



## Q & A

# Fish Vaccines

### What are fish vaccines intended to prevent?

Vaccines are given to healthy humans & animals to prevent disease, while therapeutics, are given with the intention to cure disease after its onset. A fish vaccine prevents the outbreak of a disease by preparing the immune system to successfully control disease causing agents, such as viruses or bacteria that are endemic in wild fish stocks. Vaccines replace or reduce to a large extent the use of therapeutics.

The vaccine brand Forte micro® from Novartis Animal Health, licensed in 2011, and its predecessor Lipogen Forte® have been used to vaccinate over a billion salmon to date. Forte micro® is used as an aid in the prevention of endemic wild salmon diseases such as furunculosis, classical vibriosis, and cold water vibriosis.

Novartis Animal Health's vaccine APEX-IHN® is a unique vaccine specifically designed as an aid in the prevention of Infectious Hematopoietic Necrosis Virus (IHN) in salmonids. Mortality of IHN infected fish can reach as high as 80%, making vaccination against this devastating disease a priority for economic, environmental and animal welfare standards. As the first licensed vaccine to protect against this disease, APEX-IHN® reflects the Novartis dedication to innovation in aquaculture. Through our R&D Centre of Excellence for Aquaculture in P.E. I., Canada, we remain committed to continued investment and innovation to help fish farmers and industry thrive and grow.

Novartis Animal Health's vaccine brand Renogen® is used as an aid in prevention of Bacterial Kidney Disease, causative agent *Renibacterium salmoninarum*. In Canada, it is estimated to cause up to 20% mortality in farmed Pacific salmon and up to 10% in farmed Atlantic salmon.

### Where are vaccines used?

Vaccines are important tools to improving the health, well-being and productivity of farm animals that are so vital to global food demand. The technology to develop vaccines is used to prevent disease in companion animals such as cats & dogs as well as millions of people worldwide. Headquartered in Basel, Switzerland, Novartis Animal Health is present in almost 40 countries. For example, the Forte family of fish vaccines is used in Canada, United States, Chile, Faeroe Islands, Norway and the UK.

### Are they legal?

All Novartis Animal Health fish vaccines are regulated in the markets in which we offer them. In Canada, fish vaccines are regulated by the Canadian Food Inspection Agency (CFIA). To be legally licensed, fish vaccines must be shown to be pure, potent, safe, and effective when used in the target species according to the manufacturer's label recommendations. Novartis Animal Health operates in an ethical manner, offers transparency, abides by regulatory and legal requirements and delivers quality products produced in a GMP accredited facility.



### **Are they safe to the consumer?**

All Novartis Animal Health products have been through rigorous testing to assure consumer safety. As part of the licensing submission to CFIA, supportive data must be provided that demonstrates that the product can be manufactured and used without adversely affecting animal health, human health, food safety or the environment. Novartis Animal Health tracks product safety and effectiveness on the market through a CFIA-regulated process known as pharmacovigilance. Vaccines in general contribute to a significant reduction of therapeutic treatments which has a positive impact on meat production. In addition, the absence of the specific disease that the vaccine targets results in healthier fish that are able to feed, grow and thrive.

Novartis Animal Health Canada Inc.  
Aqua Health Business  
37 McCarville Street, Charlottetown, PE  
C1E 2A7  
1-877-544-4966

© 2013 Novartis Animal Health Canada Inc.  
APEX-IHN™, Renogen® and Forte micro® are trademarks  
of Novartis AG, Basel, Switzerland.  
NAAQ2013-002