



Ouliana Ziouzenkova

The Ohio State University, USA

Vitamin A: An unexpected role in B cell cancers

The deregulation of B cell differentiation has been shown to contribute to autoimmune disorders, hematological cancers, and aging. We provide evidence that the retinoic acid-producing enzyme aldehyde dehydrogenase 1a1 (*Aldh1a1*) is an oncogene suppressor in specific splenic B cells populations. *Aldh1a1* regulated transcription factors and oncogene suppressors retinoic acid receptor alpha (*Rara*), zinc finger protein *Zfp423*, and peroxisome proliferator-activated receptor gamma (*Pparg*) in splenocytes. In *Aldh1a1*^{-/-} mice, splenic IgG1⁺/CD19⁻ and IgG1⁺/CD19⁺ B cells acquired expression of proto-oncogenic genes *c-Fos*, *c-Jun*, and *Hoxa10* that resulted in splenomegaly. Human multiple myeloma patients and multiple myeloma B cell lines also lack *Aldh1a1* expression. Ectopic *Aldh1a1* expression rescued these cells. Our data highlight a mechanism by which vitamin A metabolism protects B cells from oncogenesis.

Biography

Ouliana Ziouzenkova is an Assistant Professor at The Ohio State University (OSU). She received a bachelor's and master's degree from The Kiev State University, Ukraine, Ph.D. at the University of Graz, Austria. Her post-doctoral training was at the University of Southern California and Brigham and Women's Hospital, Boston, MA. She has been honored with the Basic Science Award by the American Heart Association, the Lerner Young Faculty Award at BWH. She serves on an editorial board for 'Vitamins & Trace Elements', 'Internal Medicine' and a guest editor for 'BBA Molecular and Cell Biology of Lipids'. She leads a research team fostering innovative approaches in anti-obesity therapies and obesity associated disorders.

ziouzenkova.1@osu.edu