

Associate Professor CEYHUN KAYIHAN



PERSONEL INFORMATION

Date of Birth: 22 June, 1982
Citizenship: Republic of Turkey
E-mail: ckayihan@baskent.edu.tr
Web: <https://kayihanlab.com/>

EDUCATION

Doctor of Philosophy (PhD) Middle East Technical University (METU), Department of Biotechnology (2014)
Master of Science (MSc) Middle East Technical University (METU), Department of Biotechnology (2007)
Undergraduate (BSc) Ankara University, Department of Biological Sciences (2003)

POSITION HELD

2004 - 2014 **Research Assistant**, METU, Graduate School of Natural and Applied Sciences, Department of Biotechnology
2011-2012 (12 months) **Visiting scientist**, Department of Plant System Biology, Oxidative stress signaling group, Gent University, Belgium
2015-2016 (19 months) **Post-doc**, Plant Biotechnology Lab. Department of Molecular Biology and Genetics, Gebze Technical University, Turkey.
2016-2016 (6 months) **Post-doc**, Microbial Biotechnology Lab. Department of Molecular Biology and Genetics, Gebze Technical University, Turkey.
2016-2022 **Assistant Professor Dr.** Department of Molecular Biology and Genetics, Baskent University, Ankara, Turkey.
2022- **Associate Professor Dr.** Department of Molecular Biology and Genetics, Baskent University, Ankara, Turkey.

RESEARCH INTERESTS

Bulk RNA Sequencing, Single-Cell/Nucleus RNA and ATAC Sequencing, Plant Physiology and Biochemistry, Plant Stress Physiology and Biochemistry, Transgenic Technologies, Post-transcriptional regulations, Plant Molecular Genetics, Plant Biotechnology, Agriculture Biotechnology, Phytoremediation

PROFESSIONAL SKILLS

- **Experimental Skills**

Isolation, preparation and analysis of DNA and RNA. cDNA and cRNA, PCR, qRT-PCR, RT-PCR, Electrophoresis, hybridizations, northern blot, southern blot, western blot, Kinetic analysis of enzymes, SDS and Native Polyacrylamide Gel Electrophoresis, Microarray experiments and meta-analysis of microarray data, Cloning experiments for improvement of transgenic bacteria, Inductively coupled plasma-atomic emission spectroscopy (ICP-AES), RNA-sequencing, Stem-loop qRT-PCR for miRNAs, Controlled cDNA Overexpression System, Qualitative and quantitative analysis of proteins by colorimetric methods, Quantification of metabolites

and osmoprotectants, Cloning experiments for improvement of transgenic plants, Chlorophyll fluorescence experiment, Confocal microscopy, High performance Liquid Chromatography (HPLC), Library preparation and data analysis for Single-cell/nucleus RNA sequencing

- **IT Skills**

Experienced user of Microsoft Office, SPSS data analysis package

Experienced user of Bioinformatics tools: Microarray data analyses (GeneSpring GX, HarvEST:WheatChip, MapMan, AgriGO), Bulk RNA sequencing (Galaxy, CLC Genomics, KEGG), Single-cell RNA sequencing (Loupe Browser)

PUBLICATIONS IN SCI & SCOPUS

17. **Ceyhun Kayihan**, Emre Aksoy, Su Naz Mutlu (2023) Boron toxicity induces sulfate transporters at transcriptional level in *Arabidopsis thaliana*. Turkish Journal Botany (IF: 1.5), 47:1-12 (Times cited: 1).

16. Türkölmez N, Karakaya M, Ekinci MH, Lucas SJ, Akkaya Ö, Gül Şeker M, Kayihan C, Özden Y. (2022). Determination of Molecular Interactions Between Fraser's Photinia (*Photinia X fraseri*) and its endophytic bacterium PGB_invit. Plant Cell, Tissue and Organ Culture (IF: 3), 151: 631-649 (Times cited: 1).

15. Emre AKSOY, Kubilay YILDIRIM, Musa KAVAS, **Ceyhun KAYIHAN**, Bayram Ali YERLIKAYA, Irmak ÇALIK, Ufuk DEMIREL, İlkey Sevgen (2022) General Guidelines for CRISPR/Cas-based genome editing in plants. Molecular Biology Reports (IF: 2.8), 49: 12151-12164 (Times cited: 2).

14. Kayihan C, Ünal H, Yaprak O, Mutlu S, Tunç M, Yılmaz I. (2022) Finding New Putative Genes Having Role in Excess Boron Responsive Mechanism from Probesets Identified as Unknown in Wheat Cultivars. F1000Research, 19-19 (SCOPUS).

13. Doğa Selin Kayihan, Emre Aksoy **Ceyhun Kayihan** (2021) Identification and expression profiling of toxic boron-responsive microRNAs and their targets in sensitive and tolerant wheat cultivars. Turkish Journal of Agriculture and Forestry (IF: 2.5), 45(4):411-433 (Times cited: 6).

12. **Ceyhun Kayihan** (2021) The involvement of the induction of anthocyanin biosynthesis and transport in toxic boron responsive regulation in *Arabidopsis thaliana*. Turkish Journal Botany (IF: 1.5), 45: 181-191 (Times cited: 6).

11. Doğa Selin Kayihan, **Ceyhun Kayihan**, Yelda Özden Çiftçi (2021) Transgenic tobacco plants overexpressing a cold-adaptive nitroreductase gene exhibited enhanced 2,4-dinitrotoluene detoxification rate at low temperature; International Journal of Phytoremediation (IF: 3.2), 23(1):1-9 (Times cited: 3).

10. Muhammed Hamit Ekinci; Doğa Selin Kayihan; **Ceyhun Kayihan**, Yelda Özden Çiftçi (2021) The role of microRNAs in recovery rates of *Arabidopsis thaliana* after cryopreservation. Plant Cell, Tissue and Organ Culture (IF: 2.7), 144:281-293 (Times cited: 3).

9. Beal J, Farny N, Angelli T, Selvarajah V, Baldwin G, Taylor R, Gershater M, Kiga D, Marken J, Sanchania V, Sison A, Workman C, iGEM Interlab Study Contributors (**Ceyhun KAYIHAN**). Robust estimation of bacterial cell count from optical density. Communications Biology, 2020; 3(512) (Times cited: 91).

8. Zeynep Girgin Ersoy, **Ceyhun Kayihan**, Sedef Tunca Gedik (2020) Higher nisin yield is reached with glutathione and pyruvate compared to haem in *Lactococcus lactis* N8. Brazilian Journal of Microbiology (IF: 2.47), 51 (3): 1247-1257 (Times cited: 1).

7. Doğa Selin Kayihan, **Ceyhun Kayihan**, Yelda Özden Çiftçi (2019) Regulation of boron toxicity responses via glutathione-dependent detoxification pathways at biochemical and molecular levels in *Arabidopsis thaliana*. Turkish Journal of Botany (IF: 1.09), 43:749-757 (Times cited: 5).

6. Doğa Selin Kayıhan, **Ceyhun Kayıhan**, Yelda Özden Çiftçi (2019) Moderate level of toxic boron cause differential regulation of microRNAs related to jasmonate and ethylene metabolisms in *Arabidopsis thaliana*. Turkish Journal of Botany (IF: 1.09), 43:167-172 (Times cited: 10).

5. **Kayıhan C**, Öz MT, Eyidoğan F, Yücel M, Öktem HA (2017) Physiological, Biochemical, and Transcriptomic Responses to Boron Toxicity in Leaf and Root Tissues of Contrasting Wheat Cultivars. Plant Molecular Biology Reporter (IF: 2.045), 35(1):97-109 (Times cited: 41).

4. Kayıhan DS, **Kayıhan C**, Çiftçi YÖ (2016) Excess boron responsive regulations of antioxidative mechanism at physio-biochemical and molecular levels in *Arabidopsis thaliana*. Plant Physiology and Biochemistry (IF: 3.234), 109:337-345 (Times cited: 45).

3. Erkal NA, **Kayıhan C**, Öktem HA, Yücel M, Eyidoğan F. (2015) Changes in oxidative damage and antioxidant enzyme activities of barley (*Hordeum vulgare* L.) cultivars exposed to rewarming upon freezing stress. Turkish Journal of Biochemistry, 40(5):363-369.

2. Öz M, Turan Ö, **Kayıhan C**, Eyidoğan F, Ekmekçi Y, Yücel M, Öktem HA (2014) Evaluation of photosynthetic performance of wheat cultivars exposed to boron toxicity by the JIP fluorescence test. Photosynthetica (IF: 1.81), 52(4):555-563 (Times cited: 35).

1. **Kayıhan C**, Eyidoğan F, Afşar N, Öktem HA, Yücel M (2012) Cu/Zn superoxide dismutase activity and respective gene expression during cold acclimation and freezing stress in barley cultivars. Biologia Plantarum (IF: 2.0), 56(4):693-698 (Times cited: 33).

NATIONAL (TR) INDEX ACADEMIC PUBLICATION

Ceyhun Kayıhan (2020) Effect of moderate and severe levels of boron toxicity on miR393 expression in *Arabidopsis thaliana*. Journal of Boron, 5(4):183-191.

PRESENTATIONS IN AN INTERNATIONAL CONFERENCE

Kayıhan C. Single-cell Transcriptomics in Plants: Current State and Future Directions The International Symposium on Single-Cell Transcriptomics, Ankara, 3/5/2023-4/5/2023 (ORAL PRESENTATION).

Kayıhan DS, Aksoy E, **Kayıhan C**. Identification and expression profiling of toxic boron-responsive microRNAs and their targets in sensitive and tolerant wheat cultivars. IV. International Agricultural, Biological & Life Science Conference: Edirne; 29/08/2022 - 31/08/2022 (ORAL PRESENTATION).

Kayıhan C, Aksoy E, Kayıhan DS. Determining the molecular regulation of excess boron sequestration with anthocyanin and glutathione into vacuole in *Arabidopsis thaliana*. IV. International Agricultural, Biological & Life Science Conference: Edirne; 29/08/2022 - 31/08/2022 (ORAL PRESENTATION).

Kayıhan C. The involvement of the induction of anthocyanin biosynthesis and transport in toxic boron responsive regulation in *Arabidopsis thaliana*. III. International Agricultural, Biological & Life Science Conference, 01/09/2021 - 03/09/2021 (ORAL PRESENTATION).

Kayıhan C, İnanç T. Increase in Bioethanol Production in Ethanologenic *Escherichia coli* KO11 via Combined Expression of FucO and bifunctional GSH genes. Eurasian Congress of Molecular Biotechnology: Trabzon; 19/09/2019 - 21/09/2019 (ORAL PRESENTATION).

Kayıhan DS, **Kayıhan C**, Özden Çiftçi Y. Expression and Regulation of Toxic Boron-Related Genes in *Arabidopsis thaliana* as A Model Plant and Screening of Striking Results in Contrasting Wheat Cultivars. II. International Green Biotechnology Congress: İstanbul; 09/09/2019 - 11/09/2019 (ORAL PRESENTATION).

Türkölmez N, Albayrak M, Ekinci H, Akkaya Ö, Gül Şeker M, Aydınoglu F, **Kayihan C**, Özden Çiftçi Y. Interaction between endophytic beneficial bacterium (PGP_invit) and in vitro cultured plants. II. International Green Biotechnology Congress: İstanbul; 09/09/2019 - 11/09/2019 (POSTER PRESENTATION).

Doğa Selin Kayihan, **Ceyhun Kayihan**, Yelda Özden Çiftçi; Insight into biochemical, transcriptional and post-transcriptional regulations of glutathione metabolism, jasmonate- and ethylene-related transcription factors in *Arabidopsis thaliana* exposed to toxic boron. 13th International Conference on Reactive Oxygen and Nitrogen Species in Plants: Emerging Roles in Plant Form and Function. p. 44, 10/09/2017 - 13/09/2017, Kuşadası, Aydın (ORAL PRESENTATION).

Doğa Selin Kayihan, **Ceyhun Kayihan**, Yelda Özden Çiftçi; Development of transgenic tobacco plants for improved phytoremediation of nitroaromatic contamination at lower temperatures. International Green Biotechnology Congress: p. 86, 11/09/2017-13/09/2017, İstanbul, Turkey (ORAL PRESENTATION).

Kayihan DS, **Kayihan C**, Özden Çiftçi Y. High boron responsive regulations of antioxidative mechanism at physio-biochemical and transcriptional levels in *Arabidopsis thaliana*. International Symposium on Boron in Agriculture. p. 117, 16/11/2016 - 18/11/2016, Ankara, Turkey (ORAL PRESENTATION).

Kayihan D, **Kayihan C**, Özden Çiftçi Y. Glutathione S Transferase activity and respective gene expression under boron toxicity in *Arabidopsis thaliana*. International Green Biotechnology Workshop, p. 56, 21/09/2015-23/09/2015, Kocaeli, Turkey (POSTER PRESENTATION).

Kayihan C.; Plant responses to abiotic stress: Transcriptome analysis of cereals. International Green Biotechnology Workshop: p. 24, 21/09/2015-23/09/2015 Kocaeli, Turkey (ORAL PRESENTATION).

Ceyhun Kayihan, M. Tufan Oz, Fusun Eyidogan, Huseyin Avni Oktem, Meral Yucel. Identification of boron-related genes following boron-toxicity and supplementary boron-enriched fertilizer to deficiency condition in wheat cultivars differing in boron tolerance. 3rd International Congress of the Molecular Biology Association of Turkey, p. 104, 10-12 September 2014, İzmir, Turkey (POSTER PRESENTATION).

Doga Selin Kayihan, **Ceyhun Kayihan**, Yelda Ozden Ciftci. The degree of oxidative damage and antioxidative changes due to exposure to boron deficiency and toxicity in *Arabidopsis thaliana*. 3rd International Congress of the Molecular Biology Association of Turkey, p. 206, 10-12 September 2014, İzmir, Turkey (POSTER PRESENTATION).

Kayihan C, Eyidogan F, Oz MT, Oktem HA, Yucel M. Boron stress-induced changes in antioxidant enzymes in wheat cultivars. XVII. International Plant nutrition colloquium Boron satellite meeting, p. 1173, 17-18 August 2013, İstanbul, Turkey (POSTER PRESENTATION).

Kayihan C, Oz MT, Eyidogan F, Yucel M, Oktem HA. Influence of boron toxicity on global expression profiles in wheat (*Triticum aestivum* L.). 15th European Congress on Biotechnology New Biotechnology Special Issue 29, p.127, 23-26 September 2012, İstanbul, Turkey (POSTER PRESENTATION).

Oz MT, **Kayihan C**, Gumusel D, Karagedikli G, Pallotta M, Sutton T, Langridge PE. Boron toxicity and deficiency in Triticeae: Update on tolerance mechanisms and transporters. 15th European Congress on Biotechnology New Biotechnology Special Issue 29 p.137, 23-26 September 2012, İstanbul, Turkey (POSTER PRESENTATION).

Baloğlu MC, Kavas M, Öz MT, Battal A, Eroğlu A, **Kayihan C**, Öktem HA, Yücel M. Cloning of wheat NAC-type transcription factors and Agrobacterium mediated transformation of wheat mature and immature embryos. Plant Transformation Technologies II, International Conference, Book of Abstracts pp 71, Vienna, Austria, February 19-22, 2011 (POSTER PRESENTATION).

Kayihan C, Eyidoğan F, Öktem H, Yücel M. Effect of Cold Stress on the Expression and Activity of Barley Cu/ZnSOD. Responses of Plants to Environmental Stresses Conference, 12-18 May 2008, Elena, Bulgaria (POSTER PRESENTATION).

PRESENTATIONS IN A NATIONAL CONFERENCE

Ceyhun Kayihan, Su Naz Mutlu, Irmak Yılmaz (2019) Changes in Expression of Sulphate Transporter Genes Under Boron Toxicity in *Arabidopsis thaliana* (Arabidopsis thaliana;da Sülfat Taşıyıcısı Genlerin İfadelerinin Bor Toksisitesi Altında Değişimi), 20th National Biotechnology Congress (20. Ulusal Biyoteknoloji Kongresi Bildiri Kitabı), p. 84 Ankara, Turkey (ORAL PRESENTATION).

Ceyhun Kayihan, Berfin Doğa Koçkaya, Merve Gündoğdu, Mehmet Alp Güner (2019) Determination of Common Genes with Expression Levels Under Boron Toxicity in Plants by Using Microarray Data (Bitkilerde Bor Toksisitesi Altında İfadeleme Düzeyleri Değişen Ortak Genlerin Mikrodizin Verileri Kullanılarak Belirlenmesi), 20th National Biotechnology Congress (20. Ulusal Biyoteknoloji Kongresi Bildiri Kitabı) , p.89, Ankara, Turkey (POSTER PRESENTATION).

Doga Selin Kayihan, **Ceyhun Kayihan**, Yelda Ozden Ciftci.(2017) Changes at the Post-transcriptional Level in *Arabidopsis thaliana* Exposed to Boron Toxicity (Bor Toksisitesine Maruz Kalan *Arabidopsis thaliana*'da Post-transkripsiyonel Seviyede Meydana Gelen Değişimler), 19th National Biotechnology Congress (19. Ulusal Biyoteknoloji Kongresi Bildiri Kitabı), p.137, Eskişehir, Turkey (ORAL PRESENTATION).

Ceyhun Kayihan, M. Tufan Öz, Füsün Eyidoğan, Yasemin Ekmekçi, Meral Yücel, H. Avni Öktem. (2010) The Effect of Boron Treatments and Tarımbor (Agricultural Boron) on Photosystem II Activity of Wheat Plant (Bor Uygulamaları ve Tarımborun Buğday Bitkisinin Fotosistem II Aktivitesi Üzerine Etkisi). 20. National Biology Congress p. 316, Denizli, Turkey (POSTER PRESENTATION).

Ayten Eroğlu, Mehmet Cengiz Baloğlu, Gülsüm Kalemtaş, **Ceyhun Kayihan**, Ferhunde Aysin, Abdülhamit Battal, Hüseyin Avni Öktem, Meral Yücel. (2010) Cloning of Nac Transcription Factors to Monocot Expression Vector.(Nac Transkripsiyon Faktörlerinin Monokot Ekspresyon Vektörüne Klonlanması). 20. National Biology Congress, p.157, Antalya, Turkey (ORAL PRESENTATION).

Kayihan C, Ünsaldı E. Eyidoğan F, Öktem H, Yücel M. A. (2009) Biochemical Analysis of Combined Effects of Drought and Salt Stress on Two Different Barley (*Hordeum vulgare*) Leaves (Kuraklık ve Tuz Streslerinin Kombine Etkilerinin İki Farklı Arpa (*Hordeum vulgare*) Çeşidi Yaprığında Biyokimyasal Analizleri) 16th National Biotechnology Congress, p. 99, Full paper published in Proceedings and Poster Book, Antalya, Turkey (ORAL PRESENTATION).

M.C.Baloğlu, G.Kalemtaş, A.Eroğlu, A.Battal, F.Aysin, **C.Kayihan**, H.A.Öktem, M.Yücel, (2009) Isolation and Characterization of *NAC69-1* and *NAM-B2* Genes from Wheat (*NAC69-1* ve *NAM-B2* Genlerinin Buğdaydan İzolasyonu ve Karakterizasyonu) 16th National Biotechnology Congress, p.92-95, Antalya, Turkey (ORAL PRESENTATION).

F.Aysin, **C. Kayihan**, M.C.Baloğlu, G.Kalemtaş, A.Eroğlu, A.Battal, H.A.Oktem, M.Yucel, (2009) Generation of RNAi (RNA Interference) Vector for Wheat *TaNAC69-1* Gene (Buğday *TaNAC69-1* Geni için RNAi (RNA Müdahale) Vektörünün Oluşturulması). 16th National Biotechnology Congress, p.7, Antalya, Turkey (POSTER PRESENTATION).

Kayihan C, Eyidoğan F, Öktem H, Yücel M. Effects of Cold Stress on Barley (*Hordeum vulgare* L.) Superoxide Dismutase Isoenzyme Activities and Expression Level of *Cu/ZnSOD* Gene (Soğuk Stresinin Arpa (*Hordeum vulgare* L.) Süperoksit Dismutaz İzoenzim Aktiviteleri ve *Cu/ZnSOD* Geninin Ekspresyon Seviyesi Üzerine Etkisi) 15th National Biotechnology Congress, Full paper published in Proceedings and Poster Book p. 70-73, Antalya, Turkey, 2007 (ORAL PRESENTATION).

BOOK CHAPTER

Kayihan, C., Yılmaz, H., Özden Çiftçi, Y. (2023). NEXT-GENERATION SEQUENCING IN PLANT BREEDING: CHALLENGES AND POSSIBILITIES. In: Raina, A., Wani, M.R., Laskar, R.A., Tomlekova, N., Khan, S. (eds) Advanced Crop Improvement, Volume 1. Springer, Cham.

Aksoy, E., Yılmaz, H., Kayihan, C. (2022). THE REVOLUTION OF OMICS TECHNOLOGY IN PLANT SCIENCE. In: Prakash, C.S., Fiaz, S., Fahad, S. (eds) Principles and Practices of OMICS and Genome Editing for Crop Improvement. Springer, Cham.

Emre Aksoy and Ceyhan Kayihan, (2023). TRANSCRIPTION FACTORS AND TARGET GENES INVOLVED IN PLANT RESPONSES TO HIGH BORON ADAPTATION. In: Tariq Aftab, Marco Landi, Ioannis E. Papadakis, Fabrizio Araniti (Ed.) Boron in Plants: Exploring Cellular and Molecular Mechanisms. Academic Press.

C. Kayihan, Füsün Eyidoğan, (2019). OMICS IN OXIDATIVE STRESS TOLERANCE IN CROPS. In: Mirza Hasanuzzaman, Vasileios Fotopoulos, Kamrun Nahar and Masayuki Fujita (Ed.) Reactive Oxygen, Nitrogen and Sulfur Species in Plants: Production, Metabolism, Signaling and Defense Mechanisms. Wiley-Blackwell.

C. Kayihan, Doğa S. Kayihan (2019). (FİTOREMEDİASYON) PHYTOREMEDIATION. In: Yelda Ö. Çiftçi, Ahu A. Uncuoğlu (Ed.) Bitki Biyoteknolojisine Güncel Yaklaşımlar (Current Approaches in Plant Biotechnology), Palme, İstanbul, 2019.

TRANSLATED BOOK CHAPTER

Kayihan C, Yücel M, Yaprak Oğuzhan. “Biology The Core (3rd Edition)” Chapter: Canlı Bilimine Giriş, Nobel Akademik Yayıncılık (2022).

Kayihan C Yücel M,. “Biology The Core (1st Edition)” Chapter: Canlı Bilimine Giriş, Nobel Akademik Yayıncılık (2015).

THESIS

Kayihan, C. 2014. (PhD thesis) Physiological, biochemical and molecular analysis of wheat cultivars under boron treatments. Department of Biotechnology, Middle East Technical University.

Kayihan, C. 2007. (MSc thesis) Effect of cold stress on barley (*Hordeum vulgare* L.) superoxide dismutase isozyme activities and expression levels of Cu/ZnSOD gene. Department of Biotechnology, Middle East Technical University.

ONGOING PROJECTS

PROJECT NAME	FOUNDATION	BUDGET (TL)	DATE	DUTY	PROJECT CODE
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Detection of cell specific markers of drought stress by integration of single-nucleus RNA and ATAC sequencing analyses of <i>Arabidopsis thaliana</i> roots	TUBİTAK (COST 2515)	1403967	10.8.2023-10.4.2026	Manager	123Z251
Conservation of critically endangered endemic plant <i>Prangos denticulata</i> through in vitro propagation and its genetic characterization	Başkent University Scientific Research Project	80367	3.5.2023-3.5.2025	Researcher	E-91694447-604.01.01-228576
Transfection of CRISPR/Cas9 vector with Cell Penetrating Peptide (CPP) into tobacco (<i>Nicotiana benthamiana</i> L.) leaves and editing of <i>GSH2</i> gene	Başkent University Scientific Research Project	67055,19	1.12.2022-1.6.2024	Manager	E-91694447-604.01.01-183810
Investigation of the roles of amino acid transporter UMAMIT28 in iron uptake, translocation and seed loading in <i>Arabidopsis thaliana</i>	TUBİTAK (1001)	720000	15.11.2022-15.11.2025	Researcher	122Z428
Development of a second generation multi-epitope homologous virus-like particle (VLP)-based vaccine candidate against SARS-CoV-2 virus on a plant platform	TUBİTAK (3501)	466656,88	1.7.2022-1.7.2024	Researcher	122Z123

* TUBİTAK: THE SCIENTIFIC AND TECHNOLOGICAL RESEARCH COUNCIL OF TÜRKİYE

PROJECTS (UNDER REVIEW)

PROJECT NAME	FOUNDATION	BUDGET (TL)	DATE	DUTY	PROJECT CODE
Production of plant-based tetravalent vaccine against the most common oncogenic and wart-forming Human Papilloma Virus (HPV) types in Turkey	TUBİTAK (1001)	1250000	Under review	Manager	123Z452

COMPLETED PROJECTS

PROJECT NAME	FOUNDATION	BUDGET (TL)	DATE	DUTY	PROJECT CODE
Single-cell RNA sequencing in <i>Arabidopsis thaliana</i> root	TUBİTAK (3501)	405810	1.5.2021-1.8.2022	Manager	121Z029

exposed to boron toxicity at seed and seedling stage					
Determination of transcriptomics and proteomics responses in <i>Arabidopsis thaliana</i> with boron tolerance acquisition by salt pre-treatment	Hacettepe University Scientific Research Project	215.827,672	16.11.2020-16.11.2022	Researcher	18859
Determination of expression levels of genes related to sulphate transporters and protein degradation mechanism under boron toxicity in <i>Arabidopsis thaliana</i> as a model plant	Başkent University Scientific Research Project	21.725,64	1.7.2020-1.7.2021	Manager	BA20/FM25
Investigation of influences of plant growth promoting bacteria isolated from in vitro cultures of <i>Photinia x fraseri</i> to its host at physiological, biochemical and molecular level	TUBİTAK (1001)	360.000	2017-2019	Researcher	KBAG-117R002
The effect of molecular interactions between "stringent response", "polyphosphate" and "protein degradation" metabolisms on <i>Streptomyces coelicolor</i> antibiotic production	TUBİTAK (1001)	360.000	15.04.2016-17.10.2016	Post-Doc	KBAG-215Z093
Development of Abiotic Stress Resistant Transgenic Wheat Cultivars using NAC Type Transcription Factors and Investigation of Gene Expression Profiles of Transgenics under Abiotic Stresses using Microarrays	TUBİTAK (1001)	182.355	01.03.2009-01.03.2011	Scholarship PhD student	TOVAG-108O786
Investigation of Gene Expression Profiles of Wheat under Boron Stress and Determination of Effects of Tarimbor on Responses to Boron Stress at Molecular Level	National Boron Research Institute	123.800	10-08-2009-10-02-2011	Researcher	BOREN- 2009-Ç0217
Effect of Cold Stress on Antioxidant Mechanisms of Barley at Molecular Level	TUBİTAK	28.000	01.09.2005-01.09.2007	Researcher	TOVAG-105O152

COURSES GIVEN AT UNDERGRADUATE & GRADUATE LEVELS

Academic Terms and Levels		Courses
2016-2017 Spring	Undergraduate	Basic Biotechnology
2017-2018 Fall	Undergraduate	Molecular Biology
	Undergraduate	General Biology
2017-2018 Spring	Undergraduate	Molecular Genetics
	Undergraduate	Microbiology
2018-2019 Fall	Undergraduate	Molecular Biology

	Undergraduate	Plant Biology
2018-2019 Spring	Undergraduate	Molecular Genetics
	Undergraduate	Genetic Engineering
	Undergraduate	Proteomics and Genomics
2019-2020 Fall	Undergraduate	Molecular Biology
	Undergraduate	Molecular Biology (English)
	Undergraduate	Molecular Biology Laboratory (English)
2019-2020 Spring	Undergraduate	Molecular Genetics
	Undergraduate	Molecular Genetics (English)
	Undergraduate	Genetic Engineering
	Undergraduate	Proteomics and Genomics
2020-2021 Fall	Undergraduate	Molecular Biology
	Undergraduate	Molecular Biology (English)
	Undergraduate	Introduction to Omics Technologies
	Undergraduate	Tissue Culture
	Graduate	Next Generation Sequence Analysis (English)
2020-2021 Spring	Undergraduate	Molecular Genetics
	Undergraduate	Molecular Genetics (English)
	Undergraduate	Genetic Engineering
	Undergraduate	Genetic Engineering (English)
2021-2022 Fall	Undergraduate	Molecular Biology
	Undergraduate	Molecular Biology (English)
	Undergraduate	Introduction to Omics Technologies
	Graduate	Next Generation Sequence Analysis (English)
2021-2022 Spring	Undergraduate	Molecular Genetics
	Undergraduate	Molecular Genetics (English)
	Undergraduate	Genetic Engineering
	Undergraduate	Genetic Engineering (English)
2022-2023 Fall	Undergraduate	Molecular Biology
	Undergraduate	Molecular Biology (English)
	Graduate	Transgenic Plant Technology (English)
2022-2023 Spring	Undergraduate	Genetic Engineering
	Undergraduate	Genetic Engineering (English)
	Graduate	Next Generation Sequence Analysis (English)

ATTENDING TRAINING COURSES

- Training course “Gel Beads-in-emulsion (GEM) preparation and library construction for single-cell RNA sequencing in *Arabidopsis thaliana* root, 2021, Başkent University, Turkey
- Training course “Basic bioinformatics concepts, databases and tools”, 2011, VIB, Belgium,
- Training course “Protein Structure Analysis”, 2011, VIB, Belgium,
- Training course “Basics of Next Generation Sequencing Data Analysis, 2011, VIB, Belgium,
- Training course “Analysis of public microarray data using Genevestigator” 2011, VIB, Belgium,
- Microarray Training and Data Analysis Course, METU, Central Laboratory, Molecular Biology and Biotechnology R&D Center, 2009, Ankara, Turkey.

AWARDS

Kayıhan C, Second Place Prize of BIOTECHNOLOGY ENTREPRENEURSHIP PROJECT COMPETITION, Başkent University Ekin Pre-Incubation Center, 2021.

(Secondary PI of Middle East Technical University High School) Project Title: Bacterial Improvement of Ethanol, Silver Medal, International Genetically Engineered Machine competition, 2018, Massachusetts Institute of Technology, USA.

MEMBERSHIP

Working Group Member, (COST ACTION) CA18111 - Genome editing in plants - a technology with transformative potential (PlantEd)

Working Group Member, (COST ACTION) CA19125 - EPIgenetic mechanisms of Crop Adaptation To Climate cHange (EPI-CATCH)

TV PROGRAMME

https://www.youtube.com/watch?v=h_6i99Fg30c&t=1s (Channel B in Turkey)

<https://www.youtube.com/watch?v=KgJabo8E79w> (Channel B in Turkey)

<https://www.youtube.com/watch?v=fF83fBEmynw> (Channel B in Turkey)

<https://www.youtube.com/watch?v=garotsWlmg4> (Channel B in Turkey)

<https://www.youtube.com/watch?v=uE-jOppLga8&t=5s> (Channel B in Turkey)