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Nourish Vermont Traditional Foods and Health Gathering
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Nourish Vermont 2018 | Dr. László Boros

Fractionation and discrimination of heavy hydrogen (deuterium) for nutritional medicine

Deuterium (^{2}H; D) is a stable isotope of hydrogen (^{1}H) that weighs twice as much. Hydrogens are provided by the foods and liquids we consume. They have several fundamental biological roles including forming and maintaining the three-dimensional confirmation of proteins and DNA and as fuel to create ATP in the mitochondria. The creation of mitochondrial ATP occurs via rapidly rotating nanomotors, and the creation of ATP happens simultaneously with the creation of metabolic water in the mitochondria as the nanomotors rotate. When deuterium binds to the nanomotors instead of regular hydrogen, it acts like an "elephant in a china store" and ultimately breaks the nanomotors. This decrease in the capacity of nanomotors to drive the formation of ATP and metabolic water has devastating effects on metabolism, proliferation, and the structure of the cell and DNA. Biological systems continually deplete deuterium using a variety of methods including nutrition, gut microflora, biochemical reactions such as glycolysis, light and sound driven molecular resonance patterns, breathing, and exercise. But this ability to deplete deuterium decreases as we eat poorly, sleep less, get older, and become sick and diseased. As a consequence, deuterium acts as an oncoisotope and deuterium depletion is gaining acceptance as an important part of scientific, translational, and clinical program across the globe. Deuterium depletion provides a better understanding of how nutrition, physical factors such as light exposure, circadian rhythms, photoelectric and cosmic resonance, aging, and exercise "truly" effect the world's greatest health challenges – fatigue, impotence, cancer, diabetes, cognitive decline, heart disease, and premature aging. Dr. Boros' talk will clarify the biological art of submolecular deuterium fractionation, discrimination, and depletion and make a case for it being Nature's most efficient tool to protect cellular metabolism, energy production, and structure from permanent damage in order to preserve strength, health, and vitality!

Dr. László Boros holds a Doctor of Medicine degree from the Albert Szent-Györgyi School of Medicine, Szeged, Hungary and he is currently a Professor of Pediatrics, Endocrinology and Metabolism at the UCLA School of Medicine. He is an active investigator at the UCLA Clinical & Translational Science (CTSI) and the Los Angeles Biomedical Research Institutes (LABIOMED). He is the Chief Scientific Advisor of Metabolic Profiling at CignatureHealth where he studies heavy hydrogen, deuterium related clinical chemistry and advises clinical services. Dr. Boros is the co-inventor of the targeted 13C tracer fate association study (TTFAS)

platform to study deuterium as an oncoisotope and its depletion by mitochondrial matrix water exchanges to prevent oncoisotopic cell transformation by deuterium. Dr. Boros trained as a house staff in his medical school in gastroenterology after receiving a research training fellowship from the Hungarian Academy of Sciences. Dr. Boros was a visiting Scholar at the Essen School of Medicine in Germany and also worked as a Research Scientist at the Ohio State University, Department of Surgery, in the historic Zollinger-Ellison laboratory. Dr. Boros is the recipient of the C. Williams Hall Outstanding Publication Award from the Academy of Surgical Research of the United States (1997), the Richard E. Weitzman Memorial Research Award from the University of California (2001), the Excellence in Clinical Research Award from the General Clinical Research Center at the Harbor-UCLA Medical Center (2004) and Public Health Impact Investigator Award of the United States Food and Drug Administration (2011). Dr. Boros serves as an associate editor for the journals Pancreas and Metabolomics while he serves as an Academic Editor of Medicine® Oncology.

Suggested Literature:

1) **László G. Boros, T. Que Collins, Gábor Somlyai. What to eat or what not to eat—that is still the question. Neuro-Oncology, Volume 19, Issue 4, 1 April 2017, Pages 595–596, https://doi.org/10.1093/neuonc/now284**
2) **Gábor Somlyai, T. Que Collins, László G. Boros. Structural homologies between phenformin, lipitor and gleevec aim the same metabolic oncotarget in leukemia and melanoma. Oncotarget. 2017 Jul 25;8(30):50187-50192. https://doi.org/10.18632/oncotarget.16238**