

Rose Bengal - More Than Just a Red Food Dye?

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One North Carolinian's Quest to Pioneer a Safer, More Effective Cancer Treatment

Craig Dees, Ph.D.

FDA Phase III clinical testing is about to begin on a randomized controlled study of a drug called PV-10. It will be on

metastatic melanomas thought to be suitable for special protocol assessment.

What makes this so news-worthy is that it proposes a revolutionary form of cancer treatment. It's one that is in stark contrast to so many 'harsh' forms of therapy. By design, PV-10 has unique properties making it behave as both a vaccine and broad spectrum antibiotic rolled into one. What's more, the drug has the potential for use in a wide variety of cancers. The drug is very different to most current treatments as it enhances the body's own immune system to assist in the fighting cancerous cells.

It is the latest development in one North Carolinian Molecular Biologist's crusade to provide a simple and almost side-effect free solution to cancer treatment. If his work is deemed successful as well as safe by the FDA, it will undoubtedly be applauded by physicians and countless cancer patients around the world.

Craig Dees, Ph.D. is an immunologist /molecular biologist and self-proclaimed "Lab-Rat". He is one of the research scientists behind what he feels will be a radical break-through in cancer treatment as a whole. These days he waits to see if many years of his work is approved by the FDA and found to be safe and effective.

With an illustrious career spreading over many areas of research with cancer, microbiology and immunology, he is well-suited for his role in shining a light on tomorrow's advances and the doctor does so by speaking at conferences around the country.

Dr. Dees is a fascinating man to meet and share a conversation with and shows a huge passion for his work. Perhaps it is a necessary trait of any good biologist, but when talking one on one, you quickly understand that Dr. Dees has the habitual ability to break any subject down into its simplest of terms.

Also, if you did not know him as a biologist, from his keen awareness and study of everything going on around him, you would perhaps guess his profession to be some sort of behaviorist. This is even obvious when "switching off" at his Hillsborough home, a 60 acre horse farm.

His thirst to understand details and anticipate interactions is especially shown in the way that he monitors and predicts the behavior of the many horses and animals at his farm.

Horses are a passion to both he and his wife, Virginia, a UNC

pathology professor. While at his home, he manages to unwind from his Knoxville, TN lab duties and from the tasks of helping direct a drug through the FDA's approval process. It was there that he was interviewed and highlighted the direction and advances being made by drug researchers in the fight against cancer.

When explaining the evolution of drug therapy research, he points to the fact that until very recently, it has been hard for drug companies to move away from the traditional 'blunt force' mindset of drug discovery, and how the industry is now undergoing a renaissance of sorts, with the adoption of more focused and rational designs.

This is especially noted in cancer therapy treatments. In past research, any contribution by the host's immune system was inevitably ignored in their research. In most cases, chosen approaches were in subjecting the body to highly toxic drugs. It is an irony that despite many of these drugs being capable of causing cancer in their own right, researchers still considered this an acceptable trade-off and inevitable side-effect of any form of treatment.

"Get as many of us 'Fancy-Pants' scientists together in a room as you want: the human body's immune system is still infinitely smarter and more effective at fighting illness – it's had a long time to perfect its abilities!"

But now, Dr. Dees is pleased to say, there is a new philosophy emerging within the drug discovery world. It is one that he is proud to be a part of; the pharmaceutical is finally embracing a more precise form of cancer treatment.

The latest treatments being undertaken by advanced drug researchers actually work by enhancing immune responses, as would any vaccine. This uses a level of finesse when combatting cancer and completely avoids the damaging of a patient's all-important natural anti-cancer defenses. "The body knows best how to heal itself, and in most cases, new cancer treatments are giving it the chance to do exactly that", he says.

He explains that cancerous activity is essentially a mistake within the DNA of a cell. It is the ignoring of the standard operating procedures incorporated within

its genetic code. When a mistake occurs, the cell adopts a renegade attitude and not only wants to stay around, it replicates abnormally and invades areas of the body it shouldn't.

Within the body's areas for highest activity of cell replication, come the greater chances of this bio-engineering mishap occurring. Cancer occurrence can be enhanced by exposure to chemicals or by any influences that increase the replication rate of cells. It's a simple numerical odds formula; with more cell replication activity comes greater chances of errors occurring.

Exposure to radiation is a major enhancer of the risk of getting cancer. The Sun, which is required for all life on Earth, can also

damage our skin's health with its solar radiation, damaging cells and causing them to acquire cancerous traits. Besides radiation, there are many other factors that can lead to cancer including viral infections as well as the body's immune system, like us, simply getting old and missing an opportunity in finding and eliminating a cancer.

"Most cancer treatments are murderous on immune systems; they are poisons and can cause cancer themselves. It is a sad reflection that past treatments have been harsher on our own natural defenses than on the cancers themselves."

With this thought in mind, cancer research around the world is now pointing in a new direction. Dr. Dees may well be considered a leading inspiration and pioneer for this new industry awakening.

He hopes PV-10 will be one of the first FDA approved methods for selective cell destruction, and more effective than current treatments available and with minimal side effects, too!

Beginning Phase III clinical trials, the drug is already showing promising signs of being a radical game changer. In the case of melanomas, it will be a relief if the sole discomfort of treatment could be attributed to the "pinch" of delivering syringe!

The treatment uses the ability of 'smart profiling' cells, and its abilities are due to the molecular properties of a red food dye commonly used in the Far East, known as Rose Bengal.

Uncovering the benefits of Rose Bengal came from Dr. Dees' mission in finding a vehicle for selectively targeting and destroying cancerous cells, while leaving any neighboring healthy cells unharmed.

In fact, any optometrist will be familiar with the red dye as it is also commonly used to detect damage in their patients' eyes.

It was an unproven but alternative and less traumatic approach in fighting cancer, and one that was missing from the majority of current cancer treatments. On testing in the lab, Rose Bengal's properties began to impress Dr. Dees and his fellow researchers.

PV-10 with florescence introduced, in a 35 minute colorful self-destruction sequence at a subcellular level is observed via multiphoton microscopy. This method looks into the interior of living cells without damaging them. In this experiment, exposure to light was used to trigger drug killing... however subsequent data collected shows cancer cells are killed in the same way when used at high dose and no light.

Holes in the cells are clearly visible early in the illustrations and loss of cell nucleus integrity and whole cell integrity is shown around 30-35 minutes.

What is happening...? PV-10 has disrupted the structure of subcellular organelles called lysosomes... Inside these lysosomes are degradative enzymes called acid hydrolases...(very low pH value with inside ph 4.0).

PV-10 disrupts the integrity of the lysosomes and the hydrolases are released (a form of apoptosis-suicide called autophagy). Diseased cells literally eat themselves using their "digestive" enzymes through the self destruct mechanism that the PV-10 induces. PV-10 doesn't kill the cells by poisoning them... it profiles and penetrates only diseased cells, (it does not enter normal cells), once inside, it sets-off the cell's natural self destruct mechanism.

Rose Bengal's chemical structure gives it the ability to selectively accumulate in cancers and penetrate only the abnormal cells. Furthermore, it works by not by acting as a poison or damaging the genetic material, but by inducing the diseased cells to commit suicide by a natural mechanism that cells use to die, (a form of apoptosis).

As with anything, there is a tipping point where benefits can not be expected, and Dr. Dees is quick to point out that no matter how good any cancer treatment is, the earlier a cancer is detected, the chance of a favorable outcome is better.

Currently, the form of Rose Bengal called PV-10 is in human clinical trials being performed by Provectus Pharmaceuticals, Inc. of Knoxville, TN. It is being examined for safety and efficacy in treating melanoma, liver cancer, and trials are being designed for pancreatic cancer in the near future. In a related version, PH-10 is also in clinical trials treating psoriasis and eczema.

Having completed successful phase II trials in melanoma, and with encouraging results on hundreds of human subjects, it is now ready for Phase III trials.

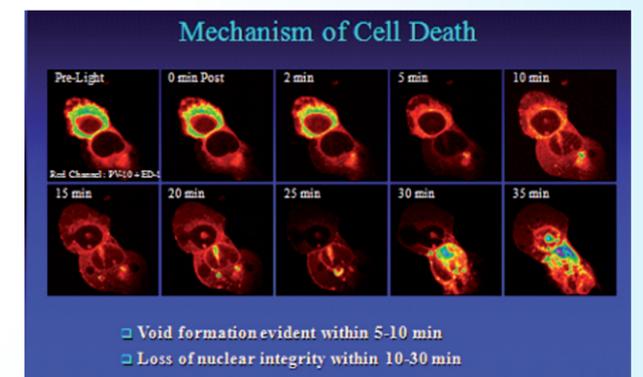
With early indications of success and little side effects, it is also available in multiple sites for compassionate use treatment of cancers in both the U.S. and Australia.

If any physicians feel as though they have patients that would be prepared to be considered for any continued studies in the clinical trials, information can be found in the NCI clinical trials data base or accessed through Provectus' website at www.pvct.com. Steps for those seeking treatment under the compassionate use program may also be found on the company's website.

Going forward, it is everyone's wish that the trials continue to show positive results for this new treatment, along with many others now being investigated. Hopefully, science will finally prove that the body's natural immune system, when stimulated into doing what it is so good at, is the perfect method for combatting many forms of cancer.



Wife Virginia and Dr. Craig Dees doing horse farm duties with 'Duval' a 17 hand 3" stallion



Disclaimer NCOMA wishes to express that the above Rose Bengal PV-10 article is presented to highlight a radical and pioneering potential solution to cancer therapy and in no way should be viewed as an endorsement or seen as a promotion of its effectiveness. The FDA has yet to fully endorse the product. NCOMA also states that - at the time of publishing and distribution, no NCOMA News Magazine related parties had any financial or vested interests in the future success of Provectus Pharmaceuticals. This is solely presented as an article of interest.