

Message from the President



NovaVive is rapidly approaching the 3rd anniversary of its founding. It's remarkable to think that almost three years have already passed by.

We continue to make progress in acquainting/re-acquainting veterinarians in the U.S., Canada, Australia and New Zealand with our line of immunotherapeutic products. The interest continues to grow, particularly with practitioners looking for alternatives to antibiotics in treating animal illnesses.

Our products Amplimmune™ (for calf scours), Settle® (for equine endometritis) and Equimune® (for equine respiratory disease complex) all play an important role as non-antibiotic therapeutics. Our other two products—Immunocidin® for canine mammary (breast) cancer and Immunocidin® Equine for equine sarcoids also provide alternative treatments to veterinarians. In the case of equine sarcoid tumors, we believe that Immunocidin Equine is the only regulator-approved product in North America for this indication. In the past, practitioners had to resort to chemotherapies and even BCG, a live mycobacterial product that has many side effects. Veterinarians using Immunocidin Equine have expressed their satisfaction with the results they're seeing in recurring sarcoids.

Highlights of NVI's First Three Years

- ⇒ Dec./14—acquired MCWF/MCNA technology platform/products for animals
- ⇒ 2015—successfully transferred products to NovaVive brand (with regulatory approvals in North America, Australia and New Zealand) and set up sales distribution system
- ⇒ Feb./16—received USDA (U.S.) and CFIA (Canada) approval for equine sarcoid therapy
- ⇒ July/16—received CFIA approval for neonatal calf scour therapy (2nd market) - subject to label approval; planned launch April-May/17
- ⇒ Mar./17—experiencing impressive revenue growth over last 2 years

We look forward to continuing to offer effective and worthwhile therapeutic options to the veterinary community.

Visit our website: www.NovaVive.ca

If you visited our website between January 1st and now, you were one of 786 people to do so. Chances are you were viewing our site from the U.S., where 74% of our users came from during that period. It's also fairly likely that you were a new visitor to our website, as 73% of the

visitors during that period were.

Next time you visit the site, be sure to sign up to receive our news releases and other information. The sign up location is on the home page below the section headers. Simply click there and enter your email address to be added to our corporate contacts.



[NovaVive Inc.—Equine](#)

[NovaVive Inc.—Canine](#)

[NovaVive Inc.—Bovine](#)

Potential Alternative Uses for Amplimune™

Amplimune™ is a non-antibiotic immunotherapeutic that is available to both Canadian and U.S. bovine veterinarians for the treatment of calf scours (diarrhea) caused by *E. coli* K99. Amplimune is both USDA– and CFIA– approved for use in dairy and beef calves, and is approved for use in organic animals.

Amplimune is derived from mycobacterium cell wall fraction (MCWF) technology – a proven immune stimulant that activates the host’s innate immune system to fight disease.

A number of bovine veterinarians and producers have inquired about the use of Amplimune in other disease conditions. NovaVive is currently working with several groups to assess the efficacy of Amplimune in treating endometritis, mastitis, bovine respiratory disease complex (BRDC), as a dry-off therapy and as an adjunct to traditional treatments

to enhance health and growth performance in young calves.

The Company is working with groups in Ontario, Saskatchewan, California, Australia and Serbia on these potential uses, conducting a range of activities from case studies to large clinical trials.

For example, we recently completed a 78-day pilot study in a veal operation (N=80) assessing the use of Amplimune with different milk replacers in the prevention/reduction of scours and respiratory problems in young calves.

Preliminary analysis revealed that there was a significant reduction in the incidence and duration of both scours and respiratory infections ($p < 0.01$) in the group that received 1mL of Amplimune on the day of arrival and 7 days later. Consequently, the cost of therapies used to treat scours and respiratory infections was significantly reduced in the Amplimune group compared to controls ($p < 0.01$). Furthermore, the cost of non-feed input vs. acquired losses was significantly higher in the control group compared to the Amplimune group ($p < 0.0001$).



These preliminary data suggest that Amplimune provides not only a health benefit to young calves, but provides an economic benefit to the farm owner .

When data from these various studies is collected and analyzed, it will be compiled for potential submission to peer-reviewed journals and/or presentation at practitioner conferences.

Our hope is that a sufficient amount of positive data can be generated to support alternative uses of Amplimune in the cattle industry—both beef and dairy—particularly in diseases where alternatives to antibiotics are actively being sought.



New Format Coming for Immunocidin® Equine

In response to the popularity of Immunocidin® for equine sarcoid tumors, the Company has sought approval from its North American regulators (USDA and CFIA) to separate the canine and equine label indications for the product. Final approvals are pending, but this will mean that the sarcoid product will have its own label (Immunocidin® Equine) and will be packaged in a larger vial size (5mL). The current vial is 2.5mL (see photo at right), which is too small for the commonly required equine dosing.

A study using MCWF for the treatment of equine sarcoids demonstrated that 73% of the cases underwent complete regression (data on file).

Equine sarcoids are considered to be the most common skin tumors of horses worldwide. They are often found around the eyes, head/face, neck, chest and shoulder, and also at the site of old scars. Sarcoids have been linked to infection of the horse with bovine papillomavirus (BPV). Young to middle-aged horses are most commonly affected by this type of tumor.

