

CURRICULUM VITAE

Last Name: Dolata
First Name: Jakub
Country of Citizenship: Poland
Date of Birth: 28th May 1986
Address: 74-39 62nd Street, Glendale, NY 11385
Phone Number: +1 (631)7465150
e-mail: dolata@cshl.edu

Academic and research career:

Since 2018 Cold Spring Harbor Laboratory, Martienssen Laboratory, Post-doc

My studies are focused on the small RNAs, their post-transcriptional modifications and their potential role in the regulation of plant genome stability.

2016-2018 Adam Mickiewicz University in Poznan, Faculty of Biology, Post-doc

My research was concerned with the role of ARGONAUTE1 protein in co-transcriptional miRNA biogenesis and alternative splicing in *Arabidopsis*.

2009-2016 Adam Mickiewicz University in Poznan, Faculty of Biology, Ph.D. study in Experimental and Molecular Biology.

Supervisor: Prof. Artur Jarmołowski.

Thesis title: Functional connections between chromatin structure, RNA Polymerase II processivity and alternative splicing in *Arabidopsis thaliana*.

The goal of my research was to extend knowledge about co-transcriptional splicing in *Arabidopsis thaliana* and the role of NTR1 protein in this process.

2007 – 2009 Adam Mickiewicz University in Poznan, Faculty of Biology, MSc degree in Molecular Biology.
Supervisor: Prof. Zofia Szweykowska-Kulińska.

Thesis title: Studies on potato *CBP80* (*S. tuberosum* var. Désirée) and tobacco *CBP20* (*N. tabacum* var. *Xanthi*) genes potentially related to increased tolerance to drought

The main goal of my research was to silence *CBP80* gene expression using artificial miRNA approach and obtain drought tolerant potato plants.

2004 – 2007 Adam Mickiewicz University in Poznan, Faculty of Biology, BSc degree in Molecular Biology.
Supervisor: Dr. Katarzyna Dorota Raczynska.

Thesis title: Transcriptional and post-transcriptional mechanisms and gene expression regulation in plants mitochondria

Description of mitochondrial gene expression regulation in plants.

Research stays:

- 2014.08.14 - 2015.02.13** Department of Molecular, Cellular and Developmental Biology,
University of Michigan, Ann Arbor, MI, USA
- 2012.04.15-29** Scottish Crop Research Institute in Ivergowrie, Dundee, Scotland, UK
- 2011.10.01-14** Scottish Crop Research Institute in Ivergowrie, Dundee, Scotland, UK
- 2010.09.15-29** Scottish Crop Research Institute in Ivergowrie, Dundee, Scotland, UK
- 2010.06.27-07.11** Scottish Crop Research Institute in Ivergowrie, Dundee, Scotland, UK
- 2008/2009** Novazym Poland (biotechnology company)

Publications:

Brzek A, Cichocka M, **Dolata J**, Juzwa W, Schümperli D, Raczyńska KD. Positive cofactor 4 (PC4) contributes to the regulation of replication-dependent canonical histone gene expression. *BMC Mol Biol.* 2018 Jul 27;19(1):9

Dolata J, Taube M, Bajczyk M, Jarmolowski A, Szweykowska-Kulinska Z, Bielewicz D. Regulation of Plant Microprocessor Function in Shaping microRNA Landscape. *Front Plant Sci.* 2018 Jun 5;9:753

Pieczynski M, Kruszka K, Bielewicz D, **Dolata J**, Szczesniak M, Karlowski W, Jarmolowski A, and Szweykowska-Kulinska Z. A Role of U12 Intron in Proper Pre-mRNA Splicing of Plant *Cap Binding Protein 20* Genes. *Front. Plant Sci.* (2018) 9:475.

Kowalczyk J, Palusinska M, Wroblewska-Swiniarska A, Pietras Z, Szewc L, **Dolata J**, Jarmolowski A, Swiezewski S. Alternative Polyadenylation of the Sense Transcript Controls Antisense Transcription of DELAY OF GERMINATION 1 in Arabidopsis. *Molecular Plant* 2017; 10(10):1349-1352

Szyrajew K, Bielewicz D, **Dolata J**, Wójcik A, Nowak K, Szczygieł-Sommer A, Szweykowska-Kulinska Z, Jarmolowski A, Gaj M. MicroRNAs are intensively regulated during induction of somatic embryogenesis in Arabidopsis. *Frontiers in Plant Science* 2017 8(18)

Stepien A*, Knop K*, **Dolata J***, Taube M, Bajczyk M, Barciszewska-Pacak M, Pacak A, Jarmolowski A, Szweykowska-Kulinska Z. Posttranscriptional coordination of splicing and miRNA biogenesis in plants. *WIRES RNA* ; Published online Nov 09 2016

Dolata J, Bajczyk M, Bielewicz D, Niedojadlo K, Niedojadlo J, Pietrykowska H, Walczak W, Szweykowska-Kulinska Z, Jarmolowski A. Salt Stress Reveals a New Role for ARGONAUTE1 in miRNA Biogenesis at the Transcriptional and Posttranscriptional Levels. *Plant Physiol.* 2016 Sep;172(1):297-312.

Zielezinski A*, **Dolata J***, Alaba S*, Kruszka K*, Pacak A*, Swida-Barteczka A, Knop K, Stepien A, Bielewicz D, Pietrykowska H, Sierocka I, Sobkowiak L, Lakomiak A, Jarmolowski A, Szweykowska-Kulinska Z, Karlowski WM. mirEX 2.0 - an integrated environment for expression profiling of plant microRNAs. *BMC Plant Biol.* 2015 Jun 16;15:144.

Dolata J*, Guo Y*, Kołowerzo A, Smoliński D, Brzyżek G, Jarmolowski A, Świeżewski S. NTR1 is required for transcription elongation checkpoints at alternative exons in Arabidopsis. *EMBO J.* 2015 Feb 12;34(4):544-58.

Pieczynski M, Marczewski W, Hennig J, **Dolata J**, Bielewicz D, Piontek P, Wyrzykowska A, Krusiewicz D, Strzelczyk-Zyta D, Konopka-Postupolska D, Krzeslowska M, Jarmolowski A, Szweykowska-Kulinska Z. Down-regulation of CBP80 gene expression as a strategy to engineer a drought-tolerant potato. *Plant Biotechnol J*. 2013 May;11(4):459-69.

Bielewicz D*, **Dolata J***, Zielezinski A*, Alaba S*, Szarzynska B, Szczesniak MW, Jarmolowski A, Szweykowska-Kulinska Z, Karlowski WM. mirEX: a platform for comparative exploration of plant pri-miRNA expression data. *Nucleic Acids Res*. 2012 Jan;40(Database issue):D191-7.

International conferences:

IGC Symposium 2017, Plant RNA Biology, Oeiras, Portugal (2017) "*ARGONAUTE1 acts in a close relation to chromatin and is involved in alternative splicing regulation in Arabidopsis thaliana*" (oral presentation).

FEBS Congress & Young Scientists' Forum, Jerusalem, Israel (2017) "*ARGONAUTE1 acts in a close relation to chromatin and is involved in alternative splicing regulation in Arabidopsis thaliana*" (poster).

Chromatin and Epigenetics, EMBO Conference, Heidelberg, Germany (2017) "*ARGONAUTE1 acts in a close relation to chromatin and is involved in alternative splicing regulation in Arabidopsis thaliana*" (poster).

RNA Meeting, Kyoto, Japan (2016) "*A new role for AGO1 in plants: The co-transcriptional regulation of miRNA biogenesis in A. thaliana*" (oral presentation).

International Conference on Arabidopsis Research, Paris, France (2015); "*Salt stress reveals a new role of AGO1 in the miRNA biogenesis pathway at both, transcriptional and post-transcriptional levels*" (short oral presentation & poster).

International Conference on Arabidopsis Research, Vancouver, Canada (2014); "*NTR1 is involved in splicing checkpoints formation and RNA Pol II pausing at alternative splicing sites in Arabidopsis*" (oral presentation & poster).

Post-transcriptional Gene Regulation in Plants, Poznan, Poland(2014); "*Salt stress reveals a new role of AGO1 in the miRNA biogenesis pathway at both, transcriptional and post-transcriptional levels*" (oral presentation & poster).

Non-coding RNA in plants, Wittenberg, Germany, (2013); "*Plant microRNA biogenesis is regulated at the post-transcriptional level in salt stress response*" (poster).

International conference "Structural biology of plants and microbes"; Poznan, Poland (2013);

Polish-German Biochemical Societies Joint Meeting, Poznan (2012); "*Influence of the SWI/SNF complex on alternative splicing in A. thaliana*" (poster).

RNA meeting 2012, Ann Arbor MI USA (2012); "*mirEX- comprehensive platform for highthroughput analysis of Arabidopsis pri-miRNAs*" (poster).

Alternative Splicing in Neurodegenerative Diseases and Cancer, Tel Aviv, Israel (2010)

EURASNET Interdisciplinary Focus Meeting Frontiers in Structural Biology of RNAs and RNPs, Poznan, Poland (2010); "*Global analysis of A. thaliana miRNA genes expression using the high throughput Real Time PCR platform*" (poster)

Research projects:

- 2018-2021** A role for ARGONAUTE1 protein in miRNA biogenesis and pre-mRNA splicing in *Arabidopsis thaliana*.
National Science Centre (UMO-2017/25/B/NZ1/00603) – Principal investigator
- 2017-2020** New role of a DRB1 (HYL1) in an RNA metabolism.
National Science Centre (UMO-2016/23/D/NZ1/00152) – Co-investigator
- 2014-2019** The crosstalk between the microRNA biogenesis complex, splicing and polyadenylation machinery in plants.
National Science Centre (UMO-2013/10/A/NZ1/00557) – Co-investigator
- 2014-2015** Functional connections between chromatin structure, RNA Polymerase II processivity and alternative splicing in *Arabidopsis thaliana*.
National Science Centre (UMO-2014/12/T/NZ2/0024) – Principal Investigator
- 2012-2015** The cross-talk between chromatin structure and alternative splicing in *Arabidopsis thaliana*: an RNA-seq approach.
National Science Centre (UMO-2011/03/N/NZ2/03070) – Principal Investigator
- 2009-2013** ERA – Plant Genomics Plant Alternative Splicing and Abiotic Stress (PASAS) – Co-investigator
- 2008-2011** Signaling control of stress tolerance and production of stress protective compounds in plants (312/N-COST/2008) – Co-investigator

Awards:

Scholarship for an outstanding young scientist in 2018 (Ministry of Science and Higher Education)

Adam Mickiewicz University Rector's Award in 2017

Prime Minister Award for the best Ph.D. thesis in 2016

Adam Mickiewicz University Rector's Award in 2016

START 2016 - Foundation for Polish Science - Award for young scientists in 2016

Parnas' Award for the best publication from biochemistry/molecular biology field in Poland, in 2015 (*NTR1 is required for transcription elongation checkpoints at alternative exons in Arabidopsis*).

Polish Academy of Sciences (Department in Poznan) Award for Ph.D. Students for the best publication in 2015 (*NTR1 is required for transcription elongation checkpoints at alternative exons in Arabidopsis*).

Polish Genetic Committee Award for the best publication in the field of genetics in 2012 (*mirEX- comprehensive platform for highthroughput analysis of Arabidopsis pri-miRNAs*).

Polish Academy of Sciences Biotechnology Committee Award for the best publication in 2012 (*Down-regulation of CBP80 gene expression as a strategy to engineer a drought-tolerant potato*).

Journal reviewer:

New Phytologist

Plant Physiology and Biochemistry

Biochemistry

Acta Biochimica Polonica

Teaching:

2009/2010 Biochemistry - classes for Biology students

2010/2011 Biochemistry - classes for Biology students

2011/2012 Molecular Genetics - classes for Biotechnology students

Biochemistry - classes for Biology students

2012/2013 Biochemistry - classes for Biology students

2017/2018 Genetics - classes for Bioinformatics students

Molecular Biology - classes for Biology students

Molecular Biology - classes for Biotechnology students

Molecular Mechanisms of Plants Stress Response - classes for Biotechnology students