

SALMOFERON





Introduction

Our company vision is to be a game-changer in the development of sustainable, prophylactic and therapeutic veterinary products. Our mission is to provide effective, safe and affordable solutions to keep livestock animals healthy and well.

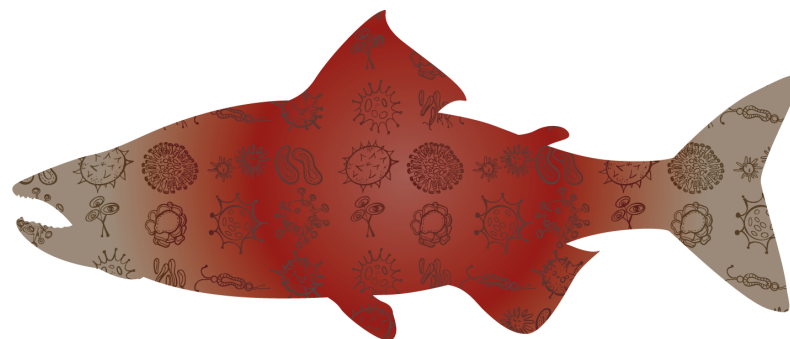
Our present business case and product is called SalmoFeron. Our company FarmPharma started SalmoFeron after a request from fish farmers in Norway. SalmoFeron provides a sustainable treatment and preventive solution for the aquaculture industry.

Problems in aquaculture production

- In 2020, **52.1 million** farmed salmon died at sea, a mortality rate of **14.8%**.
- World farming calculated that mortality rates in Scottish salmon farms average **24.2%** compared to other forms of industrial farming where mortality in egg laying hens is between **5-6%**.

The battle against diseases

- Salmon Pancreas Disease Virus (SAV-SPDV)
- Viral Haemorrhagic Septicaemia (VHS)
- Infectious Salmon Anemia Virus (ISAV)
- Piscirickettsia salmonis



Antimicrobial resistance (AMR)

- 80% of all antibiotics today are used in farming.
- 70% of them are essential for human medicine.
- Aquatic animal diseases are one of the major limiting factors for the expansion of the aquaculture industry.
- The excessive mortality limits the growth of **10-20%** of farms.
- Reduce the use of antibiotics – Agenda 2030, “One Planet, One Health”.



Goal: to limit the use of the current antimicrobials

- In 2006, the European Commission enforced a EU-wide ban on the use of antibiotics as growth promoters (Regulation (EC) No 1831/2003).
- In 2017, the United States followed Europe's example by limiting the use of antimicrobials in feed as growth promoters (FDA Veterinary Feed Directive).
- Recently the European Commission confirmed that a revised regulation on veterinary medical products will be enforced from 2022 onwards to also **ban** the prophylactic and metaphylactic use of antibiotics in farming (Regulation (EU) 2019/6).



SalmoFeron is both treatment and prevention

- **Active substance:** a unique combination of native species-specific interferons.
- **Action:** kick-starts the immune system and stimulates the host cells to heighten their defence against both bacteria and viruses.
- **Economical advantage:** no withdrawal periods for fish production.

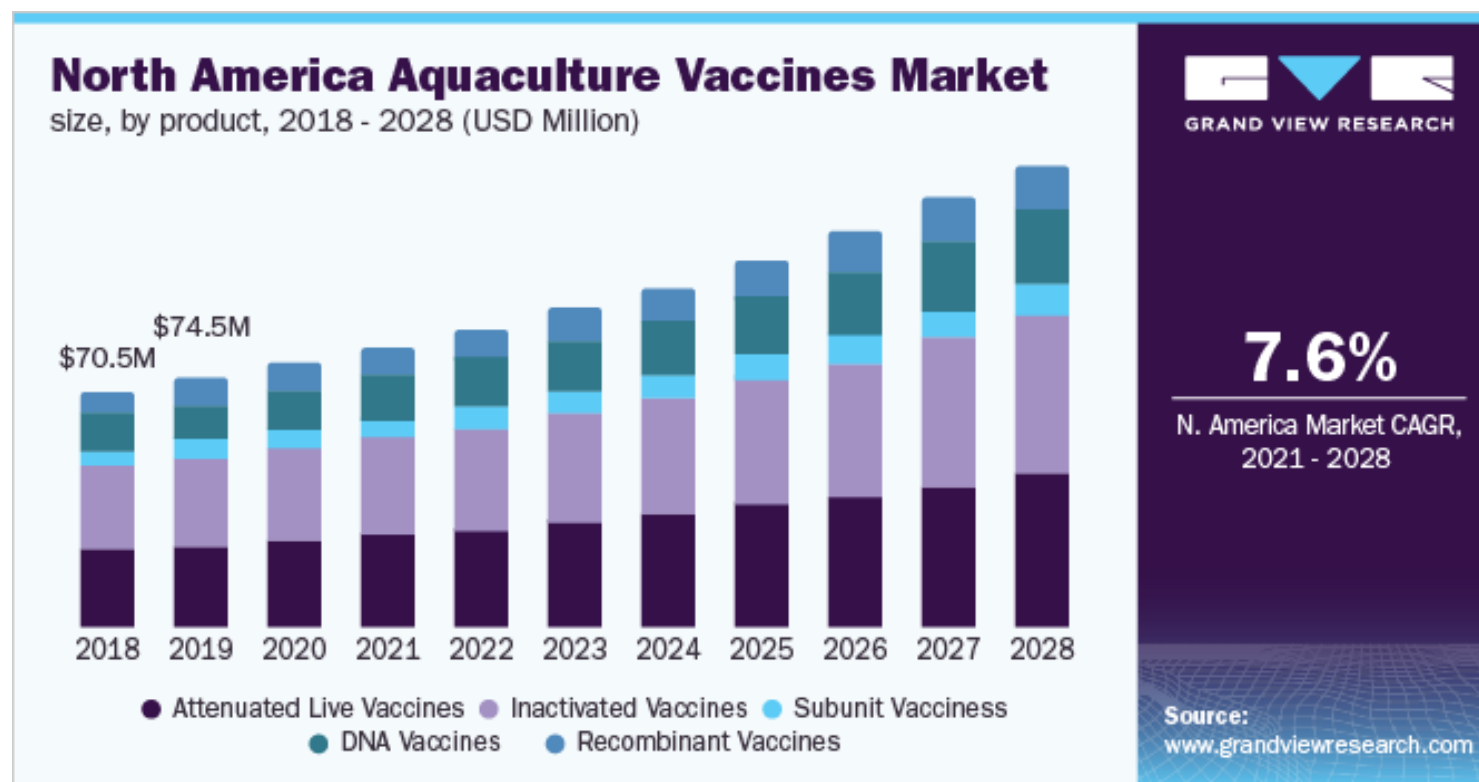
Current alternative treatment

- **Vaccination** - expensive and pathogen-specific. Disease outbreaks happen frequently despite vaccination. There are no available vaccines against IPN, IHN, and VHS.
- There is no treatment for **viral** fish diseases.
- In the event of a bacterial disease outbreak, **antibiotics** are recommended to treat sick fish.
- The efficacy of available **immune-busting** products like probiotics (safmannan) and phitochemicals (aquolive) is largely varying in different conditions.

Competition analysis

	Immune-boosting products	Vaccines	Feed supplements	Antibiotics	SalmoFeron
Universal protection	●	●	●	●	●
Stable efficacy	●	●	●	●	●
No development of resistance	●	●	●	●	●
Treatment and prevention	●	●	●	●	●
Allowed to use to meta / prophylactic	●	●	●	●	●
Availability in EU	●	●	●	●	●

A growing market (TAM)

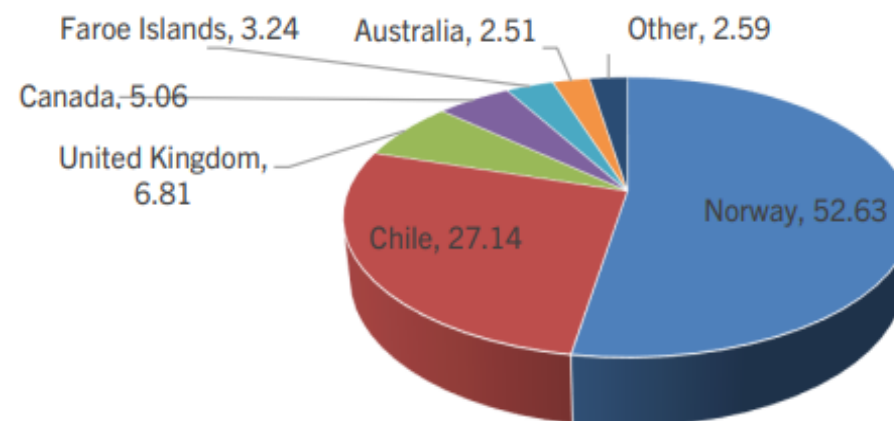


The growing market

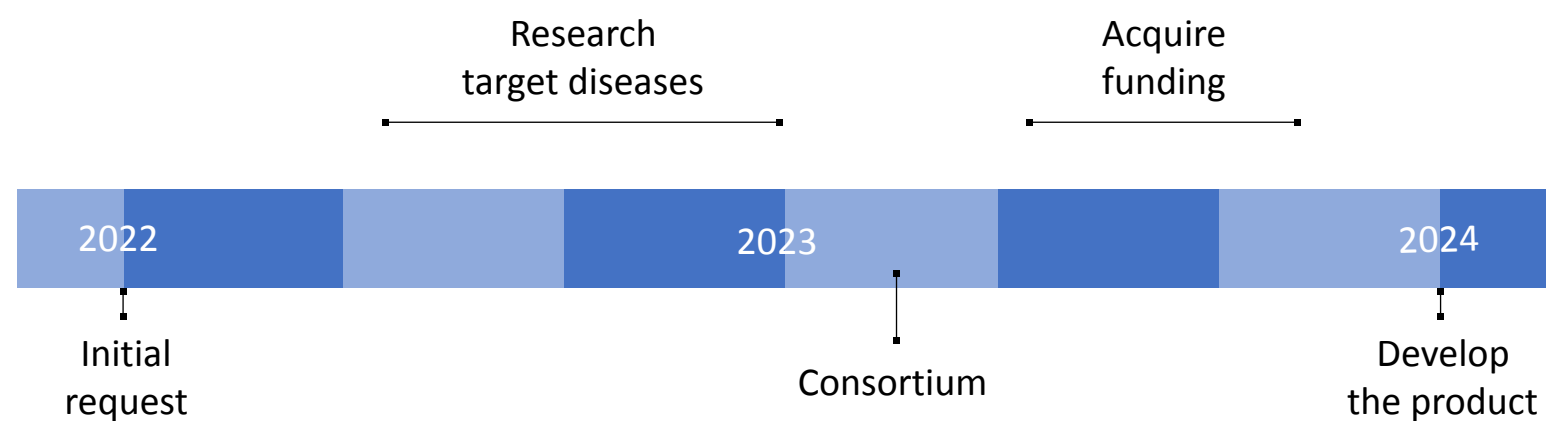
- The global aquaculture vaccines market size was valued at USD 322.4 million in 2020 and is expected to expand at a compound annual growth rate (CAGR) of 8.4% from 2021 to 2028. The SalmoFeron will target approximately the same market.
- The SalmoFeron treatment will not substitute vaccination, but will be used additionally. Young fish are vaccinated and SalmoFeron will target adult fish.

World salmon production

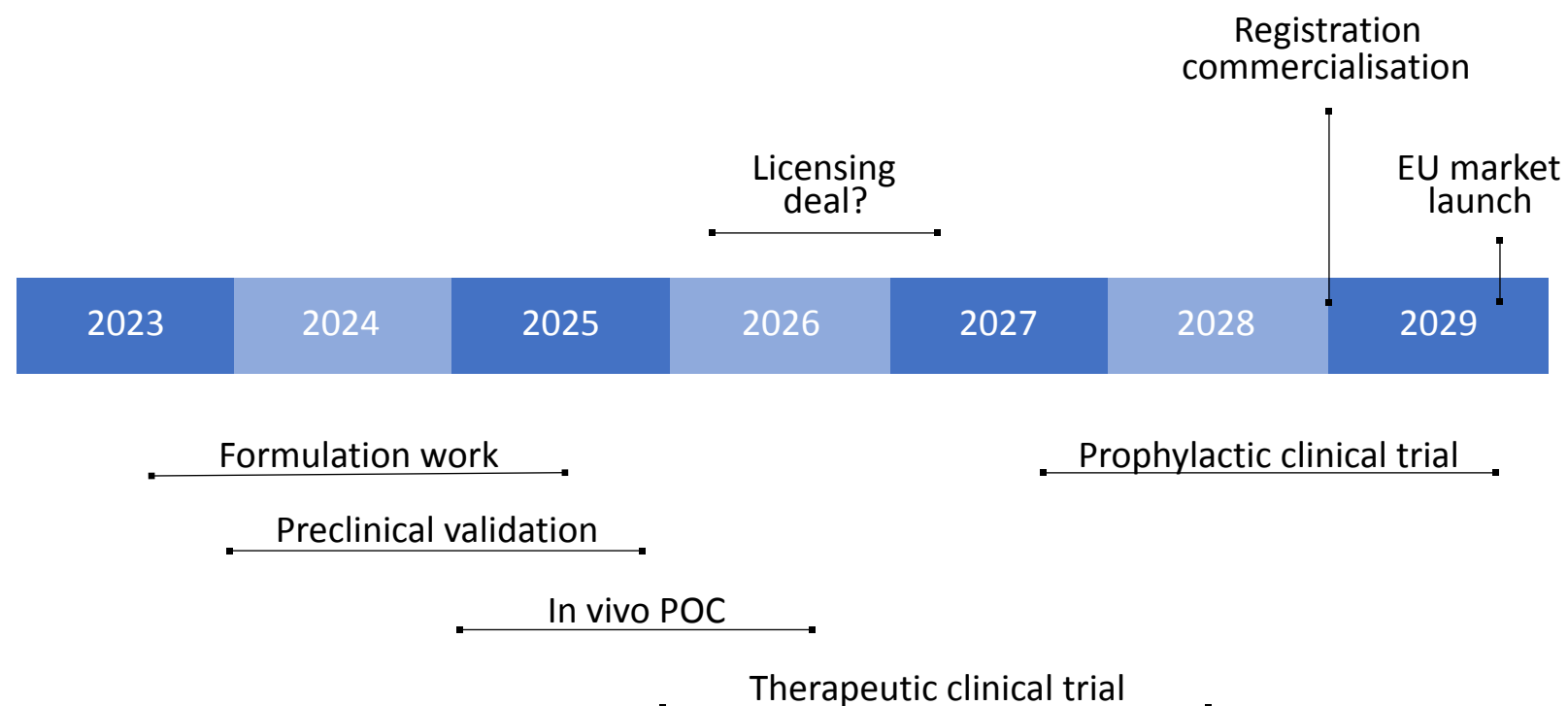
- **Norway** produces 52,6% of all salmon in the world (1,3 million tonnes).
- The countries with the most intensive and developed salmon-farming industries are the most attractive markets for SalmoFeron (Norway, Chile, Canada, UK).



Current timeline of SalmoFeron



Future timeline of SalmoFeron





FarmPharma



Irina Zaitseva, PhD, CEO

Irina has over than 20 years of experience in research on preclinical drug development. She has an extensive experience in preclinical studies and a profound knowledge of interferon signal transduction.



Johanna Axling, PhD, Senior Scientist, PM

Johanna has a background as a medicinal behaviour researcher and 7 years of experience in salmon sea-ranched research. Johanna will also be involved in business development, regulatory affairs, building consortium, and promoting and developing FarmPharma's products.



Igor Lokot, PhD, Board Director

Igor has a PhD in Bio-organic Chemistry and over 18 years of experience in drug development and commercialization. Earlier co-founded of another public Swedish pharmaceutical enterprise Oasmia Pharmaceutical AB and current owner of Double Bond Pharmaceutical AB.



Our partners

- **SFIRC** – Scottish fish immunology research centre at the University of Aberdeen, Scotland – the center headed by Professor Sam Martin who is an expert in diseases and recombinant vaccines for salmon.
- **INIA** – A public Spanish research organization working together with the Spanish research centre (CSIC), Spain – The Fish Pathology and Immunology group is led by Professor Carolina Tafalla where they research immunological response towards viruses and parasites.
- **NIBIO** – Norwegian Institute of Bioeconomy Research, Norway – The staff at NiBio headed by Dr. Johan Johansen have a lot of experience in the development of feed additives / supplements.

Our partners

- **NOFIMA** – Norwegian Institute of Food, Fisheries and Aquaculture Research, Norway – Dr Aleksei Krasnov and Lill-Heidi Johansen have profound experience within cell cultures molecular analyses related to fish physiology and genomics.
- **Karolinska Institutet**, Sweden – Senior researcher Anatoly Dubnovitsky has strong track record in recombinant protein production, purification and characterization in the context of immunology research.





WE REVOLUTIONIZE

TREATMENT AND PREVENTION IN VETERINARY PHARMACEUTICALS