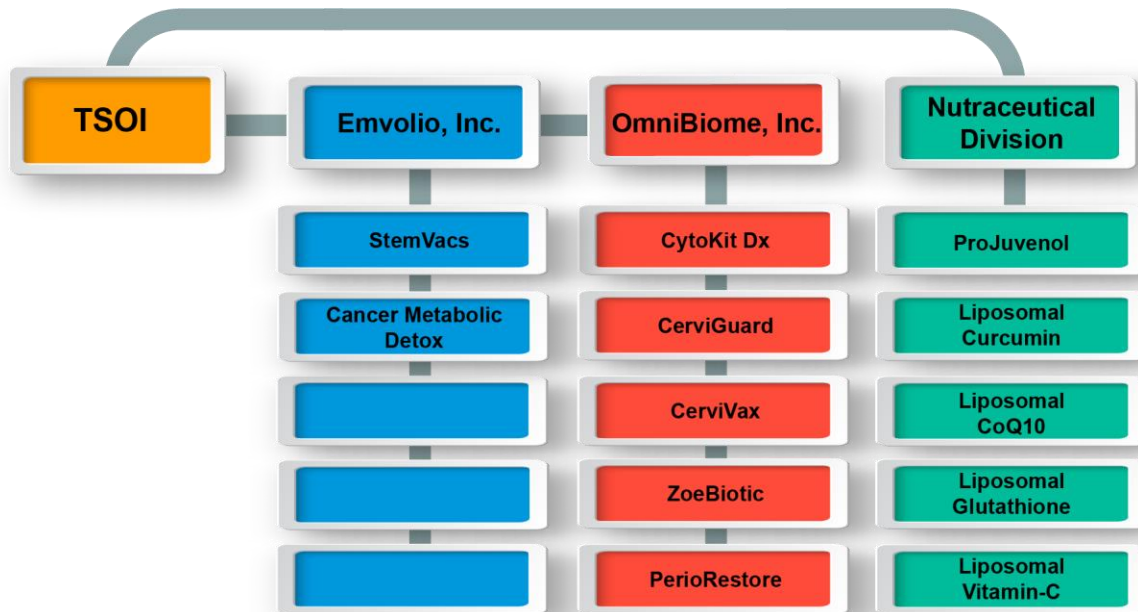


Therapeutic Solutions International, Inc.



Therapeutic Solutions International is a public company (**OTC:TSOI**) focused on immune modulation for the treatment of several specific diseases. Immune modulation refers to the ability to upregulate (make more active) or downregulate (make less active) one's immune system.

Activating one's immune system is now a well-accepted method to cure certain cancers, reduce recovery time from viral or bacterial infections and to prevent illness. On the other hand, inhibiting one's immune system is vital for reducing inflammation, autoimmune disorders and allergic reactions.

TSI is developing a range of immune-modulatory agents to target certain cancers, improve maternal and fetal health, fight periodontal disease, and for daily health. TSI has created several subsidiaries and divisions to focus on each of these programs:

Emvolio, Inc. – is a majority owned subsidiary of TSI where the intellectual property surrounding immune-oncology is housed. The Company is developing products that can be used together to attack cancer at different levels, as well as to be used alone or in combination with existing therapies.

OmniBiome, Inc. - is a majority owned subsidiary of TSI where the intellectual property surrounding probiotics is housed. Current programs focus on the use of probiotics to prevent pre-term labor and on using probiotics to reverse periodontal disease.

Nutraceutical Division – TSI has been producing very high quality nutraceuticals. Its flagship product, Projuvenol[®], is a proprietary mixture containing pterostilbene – one of the most potent antioxidants known. TSOI filed a patent application for ProJuvenol[®] on 07-08-2015 titled: “Augmentation of Oncology Immunotherapies by Pterostilbene Containing Compositions” and a second patent filed on 04-27-16 titled "Augmentation Of Stem Cell Activity Using Pterostilbene And Compositions Containing Pterostilbene".

Summary:

TSI has assembled a first-rate scientific advisory board that is leading the company into the most exciting and potentially profitable fields of medicine – immune modulation. Between 2017 and 2020, TSI expects to launch several products that improve people’s health and well-being.



Management

Dr. Thomas E. Ichim, Chief Executive Officer
Gerry B. Berg, Chief Financial Officer & Director
Timothy G. Dixon, President & Chairman

Scientific Advisory Board

Santosh Kesari, MD, PhD

Emvolio, Inc. is a majority owned subsidiary of TSI where the intellectual property surrounding immune-oncology is housed. The Company is developing products that can be used together to attack cancer at different levels, as well as to be used alone or in combination with existing therapies.

On April 10, 2017 TSOI licensed exclusively to EMVO a patent titled “Stimulation of Immunity to Tumor Stem Cell Specific Proteins by Peptide Immunization”.

This patent for our product known as StemVacs is the subject of an Investigational New Drug Application IND# 17448 submitted to FDA on April 12, 2017. The trial seeks to establish safety and immune response of the cancer, targeting a new personalized dendritic cell vaccine.

Cancer immunotherapy is the future of oncology, and the future is now. A decade ago the majority of mainstream oncologists believed the immune system is peripheral to cancer and does not influence outcome. The stunning remissions in patients with end stage lung cancer, melanoma, and renal cancer achieved by immune modulators called “checkpoint inhibitors” have given rise to 3 new FDA approved treatments for cancer, billion dollar market valuations for early stage companies, and a sense of “Gold Rush” when it comes to immuno-oncology.

Unfortunately, despite the excitement of the current revolution, narrow-minded thinking of Big Pharma chemistry is still being applied. While stunning successes are reported, these primarily occur in 20% of patients. This is more significant than previous approaches where no stunning successes were observed, but still leaves a lot of room for improvement. There will never be a “magic bullet”. Cancer compromises the immune system at different levels. A cancer treatment must attack cancer at different levels.

Our overarching approach to cancer is as follows:

1. Treat innate immune suppression to decrease immune suppressive toxic molecules made by tumor and tumor microenvironment.
2. Treat adaptive immune suppression to activate dormant memory cells recognizing the tumor.
3. Stimulation of immune response to cancer stem cells (StemVacs).
4. Consolidation and maintenance of immunity.

Description of Products: The following patents have been licensed to EMVO by TSOI

1) Patent Title: Targeting the Tumor Microenvironment through Nutraceutical Based Immunoadjuvants

Disclosed are compositions useful for the treatment of cancer which modulate tumor associated immunosuppression, thus acting as immunoadjuvants. In one embodiment a composition containing apigenin, is provided, said composition useful for inhibition of tumor associated immune suppression mediated through the molecule indolamine 2,3 deoxygenase (IDO). In another embodiment, liposomal apigenin is administered as a means of decreasing IDO expression.

Product Name: Cancer Metabolic DeTox. This is an orally administered agent that is derived from various herbs termed apigenin. The unique property of apigenin is that it

inhibits a cancer associated metabolic pathway that degrades the amino acid tryptophan. Specifically, apigenin inhibits the enzyme indolamine 2,3 deoxygenase (IDO), which is responsible for breaking down tryptophan in the vicinity of the tumor and generating by-products such as kynurenine. It is known that immune activation is dependent on tryptophan being present in the tumor environment. The depletion of tryptophan and generation of kynurenine by tumor cells and tumor associated cells is a major cause of immune suppression in cancer. By administering Cancer Metabolic DeTox, the innate arm of the immune system has a chance to regenerate. This positions the patient for better outcome after administration of specific immune stimulating vaccines.

2) Patent Title: Stimulation of Immunity to Tumor Stem Cell Specific Proteins by Peptide Immunization

Treatment of cancer is disclosed through administration of proteins or specific peptides found on tumor stem cells in vivo, in a matter eliciting monocyte or dendritic cell migration in order to allow uptake of said administered proteins or peptides, followed by administration of a maturation signal in vivo. The invention provides for treatment of cancer through induction of anticancer immunity and/or immunity towards tumor initiating stem cells.

Product Name: StemVacs. Cancer stem cells are the root of cancer. They are involved in maintaining tumor masses, causing metastasis, as well as initiating tumor relapse. In contrast to other cancer cells, cancer stem cells are extremely resistant to chemotherapy and radiation therapy. StemVacs is a subcutaneously administered vaccine comprised of immune stimulatory peptides resembling cancer stem cell specific



Management

Iryna Dzieciuch, Chief Executive Officer

Gerry B. Berg, Chief Financial Officer & Director

Timothy G. Dixon, President & Chairman

Dr. Vijay Mahant, Chief Science Officer

Scientific Advisory Board

Dr. Barry Glassman, DMD

OmniBiome, Inc. a majority owned subsidiary, is focused on therapeutic / Rx approaches to either utilize or intervene with the systemic effects of the vaginal, lactal-duct and oral microbiomes for improving maternal healthcare and resulting birth outcomes.

The Company will focus initially on developing CLIA Dx services for both pre-pregnancy-associated and pregnancy-associated conditions or diseases where there is a substantive link with microbiome dysbiosis (disruption or imbalance), as well as on restoring eubiosis (proper balance).

In parallel OmniBiome will build a database of aggregated patient data that will later inform development of Rx / therapeutic and medical device & drug-device combination approaches for treating the same conditions or diseases.

MicroBiome Targets

Certain microbiome target markets offer immediate revenue-generating business opportunities such as vaginal and lactal-duct microbiome banking & transplants from mother to child in the case of C-section-born babies, babies of non-nursing mothers, and children under 5 years of age receiving broad-spectrum antibiotics

OmniBiome's main focus will be on developing Dx / Rx products & services for pregnancy-associated conditions or diseases where there is a documented or substantive putative link with microbiome dysbiosis and resulting inflammatory cascades

In parallel the Company will look to create alliances and/or out license its Medical Device / Drug Device Combinations patent portfolio.

The Company also plans to in-license microbiome- and pregnancy-related Rx & Dx innovations from universities and research institutes – several have already been identified.

The Human Microbiome Link

The following microbiomes combined recapitulate approximately 75 - 80 % of the gut microbiome, hence OmniBiome sees no need to focus on the gut microbiome

The Vaginal Microbiome comprises approximately 300 - 600 species of bacteria. 100s of species are transferred to the newborn child orally as the baby passes thru the birth canal C-section-born children miss this important microbiome transfer

The Breast Milk Microbiome contains between 200 - 700 species of bacteria and is transferred to the child via nursing. Babies of non-nursing mothers miss this equally important transfer.

The Oral Microbiome diversity spectrum also covers 600 species shared with the baby via kissing and sharing eating utensils – with both the mother & the father.

In-House Patents

- 1) **Patent Title:** "Modulation of Oral Microbiome for Treatment of Periodontitis."

This product will be marketed as a probiotic paste to be used in oral appliances similar to bleaching trays and is currently under development. (**PerioRestore**)

Licensed Patents

- 2) **Patent Title:** "Prevention of Pregnancy Complications by Probiotic Administration." Press Release of 7/22/2015. (**ZoeBiotic**)
- 3) **Patent Title:** "Preventative Methods and Therapeutic or Pharmaceutical Compositions for the Treatment or Prevention of Pregnancy Complications" covers utility of vaccines and various agents to alter pathological conditions in which the maternal immune system induces a process of inflammation that culminates in placental alterations leading to either fetal loss or preterm labor. Press Release of 9/8/2015. (**CerviVax**)
- 4) **Patent Title:** "Diagnostic Methods For The Assessment Of Pregnancy Complications" a cytokine-based diagnostic kit aimed at stratifying risk of preterm labor and other pregnancy associated complications. Press Release of 9/21/2015. (**CytoKit Dx**)
- 5) **Patent Title:** "A Medical Device For Reducing The Risk Of Preterm-Labor And Preterm-Birth" covering various medical devices aimed at immune modulating the cervical microenvironment in order to prevent preterm labor. Press Release of 9/29/2015. (**CerviGuard**)

Nutraceutical Division {TSOI}



ProJuvenol® is a powerful synergistic blend of complex anti-aging ingredients inspired by nature to help promote cellular rejuvenation and healthy functionality for everyday living. Based upon pterostilbene one of nature's unique and intelligent antioxidants/anti-inflammatories. ProJuvenol includes a scientifically valid blend of interactive ingredients with anti-aging and cellular protective properties to help support optimal health and provide the benefits of mental alertness and physical well-being.

Pterostilbene (pronounced "tero-STILL-bean") has created a buzz in the world of nutrition research. Scientists discovered this powerful antioxidant several decades ago and have since found that it rivals its cousin resveratrol's multi-functional abilities, and may actually exceed its anti-aging and health promoting potential. Found naturally in blueberries, pterostilbene has been shown in emerging experimental studies to exhibit up to 7 times greater bioavailability than resveratrol as well as better metabolic stability. This translates to potentially higher levels of pterostilbene in the blood upon ingestion, and longer lasting effects in the body compared to resveratrol. More simply put, it remains active in your body for a much greater period of time and during this enhanced bio-available period your body has the opportunity to allow it to utilize this amazing molecule.

A large body of experimental research has now documented a wide range of potential health effects associated with pterostilbene. In fact, the more researchers study pterostilbene, the greater its human health potential becomes. In addition to being a powerful antioxidant, emerging experimental research suggests this plant compound may also help regulate cell growth, promote fat metabolism, support glucose utilization, influence brain function, and improve the body's natural detoxification enzymes that are required to help protect cells against potentially damaging compounds from the environment.

This amazing molecule requires other soldiers in its battle to assist your body in regaining its youthful state, ProJuvenol is blended with three additional powerful active ingredients and a specialized door opener to allow for greater absorption of these ingredients.

Pterostilbene Patents:

TSOI filed a patent covering the use of its ProJuvenol® product, as well as various pterostilbene compositions, for use in augmenting efficacy of existing immuno-oncology drugs that are currently on the market. The patent is based on the ability of pterostilbene, one of the major ingredients of ProJuvenol®, to reduce oxidative stress produced by cancer cells, which in turn protects the immune system from cancer mediated immune suppression.

This patent published on November 10, 2016 with now issued claims for an FDA-approved immunotherapeutic drug named Proleukin® (aldesleukin), which is a recombinant form of the cytokine interleukin-2 (IL-2) for treatment of cancer.

Immuno-Oncology, described by Science Magazine as 'Breakthrough of the Year'¹ offers the possibility of not only killing tumor cells in a non-toxic manner, but also establishing immunological memory, which patrols the body and destroys recurrent tumor cells. While great progress has been made in developing drugs that stimulate the immune system to recognize and kill tumors, a major pitfall of current approaches is that tumors produce chemicals and oxidative stress that suppresses the immune system, thus limiting efficacy of immune therapies.

Pterostilbene, which is chemically related to resveratrol, has been published to possess anticancer^{2,3}, antioxidant⁴, and anti-inflammatory activities⁵. Through the filing of the recent patent, the company is exploring whether its lead product, ProJuvenol[®], may be useful as a nutraceutical adjuvant to conventional cancer immunotherapies.

The importance of proper nutrition in the context of immunotherapy cannot be overstated. Studies on one of the original cancer immunotherapies, interleukin-2, demonstrated that efficacy was related to anti-oxidant content in the patients at time of therapy⁶. Accordingly, we are seeking through the current work to identify whether our currently marketed product, ProJuvenol[®], may be utilized as part of an integrative approach to building up the immune response of cancer patients.

¹ Couzin-Frankel J. Breakthrough of the year 2013. Cancer immunotherapy. Science. 2013;342:1432-3. <https://www.sciencemag.org/content/342/6165/1432.summary>

² Yang et al. Pterostilbene exerts antitumor activity via the Notch1 signaling pathway in human lung adenocarcinoma cells. PLoS One. 2013 May 3;8(5):e62652. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3643961/>

³ Li et al. Pterostilbene acts through metastasis-associated protein 1 to inhibit tumor growth, progression and metastasis in prostate cancer. PLoS One. 2013;8(3):e57542. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3586048/>

⁴ McCormack and McFadden. A review of pterostilbene antioxidant activity and disease modification. Oxid Med Cell Longev. 2013;2013:575482. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3649683/>

⁵ Qureshi et al. Inhibition of nitric oxide and inflammatory cytokines in LPS-stimulated murine macrophages by resveratrol, a potent proteasome inhibitor. Lipids Health Dis. 2012 Jul 10;11:76. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3393619/>

⁶ Marcus et al. Severe hypovitaminosis C occurring as the result of adoptive immunotherapy with high-dose interleukin 2 and lymphokine-activated killer cells. Cancer Res. 1987 Aug 1;47(15):4208-12.

In addition on April 28, 2016 the Company filed a patent application covering the use of ProJuvenol[®] and its active ingredient pterostilbene for augmentation of stem cell activity. Diseases such as diabetes¹, cardiovascular disease², and neurodegenerative diseases³ are characterized by deficient stem cell activity. The patent covers the stimulation of stem cells that already exist in the patient's body, as well as stem cells that are administered therapeutically.

Studies have shown that patients who have higher levels of endogenous stem cell activity have reduced cardiovascular disease risk⁴ and undergo accelerated neurological recovery after stroke⁵ as compared to patients with lower numbers of such stem cells.

¹ Moon et al. Circ J. 2012;76(9):2273-9. <http://www.ncbi.nlm.nih.gov/pubmed/22664650>

² Hill et al. N Engl J Med. 2003 Feb 13;348(7):593-600. <http://www.ncbi.nlm.nih.gov/pubmed/12584367>

³ Lee et al. Neurology. 2009 May 26;72(21):1858-63 <http://www.ncbi.nlm.nih.gov/pubmed/19470969>

⁴ Hill et al. N Engl J Med. 2003 Feb 13;348(7):593-600. <http://www.ncbi.nlm.nih.gov/pubmed/12584367>

⁵ Sobrino et al. Stroke. 2007 Oct;38(10):2759-64. <https://www.ncbi.nlm.nih.gov/pubmed/17761925>

TSOI markets currently two other nutraceuticals, T-Rx[®], a testosterone booster, and Vital[®] Female, an estrogen booster and has recently introduced a line of “oncologist friendly nutraceuticals” in liposome formula. Currently we offer Liposomal CoQ10, Curcumin, Glutathione, and Vitamin-C in 16oz bottles.

Management & Board of Directors

Tim Dixon CEO & Chairman

Mr. Dixon currently serves as Chief Executive Officer and Chairman of Therapeutic Solutions International, Inc., President and Chairman of OmniBiome, Inc., and President and Chairman of Emvolio, Inc. Mr. Dixon previously served as the President of TMD Courses, Inc. from 2006 to 2012 and; as the President of Splint Decisions Inc. from 2010 to 2011. Mr. Dixon has attended hundreds of hours of continuing medical/dental education throughout the years and has produced many educational DVD’s used by dental professionals worldwide on the subject of parafunctional control, migraine prevention, therapeutic Botox injections, migraine pathophysiology, dental sleep medicine, and other therapeutic protocols. Mr. Dixon also has extensive experience in dealing with corporate compliance matters with the U.S. Food and Drug Administration, (FDA) as well as many international regulatory bodies.

Gerry Berg CFO & Director

Mr. Berg currently serves as Chief Financial Officer and Director of Therapeutic Solutions International, Inc., Chief Financial Officer and Director of Emvolio, Inc., and OmniBiome, Inc.

Mr. Berg has over thirty years of senior management experience working with private and public companies. His career emphasis has been on Finance and Operations. Mr. Berg has over five years of experience having served as the Vice President of Operations and Chief Financial Officer for two nutraceutical companies.

As part of his responsibilities, Mr. Berg was responsible for raw material purchasing and compliance, manufacturing in accordance with cGMP procedures and FDA and FCC guidelines for marketing. Mr. Berg holds a Bachelors of Science in Accounting from Walsh College where he graduated Cum Laude. Mr. Berg became a Certified Public Accountant (CPA) in the State of Michigan in 1979 and in the State of California in 1984. Mr. Berg does not currently practice as a CPA.

Thomas E. Ichim, Ph.D., Director

Dr. Ichim was appointed as Chief Executive Officer on May 1, 2017. Dr. Ichim is a seasoned

biotechnology entrepreneur with a track record of scientific excellence. He has founded/ co-founded several companies including Batu Biologics, Inc., Medvax Pharma Corp., ToleroTech Inc., bioRASI, and OncoMune LLC. To date, Dr. Ichim has published 101 peer-reviewed articles and is co-editor of the textbooks “RNA Interference: From Bench to Clinical Translation” and “Immuno-Oncology: From Bench to Bedside”.

Dr. Ichim sits on several editorial boards of peer-reviewed scientific journals and is an active reviewer for grants, publications and academic appointments. Dr. Ichim is inventor of over 50 patents and patent applications. Dr. Ichim has extensive experience with stem cell therapy and cellular product development through FDA regulatory pathways. Dr. Ichim spent over 7 years as the President and Chief Scientific Officer of Medistem, developing and commercializing a novel stem cell, the Endometrial Regenerative Cell, through drug discovery, optimization, preclinical testing, IND filing, and up through Phase II clinical trials with the FDA and sale to the NYSE traded company Intrexon. Dr. Ichim has extensive experience in product development, regulatory filings, and business development.

Hong Ma, MD, Ph.D., M.B.A. – Chief Scientific Officer

Dr. Ma has an extensive history in academic and translational research. Subsequent to completing her medical degree, she performed basic research in the area of molecular biology of endothelial-associated pathways in her doctorate and postdoctoral studies. She has been critical in establishing numerous ventures and collaborations in the area of biosciences. Dr. Ma has over 20 peer-reviewed publications and has worked with prestigious institutions in the USA, China, and Japan. She received her M.D. from Dalian Medical University, her Ph.D. in Cardiovascular Pharmacology at Asahikawa Medical College, and has also earned her MBA at the Rady School of Management at the University of California San Diego.

Scientific Advisory Board

Dr. Barry Glassman is a Diplomate of the American Academy of Craniofacial Pain and the American Academy of Pain Management, as well as a Fellow of the International College of Craniomandibular Orthopedics and the Academy of Dentistry International, he is also on staff at the Lehigh Valley Hospital where he serves as a resident instructor of Craniofacial Pain and Dysfunction and Dental Sleep Medicine.

Dr. David P. Hajjar is currently Professor of Biochemistry, at Weill Cornell Medical College and Professor of Pathology and Laboratory Medicine, Weill Cornell Medical College.

Professor Hajjar was also a Frank H.T. Rhodes Distinguished Professor of Cardiovascular Biology and Genetics, Pathology and Laboratory Medicine, Weill Cornell Medical College from 1998 –

2014. Currently Dr. Hajjar is Dean Emeritus and was Executive Vice Provost at Cornell University.

Dr. Santosh Kesari is a board-certified neurologist and neuro-oncologist and is currently Chair, Department of Translational Neuro-Oncology and Neurotherapeutics, John Wayne Cancer Institute. He is also Director of Neuro-Oncology, Providence Saint John's Health Center and Member, Los Angeles Biomedical Research Institute.

He is also Director of Neuro-Oncology, Providence Saint John's Health Center and Member, Los Angeles Biomedical Research Institute. Dr. Kesari is ranked among the top 1% of neuro-oncologists and neurologists in the nation, according to Castle Connolly Medical Ltd and an internationally recognized scientist and clinician. He has been the author of over 250 scientific publications, reviews, or books. He is the inventor on several patents and patent applications, and founder and advisor to many cancer and neurosciences focused biotech startups.

Dr. Harry M. Lander has over 20 years of professional scientific, business and financial management experience related to biomedical research. Dr. Lander is currently President of Regen BioPharma, Inc. a publicly traded biotechnology company. Formerly he has served as Research Chief / Administration for Sidra Medical and Research Center (Doha, Qatar) and Assistant Provost for Weill Cornell Medical College (Cornell University).

Dr. Vijay Mahant has been involved in Research and Development in the medical industry for close to 30 years. Working in the FDA regulated medical industry, he has headed R&D activities for several bio-medical companies as well as being the founder, CEO & Chairman of MediLite, Inc.

Business Advisory Board

Mr. Marc Cassidy is President of Anemostat Inc., the oldest HVAC manufacture of grilles, registers and diffusers in the United States (est. 1936). Mr. Cassidy earned his MBA from Cal State University Fullerton, in Finance 1984. Veteran of the Air Force 1974-1980.

Mr. John Peck, Jr. spent three years in the US Army as an ordinance officer stationed in Southeast Asia upon graduation from Northern Illinois University. Returning to the States in the early 70's he worked for RCA and Intel before joining Meridian Leasing in Deerfield Illinois. In the early 90's he and a partner purchased Meridian Leasing. John's share was bought out in 1997 and he started investing the proceeds in Commercial Real Estate. Currently John is doing a little land development work and has found the "New Wave of the Future" in the Biotech Community. John is married and has two children.

TSOI Intellectual Property

Patent Filed	Patent Name	Press Release
7-08-15	Augmentation of Oncology Immunotherapies by Pterostilbene Containing Compositions	<u>07-09-15</u>
7-21-15	Prevention of Pregnancy Complications by Probiotic Administration	<u>07-22-15</u>
9-02-15	Preventative Methods and Therapeutic or Pharmaceutical Compositions for the Treatment or Prevention of Pregnancy Complications	<u>09-08-15</u>
9-15-15	Diagnostic Methods For The Assessment Of Pregnancy Complications	<u>09-21-15</u>
9-25-15	A Medical Device For Reducing The Risk Of Preterm-Labor And Preterm-Birth	<u>09-29-15</u>
11-20-15	Exosome Mediated Innate and Adaptive Immune Stimulation for Treatment of Cancer	<u>11-23-15</u>
04-27-16	Augmentation Of Stem Cell Activity Using Pterostilbene And Compositions Containing Pterostilbene	<u>04-28-16</u>
03-29-17	Stimulation of Immunity to Tumor Stem Cell Specific Proteins by Peptide Immunization	<u>04-10-17</u>
03-29-17	Targeting the Tumor Microenvironment through Nutraceutical Based Immunoadjuvants	<u>05-10-17</u>