

## HOW IS THE IFX-VET VACCINE MADE?

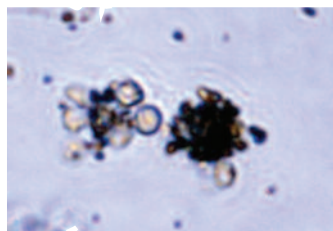
*IFx-VET* is an autologous (personalized) cancer vaccine, because it is made from each patient's own cancer cells. The tumor cells to make the vaccine are most often collected at the time of surgery when the tumor mass is removed or is debulked. In the event of non-resectable tumors, as much tumor as can be safely harvested from the patient will be recovered. The patient is given general anesthesia for the harvesting procedure in which a significant amount of tumor tissue is removed. However, cutaneous lesions presenting on the skin surface may be removed using a simple local anesthetic.



## THE SCIENCE BEHIND THE PROCESS

Although tumor cells express altered antigens that are different from normal "self-antigens", the immune system may have difficulty in recognizing the tumor cells as readily as it does a foreign microbe. *IFx-VET* helps the immune system make the first step towards recognition by providing a signal which can't be ignored by the body's scavenging cells, also known as antigen presenting cells. This initial recognition by antigen presenting cells is called a priming event.

The patented *IFx-VET* priming signal (antigen) is a highly immunogenic protein normally expressed on the surface of a streptococcal bacterium and is supplied to the patient's own tumor cells in the form of a single gene. The cellular machinery expresses the antigen on the surface of the tumor cells. As part of the manufacturing process, the cells are then irradiated so that they cannot divide when returned to the patient. The liquid vehicle for injecting the irradiated, transfected cells is a simple saline solution.



The vaccine cells are injected into the dermal layer of the skin because this is where a large concentration of antigen presenting cells reside. Once the priming action

*Cytotoxic lymphocytes primed and educated by IFx-VET are captured in the act of killing metastatic melanoma cells*

takes place, the antigen presenting cells attack the tumor cells, digest them and display all the antigens, those specific to the tumor cells as well as the bacterial antigen, to T cells which then initiate a specific response to each and every tumor-specific antigen present on the patient's tumor cells. In this way, a strong immune response is directed to multiple tumor antigens on multiple tumor cells in a way that was not possible before.

**HOW TO ORDER:** Only your Veterinarian can prescribe *IFx-VET* and make arrangements for your pet's surgery and vaccine preparation.

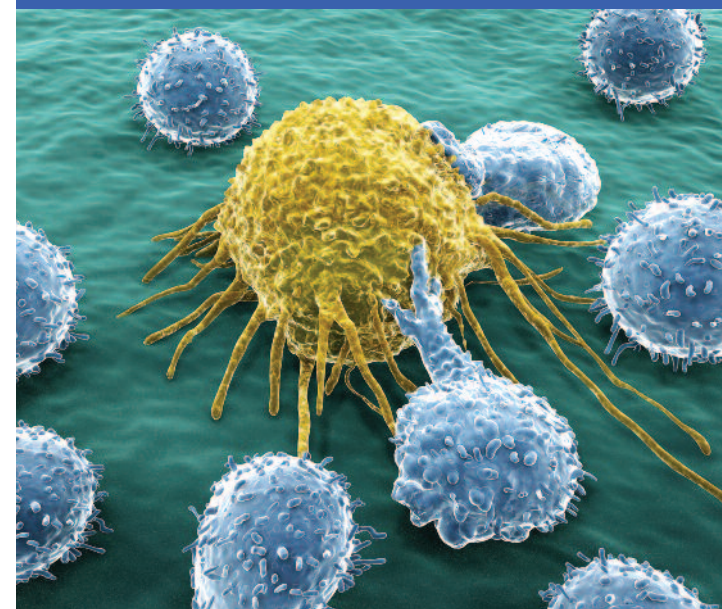


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The USDA has authorized the national distribution of autologous IFx-Vet vaccines.

# IFx VET

## A MULTI-INDICATION CANCER VACCINE



A personalized therapy  
improving the quality of life and  
survival of pets with cancer

*Offered by this Veterinary clinic:*

# INTRODUCING **IFX-VET** CANCER VACCINE

## WHAT IS **IFX-VET** CANCER VACCINE?

**IFx-VET** cancer vaccine is a multi-indication cancer immunotherapy developed by Morphogenesis and offered by Veterinary Oncology Services, Inc. The immune system, which normally functions to recognize, seek and destroy foreign invaders such as bacteria and viruses, does not always recognize cancer cells as “dangerous” thus allowing the cancer cells to multiply. **IFx-VET** is a cancer vaccine immunotherapy that acts by “educating” the immune system to recognize cancer cells as dangerous and eliminate them.

The use of **IFx-VET** is not limited to any specific cancer type and has been used to treat a variety of cancers in cats, dogs and horses

Photo courtesy of zentography.net



## HOW LONG DOES IT TAKE TO MAKE AN **IFX-VET** VACCINE?

It takes millions of cancer cells to make the series of **IFx-VET** vaccine doses. How quickly the vaccine can be made is dependent upon how many cells are obtained with the initial biopsy. Veterinary Oncology Services will inform your Veterinarian of how vaccine production is progressing and when to expect the completed vaccine. Once the vaccine doses are ready, Veterinary Oncology Services will work with your Veterinarian to schedule your pet’s appointments and delivery of each dose.



## CAN THE **IFX-VET** VACCINE BE USED IN COMBINATION WITH OTHER TREATMENTS?

The **IFx-VET** cancer vaccine is most commonly used adjunctly with surgery to prevent or delay progression, recurrence or metastasis of your pet’s cancer. **IFx-VET** can also be used in combination with some types of chemotherapy and radiation therapy. Ideally, if IV chemotherapy is administered concurrently, it is best to give the chemotherapy on one day and the vaccine on a different day. However, Veterinarians have, in some patients, administered both chemotherapy and immunotherapy on the same day. In those patients, the **IFx-VET** vaccine will be administered first and the chemotherapy several hours later.

## HOW IS THE **IFX-VET** VACCINE ADMINISTERED?

**IFx-VET** is administered intradermally (in the skin) in a series of weekly and/or monthly injections. For patients with certain types of cancer, the vaccine is administered once per week for all treatments. Your Veterinarian will set the dose schedule with you. Each vaccine contains approximately 0.5 cc and is administered in the region of the lymph node closest to the location of the tumor.

## IS THE **IFX-VET** VACCINE SAFE?

There have been no adverse reactions observed in any of the dogs, cats and horses treated with the **IFx-VET** vaccine.

## IS THE **IFX-VET** VACCINE EFFECTIVE?

The vaccine may be effective in preventing or delaying recurrence or metastases of a tumor that have been surgically removed. It may also result in a reduction of size in a tumor that cannot be surgically removed. Response to therapy may be noted as soon as 4-6 weeks after starting therapy. Although there have been remarkable successes in cases utilizing **IFx-VET** like other therapies, the **IFx-VET** vaccine may be more effective in early stage disease. **IFx-VET** is an exciting new treatment modality that offers improved survival in various types of cancer without harmful side effects.

