

Message from the President



needs of veterinarians with products that improve the lives of animals.

Myself and 5 other former Bioniche colleagues set up NovaVive with an initial view to developing stem cell technology for animal uses. It became clear very quickly that the regulatory pathway for such technology would be long and complicated.



NovaVive Inc. was established in July, 2014 as an animal health immunobiology company. We'll be celebrating the Company's 10th anniversary this July.

My vision for NovaVive was similar to my vision for Vetrepharm, which I founded in 1979 (it later became Bioniche Life Sciences): Serve the

When I was approached about the availability of a former Bioniche technology platform—mycobacterium cell wall fraction (MCWF) - myself and my NovaVive colleagues became excited about the prospects. We were already familiar with the technology, several MCWF products were already registered in animal health markets, and we knew there were considerable opportunities that had not yet been explored.

As you will see in the article below summarizing NovaVive's accomplishments in its first 10 years, we have indeed worked diligently to expand markets for the MCWF platform. We are excited to see additional prospects unfold in the coming months and years. Thank you for joining us on our journey!

Highlights of our first 10 years

The Company will celebrate its 10th anniversary on July 15, 2024. It's hard to believe NovaVive has been here that long. Let's take a look at what we've accomplished in the first 10 years of our corporate history.

- ◆ Acquired the MCWF technology platform from Vetoquinol (2014), including 4 registered products
- ◆ Registered Amplimune® (formerly Immunoboost) in the USA, followed by registrations in Canada (2016), the UAE (2019) and New Zealand (2020)
- ◆ Registered Settle® in New Zealand (2017)
- ◆ Introduced a new equine format for Immunocidin® – Immunocidin® Equine – to the U.S. and Canadian markets (2017)
- ◆ Obtained an OMRI listing for Amplimune® in the USA and Canada

(2018), allowing the product to be used in organic herds

- ◆ Engaged AABEX Animal Health as sales and marketing agent in the USA (2018)
- ◆ Registered Settle® in the UAE (2020)
- ◆ Obtained special import status for Settle® and Immunocidin® Equine in the UK market (2020)
- ◆ Shared data showing that Settle® has potential as a breakthrough new treatment for endometrial cups (2023)
- ◆ Registered Settle® in Canada (2024)

In summary, we now have MCWF products registered and selling in 5 global territories:

United States

- Amplimune
- Equimune

- Immunocidin
- Immunocidin Equine
- Settle

Canada

- Amplimune
- Immunocidin
- Immunocidin Equine
- Settle

Australia

- Equimune
- Settle

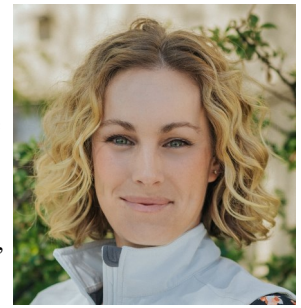
New Zealand

- Amplimune (5ml only)
- Equimune
- Settle

United Arab Emirates

- Amplimune (5ml and 20ml only)
- Settle

Settle Q&A with Dr. Carleigh Fedorka



NovaVive is fortunate to be working with Carleigh Fedorka, PhD as a company consultant. Dr. Fedorka is a global expert in reproductive immunology. She has focused her research on understanding the relationship between the immune system and the reproductive tract, evaluating the efficacy of immunomodulators on various reproductive disorders, and discovering immune-related biomarkers for reproductive health.

Dr. Fedorka has published a multitude of peer-reviewed articles on this topic and is invited to present her data worldwide.

She is currently employed as Assistant Professor of Equine Reproduction in the Department of Animal Sciences at Colorado State University.

Dr. Fedorka participated in a webinar in April at which participants could have their Settle-related questions answered. Here is a sample of the questions asked (with Dr. Fedorka's responses):

Q: Is Settle mainly used in older broodmares or has it been used in all ages?

A: We tend to think of Settle as something for the aged mare, simply because endometritis as a disorder that tends to happen in aged mares. In our research done at the University of Kentucky, we used Settle in all ages, ranging from 3 to 22 years, and it was effective. It just happened to be that it was the older mare that fell into that population of being a susceptible mare to persistent breeding-induced endometritis.

Q: What is the range of infective organisms this product is effective in treating?

A: There was a study done by Dr. Mette Christofferson where she looked at the efficacy of MCWF against *E. coli*, a gram-negative organism. We've also seen it quite effective against both *Strep zoo* and *Staph aureus*. And there's some research that investigated it against *Klebsiella*. Those main pathogens that we're detecting in the uterus, Settle has been found effective against.

Q: Which method of treatment using Settle – IV injection or IU infusion – has the highest success rate for a positive pregnancy?

A: In the one study that looked at the efficacy of IV versus IU, they didn't address fertility. The endpoints in that study were cytology and culture. They looked at the reduction in bacterial load and the reduction in neutrophilia. Both treatments – IV versus IU – were found equally effective.

Q: What, if any, side effects can occur with Settle administration?

A: With an IV treatment, you're more likely to see the "side effect" of an increase in rectal temperature. We tell people that is showing that the product is working. Settle should increase a variety of pro-inflammatory cytokines within the first six to 12 hours. We're going to see an increase in IL-1 β and IL-12 and, because of that, we're going to see an increase in rectal temp, but the data shows that should then decrease quite quickly. You should see a return to a normal temp at about 24 hours.

The benefits of Amplimune bovine immunotherapy

We recently asked a bovine veterinary consultant, Dr. Marc Campbell, to give his opinion on the use of Amplimune bovine immunotherapy.

Amplimune is regulator-approved in Canada, the USA, New Zealand, and the UAE as a treatment for calf scours. Research has demonstrated efficacy in other conditions of both calves and mature animals.

Dr. Campbell has some very positive things to say about Amplimune and the various ways it can be helpful to bovine producers.

"Amplimune can be used as early as Day 1," says Dr. Campbell. "Once that calf hits the ground and gets that colostrum, it is vital to get the immune system up and running. A dose of Amplimune can help ensure that."



"Amplimune can also be used as a preventative therapy on all animals to reduce illness," he notes. "As a treatment, it can be used as a solo therapy at the first sign of illness or with an antibiotic to improve treatment success."

"When you set up an effective immune system, it really determines the success or failure of any animal. They're going to have better feed conversion. They're

going to eat better. They're just going to remain healthy."

Dr. Campbell sees opportunities for Amplimune to be used in feedyards, stocker operations, and other settings.

"Judicious use of antimicrobials is the way of the future and a product like Amplimune can help in that process because, hopefully, we are going to use less antimicrobials when we use Amplimune."

Learn more about Amplimune by visiting <http://novavive.ca/products>. The Amplimune product page features videos of Dr. Campbell offering his views on the product.

