

Eva DVOŘÁK TOMAŠTÍKOVÁ – CV

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Centre of Plant Structural and Functional Genomics, Institute of Experimental Botany, Czech Academy of Sciences

Slechtitelu 31, Olomouc, Czech Republic

WORK EXPERIENCE

2019 – now: *senior researcher*

- Institute of Experimental Botany, The Academy of Sciences of the Czech Republic, Olomouc, Czech Republic
- Centre of Plant Structural and Functional Genomics (Assoc. Prof. Ales Pecinka)

2016 – 2018: *postdoctoral research fellow*

- Swedish University of Agricultural Sciences (Uppsala, **Sweden**)
- Linnean Centre for Plant Biology (prof. Lars Hennig, prof. Claudia Kohler)
- Funded by Carl Tryggers Stiftelse för Vetenskaplig Forskning

2014 – 2016: *postdoctoral researcher*

- Institute of Experimental Botany, The Academy of Sciences of the Czech Republic, Olomouc, Czech Republic
- Centre of Plant Structural and Functional Genomics (Dr. Beata Petrovska)
- Funded by Program for the Support of Perspective Human Resources, Czech Academy of Sciences

EDUCATION AND TRAINING ABROAD

2016 – 2018: *postdoctoral research fellow*

- Swedish University of Agricultural Sciences (Uppsala, **Sweden**)
- Linnean Centre for Plant Biology (prof. Lars Hennig, prof. Claudia Kohler)
- Funded by Carl Tryggers Stiftelse för Vetenskaplig Forskning

10/2013 – 10/2015: *several short postdoctoral research visits* (6 months in total)

- IPK Gatersleben, Department of Cytogenetics and Genome Analyses (Gatersleben, **Germany**)
- Research Group Chromosome Structure and Function – Dr. Andreas Houben

2010 – 2014: *Ph.D. in Botany*

- Faculty of Science, Palacky University Olomouc, Czech Republic
- Institute of Experimental Botany (prof. Jaroslav Dolezel)

1/2013 – 6/2013: *postgraduate fellowship*

- IPK Gatersleben, Department of Cytogenetics and Genome Analyses (Gatersleben, **Germany**)
- Research Group Chromosome Structure and Function – Dr. Dmitri Demidov
- Funded by Erasmus Fellowship

2008 – 2010: *MSc. in Molecular Biology and Genetics*

- Palacky University Olomouc, Czech Republic

2005 – 2008: *BSc. in Molecular Biology and Genetics*

- Palacky University Olomouc, Czech Republic

RESEARCH

GRANT AWARDS

2025: *Role of SUMOylation and SUMO-binding factors in Arabidopsis genome stability maintenance*

- Internal grant agency of the Institute of Experimental Botany, Czech Academy of Sciences (No. 103610, 13000 €)

2023: *Role of SUMO- and Ubiquitin-ligase complexes in Arabidopsis genome stability*

- Internal grant agency of the Institute of Experimental Botany, Czech Academy of Sciences (No. 100610, 13000 €)

2015 – 2016: *Role of the TPXL gene family in Arabidopsis thaliana*

- “Program for the Support of Perspective Human Resources”, Czech Academy of Sciences (L200381502, 35000 €)

STIPENDS AND AWARDS

2023: EMBO Travel grant, SUMOylation: from discovery to translation, 2023, Povia de Varzim, Portugal

2018: E och T Westins stiftelse för lantbruksforskning (Sweden), travel grant, Plant Genome Stability and Change 2018, Gatersleben, Germany

2013: Erasmus Fellowship, IPK Gatersleben, Germany

2013: EMBO Travel grant, 3rd European Workshop on Plant Chromatin 2013, Madrid, Spain

BIBLIOGRAPHIC SUMMARY (9th January 2026)

- 21 peer-reviewed articles in Web of Science
- 9 first or corresponding author peer-reviewed articles
- 1 book chapter
- h-index 11, 266 citations

INTERNATIONAL COLLABORATIONS

- A. Bachmair, Max Perutz Lab, Vienna, Austria
- K. Tamura, University of Shizuoka, Shizuoka, Japan
- K. Graumann, Oxford Brookes University, Oxford, United Kingdom

INVITED SPEAKER AT INTERNATIONAL CONFERENCES

- SUMOylation: From discovery to translation (2025). Title: The role of SUMOylation in DNA-protein crosslink repair in Arabidopsis
- SEB meeting Prague (2024). Title: Out of the haze of DNA-protein crosslink repair in plants
- SUMOylation: From discovery to translation (2023, oral presentation). Title: The role of SUMOylation in DNA-protein crosslink repair in Arabidopsis
- Genome organization by SMC complexes (2022). Title: SMC5/6-mediated SUMOylation plays a role in DNA-protein crosslink repair in Arabidopsis.

COMMISSION OF TRUST

- Main initiator and organizer of Young Researcher Retreat, Institute of Experimental Botany ASCR
- Member of the organizing committees of the EMBO Workshop SUMOylation: From discovery to translation 2027, EMBO Workshop Plant Genome Stability and Change 2024, and Czech Plant Nucleus Workshops in 2021 and 2023
- Member of Proteocure COST action (CA20113)
- Reviewer for the funding bodies: GA UK (Czech Republic)
- Reviewer of scientific papers (The Plant Cell, New Phytologist, The Plant Journal, Plant Physiology)

EDUCATIONAL ACTIVITIES

- Consultant of 2 PhD theses (Swedish University of Agricultural Sciences, Uppsala, Sweden; Palacky University, Olomouc, Czech Republic), Supervisor of 5 Master theses and 4 Bachelor theses, Consultant of 2 Master theses (Palacky University, Olomouc, Czech Republic)
- Lecturer, Molecular Mechanisms of Cell Ageing, Masaryk University, Brno, Czech Republic

SUPERVISED STUDENTS

PhD consultant:

Mgr. Klára Procházková, Palacky University Olomouc, Identification of genes involved in repair of toxic DNA-protein crosslinks in *Arabidopsis thaliana*; supervisor doc. Mgr. Aleš Pečinka, Ph.D. (defended 2022)

MSc. Lejon Kraleman, Swedish University of Agricultural Sciences, Uppsala, Sweden, Genetic and epigenetic mechanisms underlying the regulation of flowering time; supervisor Prof. Lars Hennig (defended 2019)

MSc supervisor:

Bc. Kateřina Šléglová, Palacky University Olomouc, Role of the nuclear pore complex in plant genome stability (defended 2025)

Bc. Pavel Kolodin, Palacky University Olomouc, Role of SUMO- and ubiquitin-ligase complexes in *Arabidopsis thaliana* genome stability (defended 2024)

Bc. Veronika Kašková, Palacky University Olomouc, Mechanism of DNA-protein crosslinks repair in *Arabidopsis thaliana* (defended 2021)

Bc. Klára Ptošková, Palacky University Olomouc, Regulation of Aurora kinase 1 by members of TPX2 family in *Arabidopsis thaliana* (defended 2017)

BSc supervisor:

Kateřina Šléglová, Palacky University Olomouc, Cloning of plasmid STUbL2 and WSS1A constructs to study interactors in *Arabidopsis thaliana* (defended 2023)

Adéla Nedavašková, Palacky University Olomouc, Identification of new genes involved in DNA-protein crosslink repair in *Arabidopsis* (defended 2022)

Tereza Dostálová, Palacky University Olomouc, Development of the population for analyses of homologous recombination frequencies in *Arabidopsis thaliana* (defended 2022)

David Šimek, Palacky University Olomouc, *Arabidopsis thaliana* SMC5/6 complex function in DNA damage repair (defended 2021)

LIST OF PUBLICATIONS

Bouchal, J., H. Neuwirt, **E. Tomastikova**, and Z. Culig. 2007. "Effects of coactivator CBP and androgen receptor on estrogen receptor beta in prostate cancer cell lines." *Bju International* 100:34. IF 2.751.

Bouchal, J., F. R. Santer, P. P. S. Hoeschele, **E. Tomastikova**, H. Neuwirt, and Z. Culig. 2011. "Transcriptional Coactivators p300 and CBP Stimulate Estrogen Receptor-Beta Signaling and Regulate Cellular Events in Prostate Cancer." *Prostate* 71 (4):431-437. doi: 10.1002/pros.21257. IF 3.485.

Tomastikova, E., V. Cenklova, L. Kohoutova, B. Petrovska, L. Vachova, P. Halada, G. Kocarova, and P. Binarova. 2012. "Interactions of an *Arabidopsis* RanBPM homologue with LisH-CTLH domain proteins revealed high conservation of CTLH complexes in eukaryotes." *BMC Plant Biology* 12. doi: 10.1186/1471-2229-12-83. IF 4.354.

Petrovska, B., H. Jerabkova, L. Kohoutova, V. Cenklova, Z. Pochylova, Z. Gelova, G. Kocarova, L. Vachova, M. Kurejova, **E. Tomastikova**, and P. Binarova. 2013. "Overexpressed TPX2 causes ectopic formation of microtubular arrays in the nuclei of acentrosomal plant cells." *Journal of Experimental Botany* 64 (14):4575-4587. doi: 10.1093/jxb/ert271. IF 5.794.

Tomastikova, E., D. Demidov, H. Jerabkova, P. Binarova, A. Houben, J. Dolezel, and B. Petrovska. 2015. "TPX2 Protein of *Arabidopsis* Activates Aurora Kinase 1, But Not Aurora Kinase 3 In Vitro." *Plant Molecular Biology Reporter* 33 (6):1988-1995. doi: 10.1007/s11105-015-0890-x. IF 2.304.

Pracharova, J., T. Radosova Muchova, **E. Dvorak Tomastikova**, F. P. Intini, C. Pacifico, G. Natile, J. Kasparkova, and V. Brabec. 2016. "Anticancer potential of a photoactivated transplatin derivative containing the methylzaindole ligand mediated by ROS generation and DNA cleavage." *Dalton Trans* 45 (33):13179-86. doi: 10.1039/c6dt01467d. IF 4.029.

- Boruc, J., X. Deng, E. Mylle, N. Besbrugge, M. Van Durme, D. Demidov, **E. Dvorak Tomastikova**, T. C. Tan, M. Vandorpe, D. Eeckhout, T. Beeckman, M. K. Nowack, G. De Jaeger, H. Lin, B. Liu, and D. Van Damme. 2019. "TPX2-LIKE PROTEIN3 Is the Primary Activator of α -Aurora Kinases and Is Essential for Embryogenesis." *Plant Physiol* 180 (3):1389-1405. doi: 10.1104/pp.18.01515. IF 6.902.
- Demidov, D., S. Heckmann, O. Weiss, T. Rutten, **E. Dvorak Tomastikova**, M. Kuhlmann, P. Scholl, C. M. Municio, I. Lermontova, and A. Houben. 2019. "Deregulated Phosphorylation of CENH3 at Ser65 Affects the Development of Floral Meristems in." *Front Plant Sci* 10:928. doi: 10.3389/fpls.2019.00928. IF 4.402.
- Dvorak Tomastikova, E.**, T. Rutten, P. Dvořák, A. Tugaj, K. Ptošková, B. Petrovská, D. van Damme, A. Houben, J. Doležel, and D. Demidov. 2020. "Functional Divergence of Microtubule-Associated TPX2 Family Members in." *Int J Mol Sci* 21 (6). doi: 10.3390/ijms21062183. IF 5.924.
- Nowicka, A., B. Tokarz, J. Zwyrtková, **E. Dvorak Tomastikova**, K. Procházková, U. Ercan, A. Finke, W. Rozhon, B. Poppenberger, M. Otmar, I. Niezgodzki, M. Krečmerová, I. Schubert, and A. Pecinka. 2020. "Comparative analysis of epigenetic inhibitors reveals different degrees of interference with transcriptional gene silencing and induction of DNA damage." *Plant J* 102 (1):68-84. doi: 10.1111/tpj.14612. IF 6.486.
- Trejo-Arellano, M. S., S. Mehdi, J. de Jonge, **E. Dvorak Tomastikova**, C. Kohler, and L. Hennig. 2020. "Dark-Induced Senescence Causes Localized Changes in DNA Methylation." *Plant Physiology* 182 (2):949-961. doi: 10.1104/pp.19.01154. IF 8.34.
- Dvorak Tomastikova, E.**, A. Hafren, M. S. Trejo-Arellano, S. R. Rasmussen, H. Sato, J. Santos-Gonzalez, C. Kohler, L. Hennig, and D. Hofius. 2021. "Polycomb Repressive Complex 2 and KRYPTONITE regulate pathogen-induced programmed cell death in Arabidopsis." *Plant Physiology* 185 (4):2003-2021. doi: 10.1093/plphys/kiab035. IF 8.34.
- Prochazkova, K., A. Finke, **E. Dvorak Tomastikova**, J. Filo, H. Bente, P. Dvořák, M. Ovečka, J. Šamaj, and A. Pecinka. 2022. "Zebularine induces enzymatic DNA-protein crosslinks in 45S rDNA heterochromatin of Arabidopsis nuclei." *Nucleic Acids Res* 50 (1):244-258. doi: 10.1093/nar/gkab1218. IF 14.9.
- Vladejić, J., F. Yang, **E. Dvorak Tomastikova**, J. Doležel, J. J. Paleček, and A. Pecinka. 2022. "Analysis of BRCT5 domain-containing proteins reveals a new component of DNA damage repair in Arabidopsis." *Front Plant Sci* 13:1023358. doi: 10.3389/fpls.2022.1023358. IF 4.1.
- Dvorak Tomastikova, E.**, F. Yang, K. Mlynářová, S. Hafidh, Š. Schořová, A. Kusová, M. Pernisová, T. Přerovská, B. Klodová, D. Honys, J. Fajkus, A. Pecinka, and P. P. Schrumfová. 2023. "RUVBL proteins are involved in plant gametophyte development." *Plant J* 114 (2):325-337. doi: 10.1111/tpj.16136.
- Dvorak Tomastikova, E.**, K. Prochazkova, F. Yang, J. Jemelkova, A. Finke, A. Dorn, M. Said, H. Puchta, and A. Pecinka. 2023. SMC5/6 complex-mediated SUMOylation stimulates DNA-protein crosslink repair in Arabidopsis. *Plant Cell* 35(5):1532-1547. doi: 10.1093/plcell/koad020. IF 11.277.
- Lelkes, E., J. Jemelková, M. Holá, B. Štefanovie, P. Kolesár, R. Vágnerová, **E. Dvorak Tomastikova**, A. Pecinka, K. J. Angelis, and J. J. Paleček. 2023. "Characterization of the conserved features of the NSE6 subunit of the Physcomitrium patens SMC5/6 complex." *Plant J* 115 (4): 1084-1099. doi: 10.1111/tpj.16282. IF 6.2.
- Dvorak Tomastikova, E.**, J. Vaculíková, V. Štenclová, K. Kaduchová, Z. Pobořilová, J. J. Paleček, and A. Pecinka. 2024. "The interplay of homology-directed repair pathways in the repair of zebularine-induced DNA-protein crosslinks in Arabidopsis." *Plant J* 119 (3):1418-1432. doi: 10.1111/tpj.16863. IF 6.2.
- Dvorak Tomastikova, E.**, and A. Pecinka. 2025. "A Practical Approach to High-Throughput and Accurate Mapping-by-Sequencing in Arabidopsis." *Methods Mol Biol* 2873:53-70. doi: 10.1007/978-1-0716-4228-3_4.
- Dvorak Tomastikova, E.**, and A. Pecinka. 2025. "Cytidine analogs in plant epigenetic research and beyond." *J Exp Bot* 76 (9):2419-2432. doi: 10.1093/jxb/erae522. IF 6.9.

Vladejic J, K. Prochazkova K, **E. Dvorak Tomastikova**, Z. de Cock, K. Kaduchová, B. Králová, J. Pokorná, M. Pavlíková, J.J. Paleček, and A. Pecinka. 2026. "Condensin II mediates resistance to genotoxic stress and prevents mitotic defects in Arabidopsis." *P Physiol*, accepted. IF 6.9.