Curriculum Vitae

Personal Details:
Dr. Dimitrios Kaloudas
Laboratory of Synthetic Biology & Bioinformatics,
Faculty of Biology,
Sofia University 'St. Kl. Ohridski',
8 Dragan Tzankov Blvd.,1164 Sofia, Bulgaria
Phone: +359-(0)28167340
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Education:

Sofia University "St. Kliment Ohridski", Bulgaria

MSc in Genetics and Genomics (with distinction) Feb 2017. Project: Design and creation of a Bioinformatics Web server.

University of Essex, UK

Doctor of Philosophy in Cell and Molecular Biology, December 2004

Full Studentship by the University (Tuition Fees & Bursary). Title: Structure, Evolution and Expression of the H-BOX/NC gene family of *Arabidopsis thaliana*

Glamorgan University, UK

Bachelor of Science (Honours) in Biology, June 2000

Projects' title: Determination of the Viable Microbial Population in Soil Sample

Languages:

Native: Greek, Fluent: English

Working experience

Laboratory of Synthetic Biology & Bioinformatics, Faculty of Biology, Sofia University 'St. Kl. Ohridski', researcher – April 2025 – present

MAICh (CIHEAM)

Post-Doc. Project: The role of Prolyl 4-hydroxylases (P4H) in tomato fruit ripening. Generating constructs for immunoprecipitation assays, Y2H, protein-protein interactions with bimolecular fluorescence complementation (BiFC, split YFP), over expression and downregulation studies. Generation of transgenic plant lines, protein transient expression. Organizing lab courses and lectures for students. (Feb 2014-July 2015, May 2017 – September 2019, June 2020 – January 2023)

University of Essex

Research officer. Bioinformatic expression analysis for Calvin cycle-related genes in *Arabidopsis thaliana* and *Triticum aestivum* using online available micro array data. May – July 2012

Istituto di Virologia Vegetale Turin Italy.

Awarded an STSM under the COST Action FA0806. Worked under Dr. Pantaleo Vitantonio on the "Effect of Nicotiana benthamiana dicers in symptom development in CMV–CMVsatRNA infections" project. Work concentrated on in vitro transcriptions of CMV RNAs , SatRNA and inoculation of N. Benthamiana plants. 28 Feb -18 April 2011

IBMP France (University of Strasbourg)

Post-Doc, identification of siRNA species produced during polerovirus (BWYV) infection of *Arabidopsis thaliana* at Dr's V.Ziegler-Graff lab. Work involved plant transient assays, Northern analysis of high and low M.W. RNA , immunoprints, Y2H, construction of sRNA libraries (for Solexa system). Sep 2009 – Aug 2010

University of Essex

-Post-Doc on CP12 and Thioredoxin project with Prof. C. Raines on *Arabidopsis*. Post involves expression studies using RT-PCR , T-DNA mutants, design of constructs including GUS and GFP, microarray data mining and analysis from Genevestigator, bioinformatics (Aug07-Jun 09)

-Visiting fellow. Work on Coxsackie A9 strain virus in Prof. Glyn Stanway's lab. Work involved cell cultures, plaque assays, transfections, *in vitro* RNA transcription, RT-PCR analysis, viral RNA isolation. May 2007 – Aug 2007

417 ΝΙΜΤΣ, (Army mutual fund hospital institution), General Military Hospital of Athens (Athens-Greece), *Rhodes military hospital*. Worked as a microbiology lab assistant in the microbiology and the immunohistochemical laboratory (March 2006, -2007 during military service)

University of Essex

Research officer. Working on a CP12 project with Professor C. Raines on *Nicotiana Tobacum*. May 2005

Sixth form College Colchester

Post-16 AS and A2 level biology teacher. The post involved correction of students' reports, high communication, supervision and organisation skills. January to May 2005

Publications

1. P Singh, **D Kaloudas**, C A Raines (2008) Expression analysis of the Arabidopsis CP12 gene family suggests novel roles for these proteins in roots and floral tissues. J. Exp. Bot. 59, [14], pp. 3975-3985
2. R Groben, **D Kaloudas**, C A Raines, B Offmann, B Gontero (2010) Comparative sequence analysis of CP12, a small protein involved in the formation of a Calvin cycle complex in higher plants and algae. Photosynthesis Research 130, [3], pp.183-194
3. N McLeish, C Williams, **D Kaloudas**, M Roivainen, and G Stanway (2012) Symmetry-related clustering of positive charges is a common mechanism for heparan sulfate binding in enteroviruses". J Virol 86, [20], pp. 11163-11170
4. Stilianos Arhondakis, CraitaE.Bita, AndreasPerrakis, Maria E. Manioudaki, Afroditi Krokida, **Dimitrios Kaloudas** and Panagiotis Kalaitzis (2016). In silico Transcriptional Regulatory Networks Involved in Tomato Fruit Ripening. Frontiers in Plant Science [7] doi: 10.3389/fpls.2016.01234
5. **Dimitrios Kaloudas**, Robert Penchovsky (2018). Arabidopsis Homologues to the LRAT a Possible Substrate for New Plant-Based Anti-Cancer Drug Development. International Journal of Biomedical and Clinical Engineering, (7)1
6. **Dimitrios Kaloudas**, Robert Penchovsky. Plant-Derived Compounds and Their Potential Role in Drug Development (2018). International Journal of Biomedical and Clinical Engineering (7)1
7. Sotirios Fragkostefanakis, **Dimitrios Kaloudas**, Panagiotis Kalaitzis (2018).Pyridine 2,4-Dicarboxylic Acid Suppresses Tomato Seedling Growth. Frontiers in Chemistry.
8. Ifigeneia Mellidou, Egli C.Georgiadou, **Dimitrios Kaloudas**, Panagiotis Kalaitzis, Vasileios Fotopoulos Angelos, K.Kanellis. Book Chapter: Vitamins In book: Postharvest Physiology and Biochemistry of Fruits and Vegetables (2018) DOI: 10.1016/B978-0-12-813278-4.00017-8
9. Andreas Perrakis, Craita E. Bita, Stilianos Arhondakis, Afrodite Krokida, Khansa Mekkaoui, Dusan Denic, Konstantinos N. Blazakis, **Dimitrios Kaloudas** and Panagiotis Kalaitzis (2019). Suppression of a Prolyl 4 Hydroxylase Results in Delayed Abscission of Overripe Tomato Fruits. Frontiers in Plants doi: 10.3389/fpls.2019.00348
10. **Dimitrios Kaloudas**, Nikolet Pavlova, and Robert Penchovsky (2019). EBWS: Essential Bioinformatics Web Services for Sequence Analyses. IEEE/ACM Transactions on computational biology and bioinformatics (16),3
11. Nikolet Pavlova, **Dimitrios Kaloudas**, Robert Penchovsky (2019) Riboswitch distribution, structure, and function in bacteria. Gene 708, 38–48
12. Robert Penchovsky, Nikolet Pavlova, **Dimitrios Kaloudas** "RSwitch: a novel bioinformatics database on riboswitches as antibacterial drug targets". IEEE/ACM Transactions on computational biology and bioinformatics (2020) doi:10.1109/TCBB.2020.2983922

13. **Dimitrios Kaloudas**, Nikolet Pavlova, and Robert Penchovsky (2021). Lignocellulose, algal biomass, biofuels and biohydrogen: a review. Environmental Chemistry Letters. https://doi.org/10.1007/s10311-021-01203-0
14. **Dimitrios Kaloudas**, Nikolet Pavlova, and Robert Penchovsky (2021). Phycoremediation of wastewater by microalgae: a review. Environmental Chemistry Letters. https://doi.org/10.1007/s10311-021-01213-y
15. Robert Penchovsky, Nikolet Pavlova, **Dimitrios Kaloudas** (2021). ExBWS: extended bioinformatics web services for sequence analyses. Int. J. Bioinformatics Research and Applications. DOI: 10.1504/IJBRA.2021.117928.
16. Andreas Perrakis, Dusan Denic, Konstantinos N. Blazakis, Eleni Giannoutsou, **Dimitrios Kaloudas**, Craita E. Bita, Myrto Rizou, Afrodite Krokida, Mohamed Kouhen, Athina Lazaridou, Khansa Mekkaoui, Samia Belaidi, Zeina El Zein, Mohab Khalil, Lamia Ezzat, Noureldine Youssef, Maria Kosma, Anna G. González, Aline Monzer, Dimitra Papantoniou, Antri Varnava - Tello, Mondher Bouzayen, Ioannis-Dimosthenis S. Adamakis, Azeddine Driouich, Costas G. Billiaderis, Nicolas Kalogerakis, Panagiotis Kalaitzis (2021): A tomato prolyl-4-hydroxylase causes relocation of abscission zone and alters abscission kinetics:bioRxiv https://doi.org/10.1101/2021.04.20.440677
17. **Kaloudas, D.**, & Penchovsky, R. (2022). Plant-Derived Compounds and Their Potential Role in Drug Development. In I. Management Association (Ed.), Research Anthology on Recent Advancements in Ethnopharmacology and Nutraceuticals (pp. 502-517). IGI Global. http://doi:10.4018/978-1-6684-3546-5.ch026
18. Georgi Miloshev, Martina Traykovska, **Dimitrios Kaloudas**, and Robert Penchovsky (2022). Engineering a plasmid as a reporter system for quantifying gene expression in Escherichia coli: Proceedings of the Bulgarian Academy of Sciences http://dx.doi.org/10.7546/CRABS.2022.01.07
19. **Dimitrios Kaloudas**, Robert Penchovsky (2022). An allosteric ribozyme generator and an inverse folding ribozyme generator: two computer programs for automated computational design of oligonucleotide-sensing allosteric hammerhead ribozymes with YES Boolean logic function based on experimentally validated algorithms: Computers in Biology and Medicine. https://doi.org/10.1016/j.compbiomed.2022.105469
20. Robert Penchovsky, Dimitrios Kaloudas (2022). Molecular factors affecting tomato fruit size, Plant Gene,Volume 33, https://doi.org/10.1016/j.plgene.2022.100395
21. **Dimitrios Kaloudas**, Nikolet Pavlova, Robert Penchovsky, (2023) GHOST-NOT and GHOST-YES: Two programs for generating high-speed biosensors with randomized oligonucleotide binding sites with NOT or YES Boolean logic functions based on experimentally validated algorithms, Journal of Biotechnology,Volume 373, Pages 82-89, ISSN 0168-1656, https://doi.org/10.1016/j.jbiotec.2023.07.005.
22. Kutyrieva-Nowak N, Leszczuk A, Ezzat L, **Kaloudas D**, Zając A, Szymańska-Chargot M, Skrzypek T, Krokida A, Mekkaoui K, Lampropoulou E, Kalaitzis P and Zdunek A (2024) The modified activity of prolyl 4 hydroxylases reveals the effect of arabinogalactan proteins on changes in the cell wall during the tomato ripening process. Front. Plant Sci. 15:1365490. doi: 10.3389/fpls.2024.1365490
23. **Kaloudas, D**., Pavlova, N., Penchovsky, R. (2024). Computational Design of Allosteric Ribozymes via Genetic Algorithms. In: Astatke, M. (eds) RNA Amplification and Analysis. Methods in Molecular Biology, vol 2822. Humana, New York, NY. https://doi.org/10.1007/978-1-0716-3918-4_28

Training courses

University of Essex

Essex University, Staff Development Office: Training Course for part-time Graduate Teaching and Demonstrating, 2001

401 General Military Hospital of Athens

Training program and PTYCHIO (Degree) as microbiology lab assistant, March 2006

Activities-memberships

Glamorgan University

One of the first founder members of the Biological Society at the University. 1999

Essex University

3rd-year research students' representative. The post demanded high communicational and organisational skills. 2002-2003

Activities

Playing guitar, music, tennis.

Communication, Personal Development and Learning Skills

An ability to work effectively with others or as an individual, to communicate effectively via visual means, to work in a team on diverse assignments, experience in demonstrating, high commitment to teamwork and diversity, easily adapted to new working environments, good organisational skills. Willingness to learn & quick learning ability, an understanding of continuous improvement process, the ability and motivation to develop knowledge and skills in light of expanding job responsibilities.