



LABioMed

Los Angeles
Biomedical
Research Institute
at Harbor-UCLA Medical Center

SCIENCE FRIDAYS AT LA BIOMED

FRIDAY, November 21, 2014 4:00 TO 5:00PM
CDCRC 1st Floor Conference Room

Laszlo G Boros, M.D.

Professor of Pediatrics (Endocrinology & Metabolism)
University of California Los Angeles - UCLA School of Medicine

“PARTIAL DEUTERATION OF HYDROGEN BONDED SYSTEMS AND THEIR ROLE IN CANCER DEVELOPMENT”

Exceptional isotopic-substitution, bonding symmetry and the breakdown of collective proton tunneling in ice by partial deuteration call for interpretations of deuterium effects in other hydrogen-bonded systems. Such systems include complex DNA, where hydrogen bonds regulate structure and enzymatic functions for replication and repair. DNA acquires excess deuterium by direct glucose oxidation, which is one constitutively active metabolic pathway in cancer, which channels naturally elevated deuterium-containing substrates, e.g. glucose, and free cellular water by NADP2H(D) mediated reductive synthesis into the hydrogen-bridges of DNA. On the other hand, mitochondrial complex-IV produces, then fumarate hydratase recycles low deuterium matrix water via malate-dependent NADP1H(H) synthesis into DNA. Histone, nuclear DNA deuteration with exceptional hydrogen-bonding symmetry may contribute to aneuploidy, whereby deuterium depleted water exerts its anti-cancer efficacy.

EVERYONE IN THE LA BIOMED COMMUNITY IS WELCOME TO ATTEND –

TRAINEES, RESEARCH ASSOCIATES, PIS, AND ANYONE WHO IS INTERESTED
IN SCIENCE – SO PLEASE COME OUT AND JOIN US ON FRIDAY AFTERNOONS FOR
STIMULATING SCIENCE TALK, PIZZA, AND ICE-COLD REFRESHMENTS!

CHECK YOUR EMAILS AND THE MONTHLY CALENDAR OF LECTURES
FOR MORE INFORMATION ABOUT EACH TALK IN THE SERIES.

IF YOU WOULD LIKE TO LEAD A SCIENCE FRIDAYS DISCUSSION ON ANY TOPIC, PLEASE
CONTACT **MICHELINA IACOVINO** AT MIACOVINO@LABIOMED.ORG.



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SCAN TO ADD TO YOUR CALENDAR



ISOBOLOMICS RESEARCH LABORATORY

HARBOR-UCLA MEDICAL CENTER
1000 WEST CARSON STREET
TORRANCE, CALIFORNIA 90509

Partial deuteration of hydrogen bonded systems and their role in cancer development

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