

Marine Invertebrates as a Source of Antiviral Agents: Implications for Aquaculture and Human Health

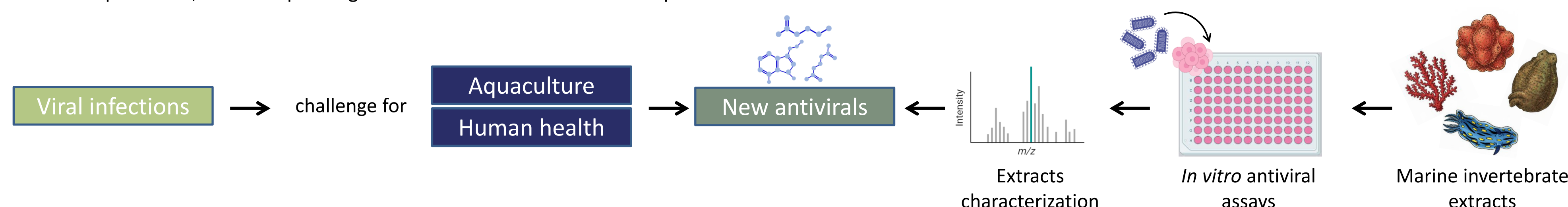
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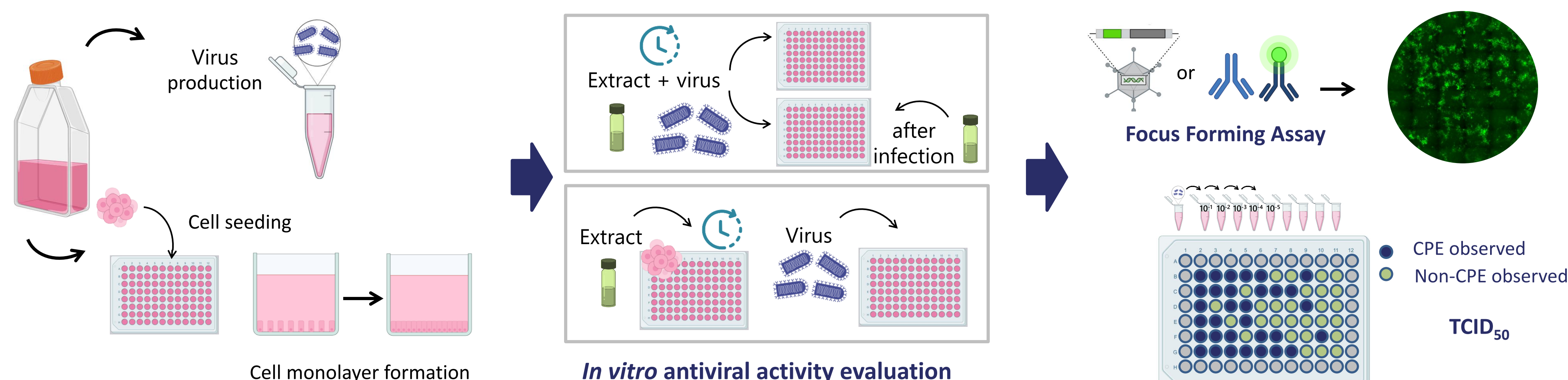
INTRODUCTION & AIM

Marine ecosystems are a valuable source of unexplored bioactive compounds. In particular, marine invertebrates are known for producing unique secondary metabolites with potential applications. Given that viral infections are a major challenge in human health and aquaculture, there is a pressing need to discover new antiviral compounds.

This study explores *in vitro* the antiviral potential of extracts from four marine invertebrates. The goal is to discover new broad-spectrum antivirals, supporting the European Blue Economy approach of sustainably using marine resources for health and economic innovation.



METHOD



RESULTS & DISCUSSION

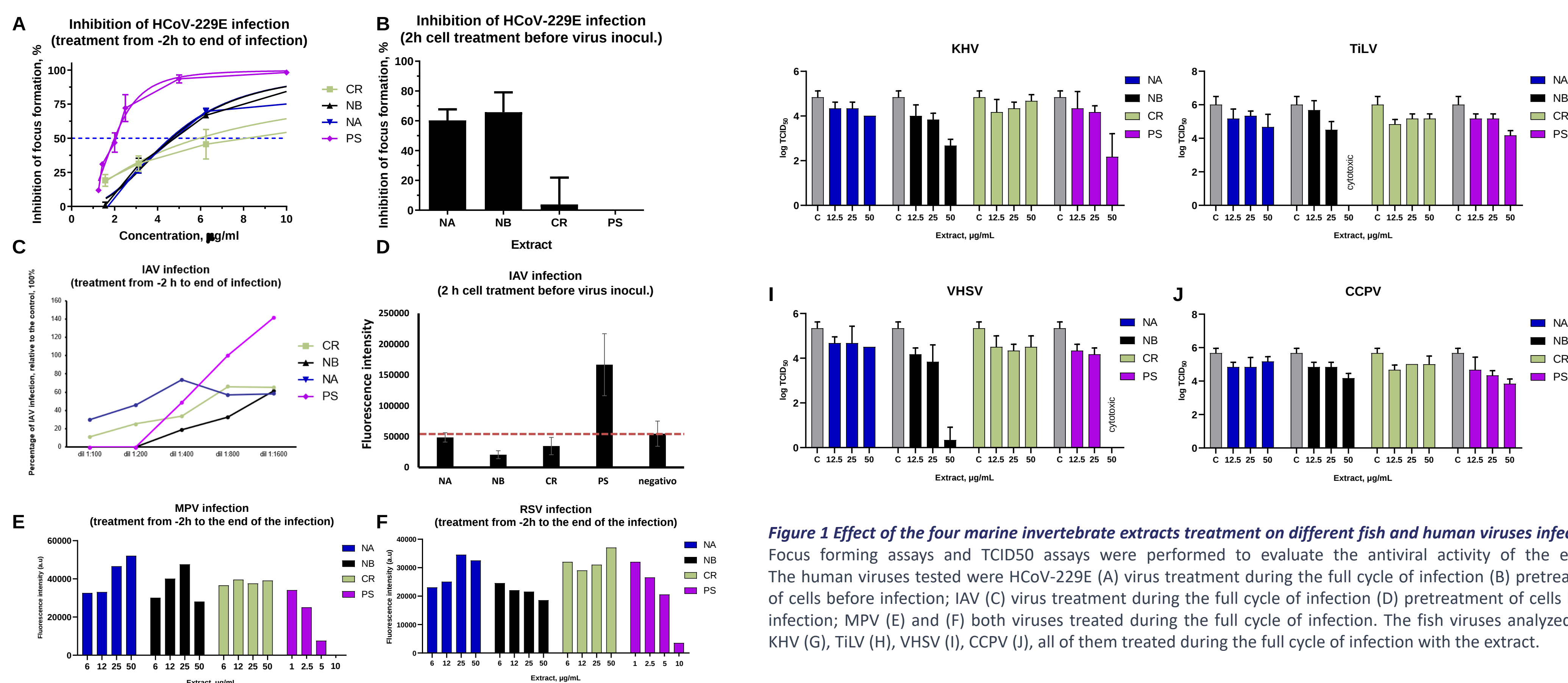


Figure 1 Effect of the four marine invertebrate extracts treatment on different fish and human viruses infectivity. Focus forming assays and TCID₅₀ assays were performed to evaluate the antiviral activity of the extract. The human viruses tested were HCoV-229E (A) virus treatment during the full cycle of infection (B) pretreatment of cells before infection; IAV (C) virus treatment during the full cycle of infection (D) pretreatment of cells before infection; MPV (E) and (F) both viruses treated during the full cycle of infection. The fish viruses analyzed were KHV (G), TiLV (H), VHSV (I), CCPV (J), all of them treated during the full cycle of infection with the extract.

CONCLUSION

Our findings indicate that **extracts from NB and NA possess potent, broad-spectrum antiviral activity against a range of human and fish viruses**. In addition, the results suggest the antiviral effect is likely due to direct virucidal activity, possibly by inactivating viral particles, or a protective cellular effect, such as modulating the host's defense pathways.

REFERENCES

Riccio, Gennaro, Nadia Ruocco, Mirko Mutalipassi, et al. 2020. "Ten-Year Research Update Review: Antiviral Activities from Marine Organisms." *Biomolecules* 10 (7): 1007. <https://doi.org/10.3390/biom10071007>