

# FISHGUARD: a fast, cost-effective, user-friendly and in-field screening test



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- **Viral hemorrhagic septicemia (VHS)** and **infectious hematopoietic necrosis (IHN)** are highly contagious fish **diseases** that cause important losses in fish farms with mortality reaching up to 90-95%.
- Currently, the screening methods are **long, tedious** and **expensive**.

THE AIM: to develop a **SIMPLE, FAST** and **RELIABLE** in-field immuno-assay-based screening test

Head of project: CI4CB Group of HEIG-VD

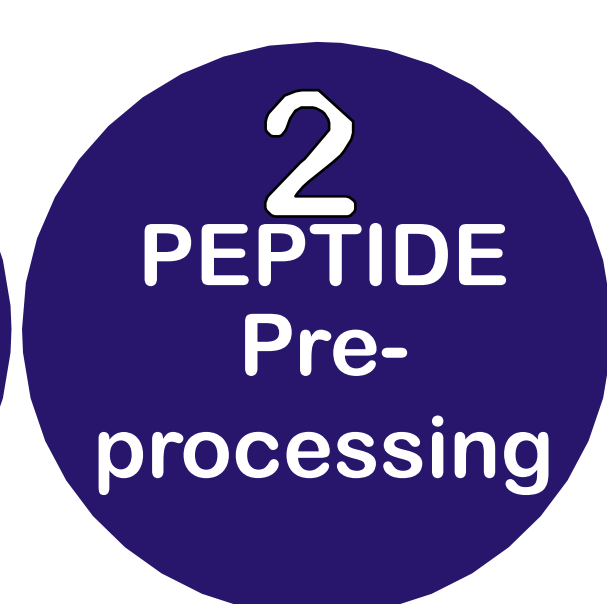
Partners: BIOSCIENTIA (Poland) & BIOTEM (France)

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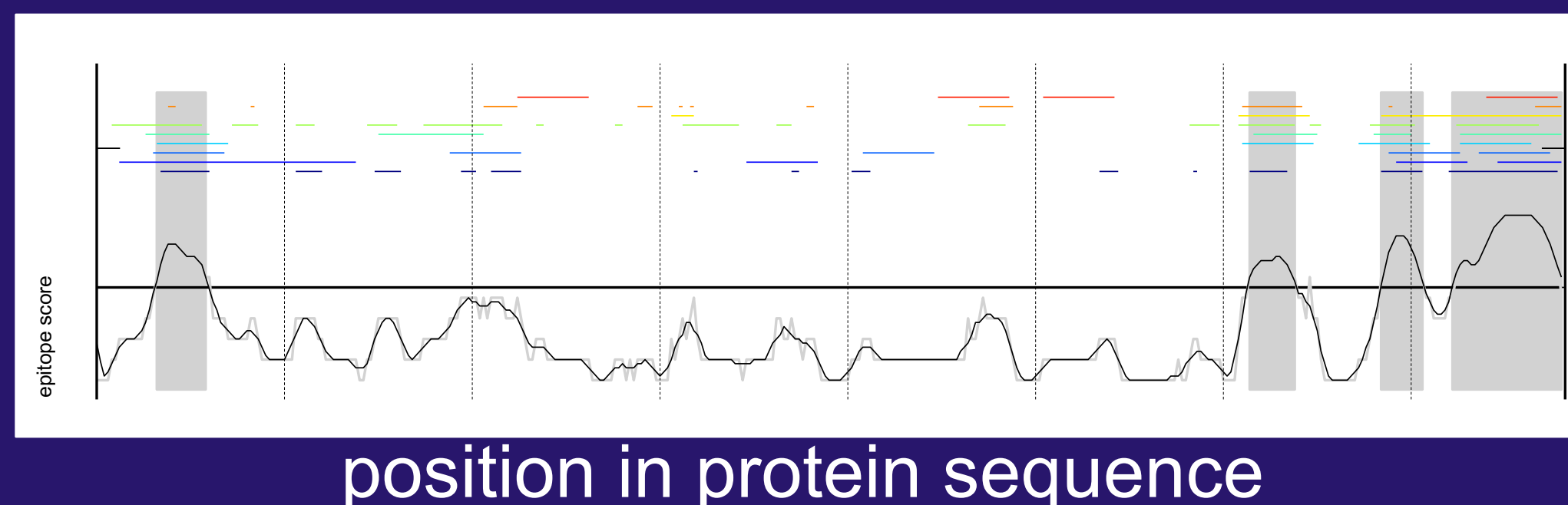
## Scientific Innovation

### BIOINFORMATICS & MACHINE LEARNING

- Extract reference protein sequences to feed ML algorithms
- Get consensus residues and “jury”-score
- Then, build epitopes of the desired length matching precise criteria



EPITOPES  
Prediction  
& ranking



**18 peptides** selected and used to conduct mouse immunization experiments

## Business Potential

- ✓ On the European market, there is no test/kit for in-field diagnosis of viral infections of VHS and IHN.
- ✓ Our test will be a significant alternative to laboratory diagnostics, as it will allow effective, fast and complex diagnosis of viral infections
- ✓ The product will be user-friendly, cost-effective, easy-to-buy and easy-to-use in the field - no special skills nor equipment are required
- ✓ The estimated net income is around 1 Million (5<sup>th</sup> year of commercialisation)
- ✓ Improve productivity, economic performance, and image of the European aquaculture through improved biosecurity, health, and welfare of farmed fish