Preface: International Conference of Water and Health

The International Conference on Water and Health (the Second Conference) was held at the Atheneum, California Institute of Technology, Pasadena, California, on January 31 and February 1, 2013. More than 110 participants attended from all over the world. The first international conference was held in 1996 and covered principally the physical, chemical, and biological properties of SWC. At that conference, there was only one presentation on the potential medical application of SWC in *in vitro* studies with normal human peripheral blood cells whose activities were enhanced by SWC. At the Second International Conference on Water and Health, the speakers consisted of scientists who are experts on the physical and chemical properties of water and the various molecular structures of water. Expert scientists also presented studies on the biology of SWC, presentations were made by medical practitioners who use SWC as one of their intervention strategies in a variety of diseases, including cancer. This issue of proceedings provides examples of these topics. A brief summary of the contents is presented here.

Dr. Shui Yin Lo presented "Stable Water Clusters, Meridians, and Health," his extensive study on the physical and biological properties of SWC. He also described the interrelationship between SWCs and the 14 meridians, which can be seen on thermographs of ordinary human subjects. From all of the varieties of SWCs, he emphasized the ones that produce double-helix water (DHW), as these are interestingly related to health. Dr. Lo compared subjects who before and after DHW consumption by analyzing respective thermographs. His findings indicate a significant effect on a small number of patients with autism, diabetes, thyroid, brain, and digestive disorders. Clearly, he emphasized the need for analyzing a large number of patients in a randomized matter.

Dr. Mae-Wan Ho presented "Super-Conducting Liquid Crystalline Water Aligned with Collagen Fibres in the Fascia as Acupuncture Meridians of Traditional Chinese Medicine," which included new evidence that hydrogen is quantum delocalized between neighboring water molecules, even in the liquid state. This predisposes water to proton conduction, especially in confined nanospaces. She proposed that water nanotubes are aligned by collagen fibers and, therefore, fulfill all the criteria for proton superconduction. Hence, as proposed 15 years ago by Dr. Ho, water nanotubes are considered excellent candidates for the meridian theory of Chinese medicine.

Dr. Alpha Lo and collaborators discussed "A Soft Matter State of Water and the Structures It Forms," their study of the behavior of stable water clusters as they form straight rods, double-helix shapes, and a large variety of other structures. Dr. Lo suggested that such properties of water are consistent with a soft matter state with a gel-like behavior. He also discussed how different structures of water are formed by producing dipole models with soft matter properties.

Drs. Bonavida and Baritaki presented "Stable Water Clusters-Mediated Molecular Alterations in Human Melanoma Cell Lines," their preliminary findings on the biological properties of SWC containing double-helix structures, by examining human melanoma

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cell lines as a model for analysis. Blinded treatment of the cell lines with water preparations containing SWCs and a control were analyzed for several effects, including cell viability, cell proliferation, expression of immune death receptors on the cell surface, response to death ligand, and gene products involved in the apoptotic pathways. The preliminary findings revealed that treatment with SWC-containing water affects cell viability, inhibits cell proliferation, upregulates death receptors, sensitizes the cells to immune death ligand, and induces selected gene modifications that regulate the apoptotic pathway.

Dr. Raymond Hilu presented "Oncological Hyperthermia as an Adjuvant Treatment in Advanced Stages of Lung Cancer," his clinical studies in lung cancer patients using both conventional and alternative medicines. Representative cancer patients who were treated with oncological hyperthermia showed significant clinical outcome. He also introduced the use of SWCs in his multi-disciplinary oncological approaches, and he awaits findings regarding its benefits.

Drs. Velazquez and collaborators discussed "Case Study of Autistic Subjects with Stable Water Clusters in Panama," a study of several cases of patients with autism who were treated with water clusters with double helix configuration. The response of these patients was recorded on a ten-point health questionnaire as well as by thermographic analysis taken before and after SWC treatment. In 8 patients, beneficial and rapid effects were induced by the consumption of water with SWCs. Clearly, this preliminary study needs to be validated with a larger number of patients with autism. Such studies are currently being undertaken in the USA, Panama, and China.

Drs. Jimenez and Chakravarty discussed "Seven Key Principles of Cancer Therapy: Alternative Approaches to Disease Resolution," their alternative approaches to treating cancer patients by various means that are nontoxic and non-destructive to the body. They discussed in detail the "7 Key Principles of Cancer Therapy" that they have adopted because they include elements that sustain health: (1) absence of toxins, (2) activation of the immune system, (3) appropriate levels of oxygen, (4) optimal nutritional status, (5) suppression of pathogenic elements and (6 and 7) maintenance of mental and spiritual integrities. They presented several case studies of cancer that were treated in their clinic for which effective responses were achieved. They also use SWCs in their treatment regimens.

The Second International Conference of Water and Health was timely and established the importance of previous investigations on the physical, molecular, and biological properties of SWC. In addition, this conference has encouraged new investigators to be involved in this important and clinically relevant subject. The contents of this volume are important for scientists, health providers and students.

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