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GENETIC TRAIT TRANSFERENCE USING A HOMEOPATHIC PROCESS: A potentially novel discovery

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Abstract

This paper reports a potentially novel discovery pertaining to a method of transferring adaptive genetic traits from one organism to another via a homeopathic process. Two anti-cancer homeopathic nosode remedies were created representing different adaptive mutations. These remedies were used and evaluated independently in both humans and animals. Anecdotal and case study reports are provided for a remedy developed from the blood of a human donor with genes with a known familial predisposition to long life and anti-cancer mutation mtDNA C150T. A second remedy was created from the blood of a mutant mouse known to be cancer resistant. The latter remedy was tested in mice under controlled conditions at Wake Forest University. Results demonstrated that three of five of the experimental mice survived a single injection of 200,000 cultured sarcoma 180 (S180) cancer cells while one of the mice remained healthy after subsequent repeated injections with 2 and 2.5 million live cancer cells respectively. The author suggests that transference of actual genetic traits/information via usage of the homeopathic process is a novel discovery with significant potential.

Keywords: homeopathy, cancer, genetic trait, SR/CR, mtDNA, adaptive mutation

Introduction:

The American Cancer Society (2006) estimates that nearly 1.4 million new cases of cancer will be diagnosed in the United States during 2006 with over 560,000 deaths. The vast majority of these individuals will be treated with cancer therapies based on current concepts of chemotherapy, radiation and surgery or more novel approaches such as antiangiogenic agents, immunotherapy, bacterial agents, viral oncolysis, targeting of cyclic-dependent kinases and tyrosine kinase receptors, antisense approaches, gene therapy and/or a combination of various methods. In each case, the treatments, which have demonstrated limited success, are typically fraught with deleterious side effects and undesirable long-term secondary sequelae that impact quality of life. Clearly, a therapeutic modality that could effectively treat cancers, and potentially other diseases, without deleterious side effects and improve quality of life would be of extreme value.

Exploratory research supports a possible role for homeopathy as one such side-effect free treatment for cancer. One homeopathic remedy, *Carcinosin,* is created from breast cancer tissue. Such remedies, created from living cells or tissues, are called 'nosodes.' A recent controlled clinical trial demonstrates the effectiveness of nosodes to prevent and possibly treat hepatocarcinoma (Biswas et al., 2005). This study examined whether the potentized homeopathic remedy *Carcinosin 200*, when administered alone and in combination with a second homeopathic remedy, *Chelidonium 200*, has differential protective effects against p-di-methylaminoazobenzene (p-DAB)–induced hepatocarcinogenesis in mice. The results demonstrated that both remedies, when administered alone, show considerable ameliorative effect against the induction of this cancer in mice and that, when administered together, there is a slightly greater protective effect.

A second study with another homeopathic remedy called Ruta 6 was conducted at the M.D. Anderson Cancer Center in 2003. Fifteen patients diagnosed with intracranial tumors were treated with Ruta 6 and Ca3(PO4)2. Of these 15 patients, 6 of the 7 who had gliomas (brain cancers) showed complete regression of tumors. The researchers found that cancer cell death was initiated by telomere erosion and completed through mitotic catastrophe events (Pathak et al., 2003). Although the human trials in this paper are not descriptive, the National Institutes of Health, National Cancer Institute reports that, "the P. Banerji Homeopathic Research Foundation (PBHRF) in Calcutta, India [co-authors of the Ruta 6 paper] has presented the National Cancer Institute with a case series of cancer patients treated with homeopathy in which 4 patients had sustained radiographic responses of pathology confirmed lung cancers (1 complete remission, 1 partial remission) and esophageal cancers (1 partial remission and 1 stable disease) while reportedly receiving only the homeopathic preparations prescribed at the PBHRF clinic." An observational clinical trial of this clinic's homeopathic remedies is currently underway (NCI, 2006).

Despite these results, others argue that the effects observed in homeopathy are due to the placebo effect (Shang et al., 2005). The placebo effect, which has been recognized in many human studies, typically is not extended to responses in animals. This paper reports the results of both human and animal subjects with cancer who used two uniquely-created homeopathic nosode remedies.

Background:

This first remedy was created from the blood of a human donor with breast cancer (DCIS with microinvasive ductal carcinoma, comedo, high-grade) who showed improvement in her disease through the exclusive use of complementary and alternative medicine (CAM) therapies. The donor refused all traditional treatments, e.g., surgery, chemotherapy, hormone therapy and radiation, and began using CAM therapies involving both bioenergy treatments and nutritional supplements. The 'bioenergy' treatments included both generalized 'laying-on-of hands' and Reiki. The anti-cancer supplements consisted of the intermittent use of proteolytic enzymes, Quercetin, Turmeric, Coenzyme Q-10, Folic Acid, and Omega-3 fatty acids. Although it is impossible to discern which, if any, of these interventions was effective in stabilizing the donor's cancer, PET/CT scans indicate that the donor's cancer is, at minimum, stable and has formed fibrotic scar tissue in the lesion area. It should be noted that this type of spontaneous healing with fibrosis is not a rare occurrence in high-grade, comedo DCIS and early stage invasive breast cancers (Horii, 2005; Zahl, 2004).

Two other findings of interest include the CT scan identification in February, 2006 of a cystic structure in the donor's left retroperitoneum, which was deemed a "likely congenital" nondeveloping left kidney with chronic hydronephrosis. This is of particular significance considering the donor's left kidney was completely removed due to a Wilms' tumor (kidney cancer) in 1962. Presence of this structure could not be verified in the subject's operative records of 1962, which describe a complete left nephrectomy

showing a cystic tumor with heavy necrosis (tumor cell death). A previous abdominal CT scan taken in 2001 did not identify this structure but did recognize that the subject had “no left kidney.” Given these data, it would appear that this new structure originated following the 2001 CT scan and before the CT scan of February 2006. One, or several, of the interventions used may have stimulated remaining kidney stem cells in the donor’s former tumor bed.

A second finding of interest is that the subject’s three uterine fibroids (two large one small) were not identified in the February 2006 CT scan. These tumors had been previously identified via laparoscopy (1986), pelvic ultrasound (2001), and CT scan (2001). The CT scan of 2001 further described that “the uterus is enlarged (compresses rectum) probably secondary to fibroids.” The subject had not yet begun menopause, had not used any hormone modulating treatment, and continues regular menses. Resolution of large uterine fibroids independent of estrogen manipulation has rarely been reported (DeWaay, 2002). In reference to this donor, according to physician researcher Dr. Brad Van Voorhis and co-author of the DeWaay article, “This is an interesting case. I am aware of one case of fibroids resolving after interferon therapy (an anti-viral agent). It would be quite interesting to know what she took as there is great interest in treating fibroids medically and we do not have great treatments currently. Was she taking tamoxifen or some other anti-estrogen therapy for the breast cancer?” (via email between the author and Van Voorhis, 8/21/06).

It was initially believed that a homeopathic remedy created from the whole blood of this donor might transfer either the bioenergetic healing effects and/or the effects of the nutritional supplements she was taking. However, after a year of use in both humans and animals, it became apparent that this was not the case. Most notably, many conditions and symptoms were improving that could not be explained by either of these conjectures while some conditions, e.g., inflammatory processes such as arthritis, were not improving that should have responded. For instance, given the anti-inflammatory nature of the various supplements, such as Turmeric and Quercetin, the donor was taking, these types of conditions could have been expected to improve. Additionally, several of the remedy users had previously been treated with the same ’laying-on-of hands’ bioenergy therapy by the same therapist and had not experienced the same improvements as they did with the remedy. Both people and/or animals with a divergent set of conditions ranging from cancer, Parkinson's disease, ADD, hepatitis, chronic fatigue, dyslexia, polycystic renal disease and age-related memory loss, among other things, were improving from using the remedy. These confounding results raised suspicion that other variables were responsible for the improvements beyond what could be ascribed to the donor’s specific bioenergy therapy or supplements.

One well-documented case report of someone exclusively using this remedy is 60-year-’Shirley,’ who was diagnosed with invasive ductal breast carcinoma via biopsy in January 2003. She had sporadically used a variety of CAM therapies, including the same bioenergy therapy and supplements as the donor. These approaches resulted in modest and transient improvements. She had never used any traditional interventions to treat her cancer. Her CA 27-29 marker (normal range is less than or equal to 38 U/mL) immediately prior to starting the remedy was 147 U/mL (Oct. 2005). She had a CT scan of the chest, abdomen and pelvis on 9/6/05 that showed, “Vague ill-defined nodular densities in both lungs difficult to characterize . . . Metastasis cannot be ruled out. Sclerotic density mid-thoracic spine suspicious for a metastasis. Deformed nodular left breast with mass effect inferiorly suspicious for primary or recurrent left breast cancer. Probable sclerotic metastases in the pelvis . . .” A MRI of the pelvis on 9/22/05 found “Bony metastatic disease seen within the pelvis.”

Shirley began taking one 200c (homeopathic dilution of two hundred from the original) per day of the remedy in mid-October 2005. Her Nov. 11th CA 27-29 marker was 145 U/mL at which time she began taking two 200c pills per day until first of December, at which time she increased to one CM (dilution of one million) per day. On 12/8/05 a repeat CT and bone scan was conducted. The findings indicated, “There are no discrete nodules or masses at this time. The previously seen vague areas of

nodular opacity remain. Their stability since September is reassuring for a benign process. Pelvic CT scan continues to show several sclerotic foci within the bony pelvis. . .These are stable . . .The patient had a negative bone scan... these sclerotic lesions are most likely secondary to a benign process." On this same date, her CA 27-29 marker fell to 123 U/mL.
Shirley stated she was feeling great and started noticing increased energy and stamina after taking the first pill. Blood work drawn on 1/5/06 indicated the CA 27-29 marker was now down to 99 U/mL; and on 2/3/06 it dropped to 91 U/mL. A contrast-enhanced MRI was done on 2/17/06. The report indicated that the largest tumor had shrunk, now measuring 50.3-mm wide compared to 61.9-mm wide on 3/11/05. A 20-mm central area of nonenhancement inside the tumor was described as "likely necrosis" (dead tissue). Other parameters were also noticeably improved including reduced chest wall involvement. Previous indications of pericardial involvement were no longer present. No new lesions were detected. On 3/3/06 the CA 27-29 marker had fallen further to 77 U/mL. She continued to feel well and have good energy levels. On 3/23/06 she reported that she was "off all pills – started a protocol of juice remedies and go off all meat."

'Grace' took the remedy for her severe Parkinson's disease. She, too, had previously received the same bioenergy treatments as the donor but without improvement. She experienced unexpected and dramatic improvements while using the remedy. After taking one 200c pill per day for a month, Grace reported that her shaking was somewhat diminished; her writing was considerably better; her eyes, which cross and could previously not be controlled with glasses and prisms, were correctable; her voice was stronger; she had more energy than she had had in over a year; and her walking improved.

A possible link among many and diverse symptoms and conditions that improved with this remedy is that they can be linked to mitochondrial DNA (mtDNA) deficiencies that either result from Reactive Oxygen Species (ROS) damage or energy loss (Wallace, 1992, Wallace, 2005). Mitochondria are bacteria-like organelles responsible for producing the energy in mammalian cells. Mitochondria are sometimes described as 'cellular power plants,' because they convert organic materials into energy. Mitochondria have their own DNA that is separate and unique. Unlike nuclear DNA, mitochondria contain several thousand copies of self-proliferating circular mtDNA, which are transmitted from mother to child. These make it possible to trace maternal heritage. mtDNA is less protected from damage than nuclear DNA, and thus is more susceptible to mutations. Millennia of mutations have lead to the formation of a number of unique types of mtDNA throughout the various human populations. These unique groups are called 'haplogroups' and can be further delineated into smaller cohorts called 'subhaplogroups.'

Almost always, mtDNA mutations are considered to be either detrimental or neutral to the host organism. For instance, mutations in mtDNA have been found to cause the decline of energy metabolism in many diseases and during the aging process, leading to various age-related disabilities (Wallace, 2005, Wallace, 1999). However, recent research has discovered an adaptive mutation, - a transition of cytosine [C] and thymine [T] at the 150 position in the displacement loop (D-loop) of the mtDNA, which confers a survival advantage and reduces nervous system degeneration among the elderly (Zhang, 2003). (The displacement loop is a place on the mitochondrial DNA where mutations commonly occur.)

The C150T mutation has come to be known as the 'longevity' mutation and has been linked to mitochondrial replication, which both protects from ROS damage and boosts immune functions. One theory is that the C150T mutation shifts the site at which mitochondrial DNA starts to replicate, thus allowing the individual to replace damaged molecules faster. The association between the C150T mutation and longevity has been reported in a group of Italian centenarians (Zhang et al. 2003), along with very old Finnish and Japanese subjects (Niemi, 2005). Further, sequencing of the D-loop in the samples from all the C150T carriers revealed that almost all of those belonging to subhaplogroup J2 harbored at least four mutations close to the origins of replication of mtDNA (Zhang et al. 2003, Niemi,

2003, Niemi, 2005), whereas no corresponding pattern was found for the other subhaplogroups containing the C150T mutation. Researchers speculate that the origin of this mutation, called the 'germ line,' is in the J haplogroup and, possibly, the J2 subhaplogroup more specifically (Coskun et al., 2003). Research suggests that subhaplogroup J2 may harbor alleles, which are pairs of genes that occupy a specific position on a specific chromosome, that favor longevity, as a result of a higher level of uncoupling and lower level of ROS production, which is known to cause damage to cells. Some speculate that advantageous alleles in those individuals in the J2 subhaplogroup may lead to reduced production of ROS. This may help in preventing the loss of telomeres, which are the sections of DNA occurring at the ends of a chromosome that erode with aging, and in maintaining the replicative capacity of a cell.

On the surface, the enhanced replicative capacity of the cells in the J2 subhaplogroup appears at a disadvantage for developing and spontaneously regressing cancerous tumors. As is common knowledge, cancer cells are defined by their abnormally-enhanced replicative abilities. A genetic predisposition that promotes cellular replication, as is seen in the J2 subhaplogroup, therefore, would appear to support, not thwart, the cancer cells already enhanced ability to replicate. Researchers note that centenarians do not succumb to cancers, despite the fact that cancer increases with age! However, this disadvantage may be modified by the C150T mutation; thus, assisting in the spontaneous regression of cancers. Researchers speculate that the centenarian studies demonstrate that the C150T mutation enhances the body's immune system, possibly by slowing the turnover of memory T-cells or other immune cells known to play a role in cancer surveillance (Zhang et al., 2003; Coskun et al., 2003). Thus, individuals with the C150T mutation who are in the J2 subhaplogroup might not only have anti-aging advantages but also anti-cancer advantages as well.

Hypotheses

Based on this evidence and observations from clinical findings of remedy users, two hypotheses were posed:

1) The donor's blood contains the unique mtDNA mutation(s) described, e.g., C150T, and belongs in the J2 subhaplogroup that confers energetic, anti-cancer and restorative benefits;

2) Adaptive genetic traits are being successfully transferred via the homeopathic process into the resultant remedy.

Results

To test the first hypothesis, blood and buccal samples, (cells scraped from the inner surface of the cheek,) from the donor and buccal samples of the donor's female relatives (mother and two daughters) were genetically tested at the mtDNA facilities at Binghamton University (SUNY). 22 lanes of sequencing were done on all five samples combined, covering the entire D-loop. All samples produced identical sequences, demonstrating transitions at positions 16069, 16126, 16154, 16193, 73, 150, 152, 263 and 295. Additionally there is a C insertion in the HVS2 poly-c region. This analysis revealed that the donor and her family harbor the rare C150T mtDNA mutation and are from the J2 subhaplogroup; thus, confirming the first hypothesis.

In order to test the second hypothesis that the adaptive genetic traits from the donor are being transferred to recipients via the homeopathic remedy, it was necessary to design a separate study that did not involve any of the treatments (bioenergy therapy and supplements) or conditions experienced by the donor (cancer) but that did involve an adaptive genetic mutation. These

conditions were satisfied in an experiment conducted in collaboration with researchers at Wake Forest University. This group has identified a spontaneous regression/complete resistance (SR/CR) mouse strain that has a unique genetic mutation that makes the mice completely cancer resistant (Cui et al., 2003). Additional trials have demonstrated that this cancer resistance can be transferred via blood transfusion from one mouse to another non-resistant wild type (WT) mouse. Further, the transfused blood remits existing cancers (Hicks et al., 2006).

In order to conduct the experiment, a few drops of whole blood were taken from one SR/CR mouse that had never been exposed to cancer (thus no antibodies, etc.). From this small blood sample, a homeopathic solution was created by Washington Homeopathic Products (USA) in accordance with standard homeopathic procedures. A CM dilution of the remedy, in 100% water, was sent to Wake Forest and refrigerated upon receipt. Five wild type (WT) BALB/c mice received intraperitoneal (IP) injections of 1 cc of the remedy for 10 days. A sixth mouse served as the control and received no injections. "Because of their consistent response to transplanted S180 cells, BALB/c mice have become a standard strain for ascites production" (Cui et al., 2003). On day four of the remedy injections, 200,000 cultured sarcoma 180 (S180) cancer cells were injected intraperitoneally (IP) into all six mice. IP injection of S180 cells to induce ascites is a highly-reliable model given the rapid and pervasive cancer growth that occurs in the favorable host environment. S180 leads to ascites production within 14-21 days following exposure (Cui et al., 2003).

In this experiment, after the 21-day time period, three of the five experimental mice were alive and healthy. The control and two experimental mice had developed ascites as would be expected in wild type mice]. Although no more of the remedy was administered, the Wake Forest researchers reinjected the three surviving mice with ten times the original dose (2 million S180 cancer cells) and altered the protocol to use live cells from the ascites tumors of the other experimental mice instead of the cultured cells used for the first injections. After the 21 days, one mouse still survived and remained healthy. According to Cui, "It is hard to believe how much grotesque damage can be inflicted by several *thousand* S180 cells in a host. It is even more inconceivable that any mouse could survive an injection with *millions* . . . of these lethal cells" (Cui, 2004).

Once again, no more remedy was administered; however, the researchers reinjected the single surviving mouse for a third time with 2.5 million S180 cancer cells that came directly from the ascites tumors of the other mice. This mouse continues to thrive well beyond the 21 days with no signs of any cancer.

Discussion

The fact that three mice survived the typically fatal injection of S180 cells and that, after repeated injections of millions of additional S180 cells, one mouse was completely cancer resistant lends support for the second hypothesis that the adaptive genetic traits from the SR/CR donor mouse are being successfully transferred via the homeopathic process into the resultant remedy.

Support for this hypothesis also lends credence to the first hypothesis, that users of the first remedy are also benefiting from the adaptive mutations and subhaplogroup advantages in the human donor's blood.

An alternate hypothesis to explain the mice survival also exists and needs to be addressed. This hypothesis suggests that the initial survival of the three WT mice was due to the possibility of less virulent cultured S180 cells. This explanation, however, is seemingly challenged by the fact that two other experimental mice and the control mouse all died on schedule with exposure to the exact same cells and dosage. An alternate hypothesis to explain the survival of the repeatedly injected mouse is

that the mouse developed immunity from exposure to high doses of cancer cells. Albeit these are legitimate hypotheses to test, Cui (2003) had previously commented on this possibility when attempting to ascertain the cause for the surviving SR/CR mouse he discovered in 1999. "S180-induced ascites represents one of the most aggressive transplantable cancers in experimental mouse models. Resistance to S180-induced ascites has never been reported to our knowledge." The Wake Forest researchers, along with an independent group of cancer researchers at the New Jersey School of Medicine have agreed to develop protocols to further test the SR/CR remedy in mice with cancers.

The results of these pilot studies also may lend support to the body of work by Roy et al. (2002, 2004, 2005), demonstrating that an 'active agent' can be characteristically imprinted on liquid structure; thus, changing the resident structure of water. Roy suggests that this process involves 'epitaxy, defined as the transmission of structural information from the surface (hence epi) of one material (usually a crystalline solid) to another (usually but not always) a liquid. "The seeding of clouds is epitaxial growth of crystalline-ice on a substrate of AgI, which has the same crystal structure. Seeding and epitaxial growth of semi-conductors is universally practiced in major modern technologies. Information and 'memory' are transmitted from the seed or substrate to adjacent layers of the liquid phase, which can completely control the structure of what is formed from it. No chemical transfer whatsoever occurs" (Roy et al., 2005).

Numerous experiments have demonstrated that the structure of water can be influenced by the structure of the solids with which it is in contact, including DNA. The work by Samal and Geckeler (2001) shows an unexpected aggregation of solute + water clusters around a wide variety of solutes including NaCl and DNA, which range into the micron size range as the specific chemical concentration goes down. At the most dilute point tested, in which the DNA reached zero atoms, the Z_{av} value (the average particle size) was extremely high. This study demonstrated the counterintuitive assertion that there are larger DNA oligonucleotide aggregates in highly-dilute aqueous solutions, including water, than in more concentrated solutions.

Conclusion

Although these pilot study results from testing these two homeopathic remedies are preliminary and inconclusive, both outcomes suggest an intriguing and potentially novel approach for addressing genetically-related diseases and disorders via the use of homeopathic processing to transfer adaptive physiological capabilities. However, many questions need to be explored from these experiments and findings. For instance, can the blood from this surviving mouse that had been given the remedy now be used to remit other mice, as is the case with other SR/CR mice? Has the genetic structure of this mouse changed to become SR/CR such that its progeny will also carry the gene? Can we improve upon this protocol such that we have 100% remission from the initial and subsequent injections? Can this effect be transferred across species even to humans as has been suggested with the remedy created from the human blood donor? Can blood from other genetically-superior mice/organisms be used to create a remedy to cure other diseases with a genetic deficiency? Addressing these and a myriad of other questions is necessary prior to drawing any final conclusions about this new approach.

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