potential immune target. However, the GMPs from several γ-herpesviruses have evolved related strategies to limit their own MHC class I epitope presentation to cytotoxic T lymphocytes (CTLs). *Alcelaphine herpesvirus 1* (AlHV-1) is a γ-herpesvirus that persists asymptomatically in its natural host, the wildebeest. However, AlHV-1 transmission to a large number of susceptible ruminants, including cattle, results in the development of a lethal lymphoproliferative disease named malignant catarrhal fever (MCF). We recently demonstrated that the AlHV-1 GMP-homologue encoded by ORF73 is highly expressed during MCF and that the impairment of its expression renders AlHV-1 unable to induce MCF. With its 1300 aa, AlHV-1 ORF73 is the largest γ-herpesvirus GMP described to date and contains a large acidic internal repeat region that could be involved in the *cis*-acting CTL evasion mechanism. Here, we sought to determine the CTL evasion properties of AlHV-1 ORF73. We first performed bioinformatic analyses to characterize the protein domains. Then, we used an *in vitro* assay to demonstrate that ORF73 severely limits the presentation at the cell surface of an MHC class I-restricted epitope linked to ORF73 in *cis*. These results suggest that AlHV-1 has developed mechanisms to evade cytotoxic anti-viral response during latency. The exact mechanisms explaining the presentation defect remain to be deciphered as well as the role of the *cis*-acting CTL evasion mechanism of ORF73 in the pathogenesis of MCF.
