

JÚLIA BATKI



EDUCATION

- 2012-** Eötvös Loránd University, Faculty of Sciences, Budapest
MSc in Chemistry
- 2009-** Eötvös Loránd University, Eötvös József Special College, Budapest
Member of the Biology-Chemistry Workshop
- 2009 - 2012** Eötvös Loránd University, Faculty of Sciences, Budapest
BSc in Chemistry
Degree with Distinction
- 2005 - 2009** Apáczai Csere János Secondary School of Eötvös Loránd University, Budapest
Specialization in Science

LANGUAGES

- English Language certificate – C1 level

RESEARCH EXPERIENCE

- 2011 -** *Laboratory:* Prof. Vértessy G. Beáta
Institute of Enzymology, Research Centre for Natural Sciences
Hungarian Academy of Sciences
Position: MSc student, BSc student
- 2013** *Laboratory:* Dr. Julius Brennecke
Institute of Molecular Biotechnology, Vienna Biocenter
Austrian Academy of Sciences
Position: Summer intern

SCIENTIFIC AWARDS / SCHOLARSHIPS

- 2013** Stephen W. Kuffler Research Scholarship
Pro Scientia Gold Medal awarded by the Council of National Scientific Students' Associations
1st place at the XXXI. National Conference of Scientific Students' Association Biochemistry Session
Special award of Pro Scientia Gold Medalists' Association at the XXXI. National Conference of Scientific Students' Associations
Academic scholarship of the Hungarian Republic
- 2012** 2nd place at the Scientific Conference of Students, Institute of Chemistry
- 2011** Academic scholarship of the Hungarian Republic
- 2010** National scholarship of the Hungarian Prime Minister
- 2009** Gold medal at the 41th International Chemistry Olympiad, United Kingdom
1st place at the National Secondary School Competition, Chemistry Session
National scholarship of the Hungarian Prime Minister
- 2008** Silver medal at the 40th International Chemistry Olympiad, Hungary
3rd place at the National Secondary School Competition, Chemistry Session

- 2006** Silver medal at the 3rd International Junior Science Olympiad, Brasil
- 2005** Bronze medal at the 2nd International Junior Science Olympiad, Indonesia

PUBLICATIONS

- 2012** Muha V, Horvath A, Bekesi A, Pukancsik M, Hodoscsek B, Merenyi G, Rona G, Batki J, Kiss I, Jankovics F, Vilmos P, Erdelyi M, Vertessy BG (2012) Uracil-containing DNA in *Drosophila*: stability, stage-specific accumulation, and developmental involvement. *PLoS Genet* **8**: e1002738

CONFERENCE ATTENDANCE

- 2013** Vienna Biocenter Summer School Symposium, Vienna, Austria, presentation
The Student Scientific Conference on Biotechnology and Biomedicine, Brno, Czech Republic, presentation
XXXI. National Conference of Scientific Students' Association, presentation
Straub-days, Szeged, poster presentation
XIV. Eötvös Conference, Budapest, presentation
- 2012** János Szentágothai Memorial Conference, Pécs, poster presentation
FEBS 3+Meeting, Opatija, Croatia, presentation

SCIENTIFIC RESUME

My interest in science dates back to my early years in secondary school where I studied biology and chemistry at an advanced level. As I was interested in understanding the mechanism of biochemical reactions, I chose Chemistry BSc at Eötvös Loránd University, Budapest. Later, I developed an interest in molecular biology, especially in the field of nucleic acid research.

Currently, I am a member of the Laboratory of Genome metabolism and repair at the Institute of Enzymology. One of my research topics is the metabolism of uracil containing DNA and its role in the development of *Drosophila melanogaster*. During our research we have found that dUTPase, a key enzyme in DNA metabolism, is essential in the fruit fly. We have shown that dUTPase silencing induces strong lethality and increases the uracil content of DNA. We have also determined that dUTPase is important in maintaining genome integrity. To further characterize these phenotypes and the function of the enzyme our future plan is to create a knockout strain with the novel CRISPR technique in collaboration with the laboratory of Erdélyi Miklós (BRC, HAS). Another project is to investigate the relationship between dUTPase and uracil-DNA glycosylases (UDG) in *Drosophila*. This is of special current interest considering the limited set of UDGs in the fruit fly and the recently suggested role of one specific UDG in epigenetics. At the moment, we are also creating dUTPase knockout isogenic human cell lines using zinc-finger nucleases with which we could have a better understanding of the mechanism of thymineless cell death, a common strategy used in cancer treatment.

This summer I had the exceptional opportunity to participate in the Vienna Biocenter Summer School, where I carried out an independent research project in the field of small RNAs. I established a new FISH based method to visualize special genomic sequences, important in the piRNA pathway.

As a result of the prolific years I spent at one of the best research institutes in Hungary, I am strongly determined to pursue a career in scientific research. My main aim is to investigate scientific questions left unanswered and giving something new to the enthralling and already enormous knowledge of molecular biology. I am hoping that these findings will serve our society in the future.