DIPARTIMENTO DI FARMACIA E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **venerdì 10 Maggio 2019**
alle ore **14:30**
presso Aula 1, via Belmeloro 6, Bologna

il **Prof. Daniel Harki, Ph.D.**
Associate Professor, University of Minnesota, Minneapolis, USA
(ospite Prof.ssa Bolognesi)

terrà un seminario dal titolo:

TAMING THE MUTATORS: CHEMICAL PROBES THAT INHIBIT APOBEC CYTOSINE DEAMINASES

Colleghi e studenti sono cordialmente invitati

Commissione Ricerca e Attività Correlate - FaBiT

ABSTRACT

APOBEC enzymes are a family of 7 human DNA cytosine-to-uracil deaminases that degrade foreign DNA as part of the innate immune response to pathogen infection. However, cytosolic APOBEC enzymes, including APOBEC3G, have been implicated in promoting HIV-1 mutation, which contributes to viral genetic diversity, adaptability, and the evolution of drug resistance mutations. The nuclear enzyme, APOBEC3B, has been recently discovered as an endogenous source of mutation in >50% of all human cancers. Chemical modulators of APOBEC3B may be similarly useful in slowing or preventing the evolution of drug resistance mutations when co-administered during cancer therapy. Using a combination of high-throughput screening, computational design, organic synthesis, and biochemical assays, first-in-class chemical probes of APOBEC3G and APOBEC3B have been developed. This presentation will discuss our efforts to develop small molecule and nucleic acid probes of the APOBEC family of enzymes.

BIOGRAPHICAL SKETCH

Dr. Daniel Harki is an Associate Professor of Medicinal Chemistry at the University of Minnesota. Dr. Harki received his early training at West Virginia University, graduating with a B.A. in biology and chemistry in 1999. Later that year Dr. Harki began graduate studies in chemistry at The Pennsylvania State University working on the development of synthetic, antiviral nucleosides in the laboratory of Professor Blake Peterson. In 2005, Dr. Harki earned his Ph.D. in Chemistry from Penn State and subsequently began postdoctoral studies at the California Institute of Technology under the direction of Professor Peter Dervan. While at Caltech (2005-2009), Dr. Harki worked on projects that focused on the solution-phase synthesis and in vivo imaging of DNA-binding pyrrole-imidazole polyamides. In 2009, Dr. Harki began his independent academic career at the University of Minnesota.

The Harki laboratory is focused on the discovery and development of small molecule probes and therapeutics for addressing drug resistance in human cancers. In collaboration with Professor Reuben Harris at UMN, Dr. Harki has developed first-in-class small molecule inhibitors of APOBEC3A, APOBEC3B, and APOBEC3G. This technology is currently being commercialized by ApoGen Biotechnologies, Inc., which was co-founded by Dr. Harki. Dr. Harki has received a number of awards, including induction into Phi Beta Kappa and fellowships from the American Heart Association, the Friedreich's Ataxia Research Alliance, and the California Tobacco-Related Disease Research Program. Dr. Harki was named a V Foundation V Scholar from The V Foundation for Cancer Research and earlier this year received an Innovation and Discovery Grant from the American Association for Cancer Research.