

# Two Powerful Herbal Extracts Protect Prostate Cell DNA

by Melissa Burchill, RD, CDN

Keywords: cancer, herbal, prostate, PSA, Prostabel, Beljanski, DNA destabilization, Oncotest.

## ABSTRACT

Complementary and alternative medicines look for substances that can heal without side effects. The traditional treatments for cancer are associated with significant, often debilitating, adverse effects, so the potential benefits are often thwarted by the harsh toxicity. Mirko Beljanski bridges these two approaches to healing with science, research with efficacy, and a conspicuous absence of side effects.

In his close-to-50 years of research as a molecular biologist and biochemist, Mirko Beljanski, PhD, made great scientific contributions to our understanding of basic life processes and cancer. He was able to determine that, before genetic mutations of DNA occur, attacks on the double helix itself create a structure that no longer functions properly. Beljanski associated destabilization of the DNA structure with excess replication, aberrant gene expression, as well as increased cell multiplication, leading to cancer. To determine which substances cause DNA destabilization, and thus can be considered carcinogenic, Dr. Beljanski developed the Oncotest. He further found that certain natural molecules, specifically those from the tropical plants *Pao pereira* and *Rauwolfia vomitoria*, could recognize and bind to the double helix and thereby prevent the process of carcinogenesis. *In vitro*, these two natural extracts inhibit a wide variety of cancer cells but do not affect healthy cells. Experiments with animals confirmed these *in vitro* results, and some human case studies have also validated this approach. Clinical studies using a combination of the *Pao* and *Rauwolfia* extracts have been very encouraging by reducing prostate specific antigen (PSA) levels in men and improving symptoms of benign prostatic hyperplasia (BPH).

Biologists and physicians are charged with the task of understanding the origin of a specific disease and preventing its appearance and development. A true visionary and pioneer in his field, molecular biologist Mirko Beljanski, PhD, was successful with these tasks. During his 25 years at the famous Pasteur Institute in France, Beljanski intuitively grasped that the breakdown of the three-dimensional DNA's structural integrity is a major factor in carcinogenesis. He went on to discover plant extracts that could inhibit the growth of abnormal cells. These plant extracts are *Pao pereira* and *Rauwolfia vomitoria*, and studies have proven their ability to prevent and inhibit the growth of aberrant cells *in vitro* and *in vivo*.

## DNA's Real Role in Carcinogenesis

Molecular biologists have shaped our ideas about the critical role of DNA in the onset of cancer since the mid 1900s. During that time, DNA had been identified as multiples of

four nucleotides<sup>1</sup> holding genetic information, which are strung together in long complementary polymers that wrap around each other, forming a double helix.<sup>2</sup> The genetic information – specific sequences that code for specific

proteins, contained within the DNA – has long been the focus of research on carcinogenesis. Biologists have contended that the coding regions of a special set of genes<sup>4</sup> are corrupted by mutations and thus alter the function of the corresponding proteins which, through unregulated cellular division, lead to cancer.<sup>4</sup> This is considered "The Mutational Theory of Cancer."<sup>3</sup>

Another model, which most deem to be much less likely, focuses on DNA's physical properties, suggesting that the central factor in carcinogenesis is the disruption of the DNA double helix. This is exactly where Dr. Beljanski focused his attention and research, seeking to identify the differences between normal and cancer DNAs at the level of the physical structure of the DNA by testing the stability of the double helix.<sup>4</sup>

## Beljanski's Discovery

Dr. Beljanski's first discovery was that cancer DNA is different from normal DNA when measured by ultraviolet (UV) light absorption. The absorption of DNA from cancer cells was consistently higher than results found for normal cells. Beljanski concluded that the chemical bonds that hold together the double helix are reproducibly disrupted in cancer DNA, which results in more openings or loops than are present in normal DNA. He referred to this pattern of relaxation in the DNA of cancer cells as destabilization.<sup>4</sup>



## Prostate Protection

He reasoned, and later confirmed in experiments, that the destabilized cancer DNA served as a more active template for enzymatic reactions, causing excess replication and aberrant gene expression. He found that replication occurred more quickly from cancer DNA templates than from the more tightly wound duplexes found in normal cells. *In vitro*, DNA destabilization positively correlated with enhanced DNA synthesis.<sup>5</sup>

### The Oncotest Leads to Two Anticancer Extracts

These findings led Dr. Beljanski to devise a test called the Oncotest,<sup>6</sup> which allowed him to identify many molecules having a carcinogenic potential. This Oncotest also permitted Dr. Beljanski to discover the two specific anti-cancer plant extracts. He reasoned that while carcinogens increase unwinding and duplication in cancer DNA, the opposite must be true for anti-carcinogenic agents. So, Beljanski looked at molecules that would interact with the DNA and inhibit DNA synthesis.

He found two effective plant extracts from *Pao pereira* (*Geissospermum laeve*) and *Rauwolfia vomitoria*. The Beljanski extracts were subjected to a long series of tests to examine their effect on cultured cancer cells, on animal cells with various kinds of cancer, and, ultimately, in numerous human case studies.<sup>7-11</sup> First, they stopped the proliferation of cancer cell lines maintained in the laboratory while sparing healthy cells. They were toxic to cancer cells in mice, but did no harm to healthy mice. They have proven to have anti-cancer effects on a range of malignancies, but have shown no significant side effects. Their actions selectively target cancer DNA and cancer cells with no effect on normal DNA behavior in healthy cells.<sup>12</sup>

DNA behavior is a microcosmic reflection of the cell's behavior. Inhibiting cancer DNA duplication prevents cancer cell multiplication. This was extensively tested both on normal and cancer cells cultured *in vitro*, both in the presence and absence of the two purified plant extracts.<sup>14</sup> Healthy cells were unaffected in every scenario. Mirko Beljanski showed that carcinogenic compounds (or hormonal compounds) had to compete with the cancer-fighting extracts, both at the DNA level and the cellular level (during multiplication).

These selective cancer-fighting substances have been extensively studied and used concurrently with chemotherapy or radiation therapy by many doctors in Europe to treat numerous cancers. This treatment combination is particularly effective, facilitates remission, and also allows the patient to enjoy a higher quality of life than he would otherwise have experienced with traditional therapy alone.<sup>15</sup> Much of Dr. Beljanski's work had been carried out in Europe, so in order to bring his scientific breakthroughs to the aging male population in the United States, all of the initial research had to be reconfirmed here.

### Extracts Are Studied in the US

The most important clinician today when it comes to the fast-growing field of complementary medicine and men's health is Aaron Katz, MD. He is a nationally recognized urology surgeon, researcher, author, and the director of the Columbia University Center for Holistic Urology in New York who, together with researchers at Columbia University, has gone on to develop scientific protocols to take Dr. Beljanski's body of work and study it for efficacy "just as if it were any other pharmaceutical drug."<sup>16</sup> He worked closely with Debra Bemis, PhD, who ran the Laboratory Science component at the Center for Holistic Urology at Columbia University. Katz's group is considered the nation's leading expert source today on complementary treatment

modalities for men experiencing both benign and malignant prostate problems. The Center takes on the most promising and rigorously studied natural therapies.<sup>17</sup> Its goal is to identify extracts and natural products amalgams that would benefit prostate and bladder cancer, and *Pao pereira* and *Rauwolfia vomitoria*, according to Dr. Bemis, were the "most promising candidates to date."

"Initially, we tested the extracts in cell culture models of prostate cancer (using an androgen-sensitive prostate cancer cell line). We observed that both extracts inhibited prostate cancer cell growth in the culture condition," she says. "Interestingly, the *Pao* extract more potently induced cell death (apoptosis) than the *Rauwolfia* extract. However, the *Rauwolfia* extract more specifically inhibited cell cycle progression of the prostate cancer cells, hence suppressing their ability to grow and divide."<sup>13</sup>

The team then went on to test both extracts in a mouse model of prostate cancer, which involved implanting human prostate tumor cells into mice (tumor xenograft model). The mice were fed the individual extracts for six weeks and were compared to control mice that did not receive the extracts. Both the *Pao pereira* and *Rauwolfia vomitoria* extracts reduced the overall tumor volume in the mice compared to controls in a statistically significant manner. This study suggests with scientific precision that the two extracts are adept at suppressing prostate cancer in pre-clinical models. This gave the team evidence that the herbs *Pao pereira* and *Rauwolfia vomitoria*, when mixed together, had a powerful inhibitory effect on the ability of prostate cells to grow and divide.<sup>16</sup>

### Clinical Trial at Columbia University

The encouraging pre-clinical results led to a clinical trial by Dr. Katz and his team. The Columbia researchers enrolled some 30

## Correspondence

Katrina Milligan  
 Natural Source International, Ltd.  
 150 East 55th St., 2nd Floor  
 New York, New York 10022  
 katrina@natural-source.com  
 212-308-7066

## Notes

1. Watson JD, Crick FHC. Molecular structure of nucleic acids. *Nature*. 1953 April; 4356:737-738.
2. Avery OT, Macleod CM, McCarty M. Studies on the chemical nature of the substance inducing transformation of Pneumococcal types. *J. Exp. Med.* 1944; 79:137-157.
3. American Cancer Society. Available at: [www.cancer.org/docroot/ETO/content/ETO\\_1\\_4x\\_oncogenes\\_and\\_tumor\\_suppressor\\_genes.asp](http://www.cancer.org/docroot/ETO/content/ETO_1_4x_oncogenes_and_tumor_suppressor_genes.asp). Accessed May 17, 2008.
4. Hall J. Destabilization of the DNA double helix in cancer—Mirko Beljanski's theory of carcinogenesis and anti-cancer extracts. *Townsend Letter*. June 2004; 92-94.
5. Beljanski M, Bourgarel P, Beljanski MS. Correlation between *in vitro* DNA synthesis, DNA strand separation and *in vivo* multiplication of cancer cells. *Expl. Cell. Biol.* 1981;49: 220-231.
6. Beljanski M. Oncotest: A DNA assay system for the screening of carcinogenic substances. *IRCS Med. Sci.* 1979;7: 476.
7. Beljanski M, Beljanski MS. Three alkaloids as selective destroyers of the proliferative capacity of cancer cells. *IRCS Med. Sci.* 1984;12:587-588.
8. Beljanski M, Beljanski MS. Three alkaloids as selective destroyers of cancer cells in mice. Synergy with classic anticancer drugs. *Oncology*. 1986;43:198-203.
9. Beljanski M, Crochet S, Beljanski MS. PB-100: a potent and selective inhibitor of human BCNU resistant glioblastoma cell multiplication. *Anticancer Res.* 1993; 13: 2301-2308.
10. Beljanski M, Crochet S. Selective inhibitor (PB-100) of human glioblastoma cell multiplication. *Journal of Neuro-Oncology*. 1994;1:62.
11. Beljanski M, Crochet S. The selective anticancer agent PB-100 and BG-8 are active against human melanoma cells, but do not affect non-malignant fibroblasts. *International Journal of Oncology*. 1996;8:1143-1148.
12. Beljanski M, Beljanski MS. Selective inhibition of *in vitro* synthesis of cancer DNA by alkaloids of the beta-carboline class. *Exp. Cell Biol.* 1982; 50(2): 79-87.
13. Bemis DL, Capodice JL, Gorroochum P, Katz AE, Buttyan R. Anti-prostate Cancer Activity of a C-carboline Alkaloid Enriched Extract from *Rauwolfia vomitoria*. *International Journal of Oncology*. 2006; 29: 1065-1073.
14. Beljanski M. The anticancer agent PB-100, selectively active on malignant cell lines, even multi-drug resistant. *Genetics and Molecular Biology*. 2000; 23(1): 29-33.
15. Beljanski MS. The Beljanski approach: Outside the box. *Townsend Letter*. July 2005;70-74.
16. Steinman D. Prostabel reduces men's PSA counts. *Doctor's Prescription for Healthy Living*. 2007; 11(8):30-32.
17. Steinman D. Dr. Beljanski's innovative approach to cancer. *Doctor's Prescription for Healthy Living*. 2007;11(2):18-20.
18. Steinman D. Two powerful unique herbs, *Rauwolfia* & *Pao*, protect prostate cell DNA and promote all facets of prostate health. *Doctor's Prescription for Healthy Living*. 2008; 11(12): 18-20.

patients with elevated specific antigen (PSA) readings (averaging 8 to 10 on the PSA scale) and a negative biopsy – a very interesting group that numbers in the millions in the general population. These men have elevated PSAs, but they don't have cancer yet. "From what the results show so far, [a combination of *Pao pereira* and *Rauwolfia vomitoria*] can produce favorable health benefits and give men the opportunity to do something positive to reduce their risk for more serious outcomes. Yet, [the plant extracts have] no side effects, [are] not a drug, and [are] well tolerated."<sup>16</sup>

According to Katz, "we now know from the actual clinical results that [*Pao pereira* and *Rauwolfia vomitoria*] can significantly lower PSA in a 12-month period. Also, we have very few patients convert to prostate cancer and have found a number of patients who have had a dramatic improvement in their urinary symptoms. Men are clearly having less frequency, better streams, and better flow rates."<sup>16</sup>

In many cases where men have a high PSA count and a negative biopsy, their urologist prescribes Proscar (finasteride), which is a powerful medication that has led to a number of side effects (depressed sexual libido, impotence, gynecomastia, and the potential for birth defects). The possibility of developing cancer intimidates them, and consequently, they go to the extreme measures of taking the drug to prevent the potential development of cancer. Waiting is not an option for them, but with the combined use of *Pao pereira* and *Rauwolfia vomitoria*, they now have an option: a much safer, natural, nontoxic compound.

According to Dr. Katz, "In some way that we now realize, [these two plant extracts when used together] may be better than saw palmetto, although we can't say for sure because we have not tested [them] against saw palmetto."<sup>16</sup> All of the Beljanski extracts are natural and nontoxic and definitely important for all cancer patients to know about.

"By considering complementary and alternative medicine (CAM) therapies that have been proven in the laboratory and in clinical trials to offer benefits to cancer patients with no toxicity, clinicians are able to offer more options to their patients and improve their overall care."<sup>18</sup>

Thanks to the pioneering work of Dr. Katz, "Dr. Beljanski's work is gaining acceptance among colleagues – and more and more doctors are interested in how to integrate these natural remedies into their patient's health plans," says Dr. Katz. He continues, "[*Pao pereira* and *Rauwolfia vomitoria* have] all the genetic studies showing why [they] work, and how [they] actually recognize the three-dimensional structure through the laddering and bonding of cancer DNA. He really did get it right. [These have] great potential to help patients."<sup>16</sup> Patients should bear in mind that Dr. Beljanski conceived of these plant extracts as being adjunct to conventional cancer treatment.<sup>18</sup>

For further information on Dr. Beljanski's scientific research and the products that stem from this research, please visit the following websites:

[www.natural-source.com](http://www.natural-source.com)  
[www.beljanski.com](http://www.beljanski.com)  
[www.mbschachter.com](http://www.mbschachter.com)  
[www.pubmed.gov](http://www.pubmed.gov)

Melissa Burchill, RD, CDN, is a Registered Dietitian, Certified Dietitian Nutritionist, and Consultant for Natural Source International, Ltd in New York.

The aforementioned trial is for men with negative prostate biopsy and elevated PSA, with the goal of helping men lower their PSA levels. If you would like to be a part of this research, the clinical trial is still open to new participants. Kindly direct your calls to Geovanni Espinosa, ND, Director of Clinical Trials, Department of Holistic Urology, Columbia University. Dr. Espinosa can help you determine whether you are eligible to participate. Dr. Espinosa can be reached at 212-305-3790 or via email at [ge2108@columbia.edu](mailto:ge2108@columbia.edu). Read about the Prostabel® clinical trial on Columbia University's website: [http://www.natural-source.com/engi/disclaimer\\_columbia.php](http://www.natural-source.com/engi/disclaimer_columbia.php).

Copyright of Townsend Letter for Doctors & Patients is the property of Townsend Letter Group and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.