

Assoc. Prof. MEHMET AYDIN AKBUDAK

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: B-9064-2016

ScopusID: 8856341800

Yoksis Researcher ID: 46012

Education Information

Post Doctorate, Institute Of Molecular Genetics Of The Cas, Prague, Transgenic Models Of Diseases, Czech Republic 2013 - 2014

Post Doctorate, University of Arkansas at Fayetteville, Bitki Ve Cevre Bilimleri, Bitki Biyoteknolojisi, United States Of America 2010 - 2012

Doctorate, University of Arkansas at Fayetteville, Hücre Ve Moleküler Biyoloji , Bitki Biyoteknolojisi, United States Of America 2006 - 2010

Postgraduate, Selcuk University, Fen Bilimleri Enstitüsü, Tarla Bitkileri, Turkey 1999 - 2002

Undergraduate, Selcuk University, Ziraat Fakültesi, Tarla Bitkileri, Turkey 1996 - 1999

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Applications of site-specific recombination systems in transgene expression and marker gene removal, University of Arkansas at Fayetteville, Graduate School, Cell And Molecular Biology, 2010

Research Areas

Life Sciences, Biotechnology, Plant Biotechnology, Molecular Biology and Genetics, Plant Molecular Genetics, Genetic Engineering, Natural Sciences

Academic Titles / Tasks

Associate Professor, Akdeniz University, Faculty of Agriculture, Department of Agricultural Biotechnology, 2019 - Continues

Assistant Professor, Akdeniz University, Faculty of Agriculture, Department of Agricultural Biotechnology, 2015 - 2019

Assistant Professor, Necmettin Erbakan University, Faculty Of Science, Moleküler Biyoloji Ve Genetik, 2012 - 2015

Research Assistant PhD, University of Arkansas at Fayetteville, Dale Bumpers College Of Agriculture, Crop, Soil And Environmental Sciences, 2010 - 2012

Research Assistant, University of Arkansas at Fayetteville, Graduate School, Cell & Molecular Biology, 2006 - 2010

Courses

Doctorate

Yeni Nesil Genom Düzenleme Teknikleri ve Bitki Islahında Kullanımı, Doctorate, 2021 - 2022

Advanced Plant Biotechnology, Doctorate, 2020 - 2021

Undergraduate

Recombinant DNA Technologies, Undergraduate, 2020 - 2021

Introduction to Bioinformatics, Undergraduate, 2021 - 2022

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Characterization of ZmSnRK1 genes and their response to aphid feeding, drought and cold stress**
AKBUDAK M. A., Yildiz K., ÇETİN D., Filiz E., YÜKSELBABA U., Srivastava V.
Genetic Resources and Crop Evolution, vol.72, no.1, pp.735-749, 2025 (SCI-Expanded)
- II. **GpEF1A: a novel lysine methyltransferase gene from Gypsophila perfoliata L. involved in boron homeostasis**
AKBUDAK M. A., Cirik N., Erdeger S., Filiz E., Dogu S., BOR M.
Plant Biology, vol.26, no.5, pp.727-734, 2024 (SCI-Expanded)
- III. **Genome-wide exploration and analysis of plant stress-responsive CAMTA transcription factor genes in Brachypodium distachyon and their expression patterns under environmental challenges**
AKBUDAK M. A., ÇETİN D., Filiz E., Srivastava V.
South African Journal of Botany, vol.166, pp.208-217, 2024 (SCI-Expanded)
- IV. **A genome sequence resource for the European chestnut (Castanea sativa Mill.) and the development of genic microsatellite markers**
Uncu A. O., ÇETİN D., Srivastava V., Uncu A. T., AKBUDAK M. A.
Genetic Resources and Crop Evolution, 2024 (SCI-Expanded)
- V. **Genome-Wide Identification, Characterization and Expression Profiling of Potato (Solanum tuberosum) Frataxin (FH) Gene**
Kurt F., Filiz E., Yildiz K., AKBUDAK M. A.
Genes, vol.14, no.2, 2023 (SCI-Expanded)
- VI. **Mitochondrial iron transporter (MIT) gene in potato (Solanum tuberosum): comparative bioinformatics, physiological and expression analyses in response to drought and salinity**
Kurt F., Kurt B., Filiz E., Yildiz K., AKBUDAK M. A.
BioMetals, vol.35, no.5, pp.875-887, 2022 (SCI-Expanded)
- VII. **Genes involved in mRNA surveillance are induced in Brachypodium distachyon under cadmium toxicity**
AKSOY E., Uncu A. T., Filiz E., ORMAN Ş., ÇETİN D., AKBUDAK M. A.
MOLECULAR BIOLOGY REPORTS, vol.49, no.6, pp.5303-5313, 2022 (SCI-Expanded)
- VIII. **Genome-wide identification and characterization of high-affinity nitrate transporter 2 (NRT2) gene family in tomato (Solanum lycopersicum) and their transcriptional responses to drought and salinity stresses**
AKBUDAK M. A., Filiz E., ÇETİN D.
Journal of Plant Physiology, vol.272, 2022 (SCI-Expanded)
- IX. **Genome-wide investigation of proline transporter (ProT) gene family in tomato: Bioinformatics and expression analyses in response to drought stress**

AKBUDAK M. A., FİLİZ E.

PLANT PHYSIOLOGY AND BIOCHEMISTRY, vol.157, pp.13-22, 2020 (SCI-Expanded)

- X. **Pathogenesis related protein-1 (PR-1) genes in tomato (*Solanum lycopersicum* L.): Bioinformatics analyses and expression profiles in response to drought stress**
AKBUDAK M. A., YILDIZ S., Filiz E.
GENOMICS, vol.112, no.6, pp.4089-4099, 2020 (SCI-Expanded)
- XI. **Novel TALEN-generated mCitrine-FANCD2 fusion reporter mouse model for in vivo research of DNA damage response**
Sabol M., Akbudak M. A., Fricova D., Beck I., Sedlacek R.
DNA REPAIR, vol.94, 2020 (SCI-Expanded)
- XII. **Ammonium transporter 1 (AMT1) gene family in tomato (*Solanum lycopersicum* L.): Bioinformatics, physiological and expression analyses under drought and salt stresses**
Filiz E., AKBUDAK M. A.
GENOMICS, vol.112, no.5, pp.3773-3782, 2020 (SCI-Expanded)
- XIII. **Investigation of PIC1 (permease in chloroplasts 1) gene's role in iron homeostasis: bioinformatics and expression analyses in tomato and sorghum**
Filiz E., Aydin Akbudak M. A.
BIOMETALS, vol.33, no.1, pp.29-44, 2020 (SCI-Expanded)
- XIV. **Whirly (Why) transcription factors in tomato (*Solanum lycopersicum* L.): genome-wide identification and transcriptional profiling under drought and salt stresses**
AKBUDAK M. A., Filiz E.
MOLECULAR BIOLOGY REPORTS, vol.46, no.4, pp.4139-4150, 2019 (SCI-Expanded)
- XV. **Genome-wide analyses of ATP sulfurylase (ATPS) genes in higher plants and expression profiles in sorghum (*Sorghum bicolor*) under cadmium and salinity stresses**
AKBUDAK M. A., Filiz E.
GENOMICS, vol.111, no.4, pp.579-589, 2019 (SCI-Expanded)
- XVI. **Aromatic amino acids biosynthesis genes identification and expression analysis under salt and drought stresses in *Solanum lycopersicum* L.**
Filiz E., ÇETİN D., AKBUDAK M. A.
SCIENTIA HORTICULTURAE, vol.250, pp.127-137, 2019 (SCI-Expanded)
- XVII. **Identification of O-acetylserine(thiol)lyase (OASTL) genes in sorghum (*Sorghum bicolor*) and gene expression analysis under cadmium stress**
AKBUDAK M. A., Filiz E., UYLAŞ S.
MOLECULAR BIOLOGY REPORTS, vol.46, no.1, pp.343-354, 2019 (SCI-Expanded)
- XVIII. **Estimation of Nuclear DNA Content and Determination of Relationship Between Altitude and Genome Size of USDA Turkish Oat (*Avena* spp.) Collection**
AKBUDAK M. A., Sakiroglu M., Tuna M.
GESUNDE PFLANZEN, vol.70, no.4, pp.171-178, 2018 (SCI-Expanded)
- XIX. **DREB2 (dehydration-responsive element-binding protein 2) type transcription factor in sorghum (*Sorghum bicolor*): genome-wide identification, characterization and expression profiles under cadmium and salt stresses**
AKBUDAK M. A., Filiz E., KONTBAY K.
3 BIOTECH, vol.8, no.10, 2018 (SCI-Expanded)
- XX. **Genome-Wide Identification and Expression Profiling of Ascorbate Peroxidase (APX) and Glutathione Peroxidase (GPX) Genes Under Drought Stress in Sorghum (*Sorghum bicolor* L.)**
AKBUDAK M. A., Filiz E., Vatansever R., KONTBAY K.
JOURNAL OF PLANT GROWTH REGULATION, vol.37, no.3, pp.925-936, 2018 (SCI-Expanded)
- XXI. **Genome-wide identification and cadmium induced expression profiling of sulfate transporter (SULTR) genes in sorghum (*Sorghum bicolor* L.)**
AKBUDAK M. A., Filiz E., KONTBAY K.
BIOMETALS, vol.31, no.1, pp.91-105, 2018 (SCI-Expanded)

- XXII. **EVALUATING GENOTYPIC VARIATIONS AMONG DROUGHT-INDUCED SORGHUM CULTIVARS FOR ASCORBATE PEROXIDASES (APXS)**
AKBUDAK M. A.
FRESENIUS ENVIRONMENTAL BULLETIN, vol.27, no.12, pp.8560-8567, 2018 (SCI-Expanded)
- XXIII. **Effect of gene order in DNA constructs on gene expression upon integration into plant genome**
Akbuluk M. A., Srivastava V.
3 BIOTECH, vol.7, 2017 (SCI-Expanded)
- XXIV. **Down-regulation of hydroxycinnamoyl CoA: shikimate hydroxycinnamoyl transferase, cinnamoyl CoA reductase, and cinnamyl alcohol dehydrogenase leads to lignin reduction in rice (*Oryza sativa* L. ssp *japonica* cv. *Nipponbare*)**
Ponniiah S. K., Shang Z., Akbudak M. A., Srivastava V., Manoharan M.
PLANT BIOTECHNOLOGY REPORTS, vol.11, no.1, pp.17-27, 2017 (SCI-Expanded)
- XXV. **Strong activity of FLPe recombinase in rice plants does not correlate with the transmission of the recombined locus to the progeny**
Nguyen L. D., Underwood J. L., Nandy S., Akbudak M. A., Srivastava V.
PLANT BIOTECHNOLOGY REPORTS, vol.8, no.6, pp.455-462, 2014 (SCI-Expanded)
- XXVI. **Suppression of Arabidopsis genes by terminator-less transgene constructs**
Akbudak M. A., Nicholson S. J., Srivastava V.
PLANT BIOTECHNOLOGY REPORTS, vol.7, no.4, pp.415-424, 2013 (SCI-Expanded)
- XXVII. **Improved FLP Recombinase, FLPe, Efficiently Removes Marker Gene from Transgene Locus Developed by Cre-lox Mediated Site-Specific Gene Integration in Rice**
AKBUDAK M. A., Srivastava V.
MOLECULAR BIOTECHNOLOGY, vol.49, no.1, pp.82-89, 2011 (SCI-Expanded)
- XXVIII. **Dosage-Dependent Gene Expression from Direct Repeat Locus in Rice Developed by Site-Specific Gene Integration**
Akbudak M. A., More A. B., Nandy S., Srivastava V.
MOLECULAR BIOTECHNOLOGY, vol.45, no.1, pp.15-23, 2010 (SCI-Expanded)

Articles Published in Other Journals

- I. **Assessment of the Developmental Profiles of ZHY3 and W303 Yeast Strains in Zinc-Modified Media**
ZHY3 ve W303 Maya Irklarının Çinko Zenginleştirilmiş Ortamdaki Gelişim Profillerinin Değerlendirilmesi
Yuksel B., AKBUDAK M. A.
Adiyaman University Journal of Science, vol.14, no.2, pp.50-58, 2024 (Scopus)
- II. **Identification and Functional Characterization of Glutamate Decarboxylase (GAD) Genes in Potato (*Solanum tuberosum* L.) and Analysis of Their Expression under Drought and Salt Stress Conditions**
AKBUDAK M. A.
Adiyaman Üniversitesi Fen Bilimleri Dergisi, vol.14, pp.15-28, 2024 (Scopus)
- III. **Cold stress impairs nitrogen uptake and enhances translocation through AMT1 and NRT2 gene regulation in tomato**
ÇETİN D., AKBUDAK M. A.
Mediterranean Agricultural Sciences, vol.37, no.3, 2024 (Peer-Reviewed Journal)
- IV. **Overexpression of the tomato pathogenesis-related gene SIPR-1.9 confers increased tolerance to salt stress in *Arabidopsis thaliana***
YILDIZ K., AKBUDAK M. A.
Mediterranean Agricultural Sciences, 2024 (Peer-Reviewed Journal)
- V. **Yeast Functional Screen to Determine cDNAs of European Alkali Grass (*Puccinellia distans*) Conferring Selenium (Se) Toxicity**
Budak K., Akbudak M. A.

Journal of Agricultural Sciences, vol.6, no.4, pp.698-707, 2022 (Peer-Reviewed Journal)

- VI. **Antiproliferative Effect of Epilobium parviflorum Extracts on Colorectal Cancer Cell Line HT-29**
AKBUDAK M. A., SUT T., ERUYGUR N., AKINCI E.
Romanian Biotechnological Letters, 2021 (Peer-Reviewed Journal)
- VII. **Sodyum azid (NaN₃) ile muamele edilen arpa mutantlarının genetik çeşitliliğinin ISSR markörler ile belirlenmesi**
GÜNGÖR H., AKBUDAK M. A., FILİZ E., YÜCE İ., DUMLUPINAR Z.
Derim, vol.37, no.1, pp.27-32, 2020 (Peer-Reviewed Journal)
- VIII. **Expression patterns of ROS responsive genes on boron-stressed canola (Brassica napus ssp. oleifera L.) following selenium treatment**
ÖZEN M. O., KAYA S., UYLAŞ S., Durmus C., ARI E., AKBUDAK M. A.
Mediterranean Agricultural Sciences, vol.32, no.1, pp.35-41, 2019 (Peer-Reviewed Journal)
- IX. **Sorgum (Sorghum bicolor L.)' da Sülfat Taşıyıcı (SULTR) Genlerin Kuraklık Stresi Altında İfadelerinin Belirlenmesi**
AKBUDAK M. A.
Mediterranean Agricultural Sciences, vol.31, no.1, 2018 (Peer-Reviewed Journal)
- X. **Farklı türlere ait yulaf aksesyonlarının genom büyüklüklerinin belirlenmesi ve ploidi seviyelerinin tespiti**
AKBUDAK M. A., PAKSOY A., TUNA M.
Mediterranean Agricultural Sciences, vol.31, pp.49-54, 2018 (Peer-Reviewed Journal)
- XI. **Yeni Nesil Genom Düzenleme Teknikleri: ZFN, TALEN, CRISPR'lar ve Bitkilerde Kullanımı**
AKBUDAK M. A., KONTBAY K.
Tarla Bitkileri Merkez Araştırma Enstitüsü Dergisi, vol.26, no.1, pp.111-126, 2017 (Peer-Reviewed Journal)

Papers Published in Refereed Scientific Meetings

- I. **EXPRESSION PROFILES OF TOMATO NITRATE TRANSPORTER 2 (NRT2) GENES UNDER ABIOTIC STRESS CONDITIONS**
Cetin D., Filiz E., Akbudak M. A.
III. INTERNATIONAL CONFERENCE ON GLOBAL PRACTISE OF MULTIDISCIPLINARY SCIENTIFIC STUDIES, Girne, Cyprus (Kktc), 15 - 17 November 2022, pp.71
- II. **Bioinformatics and Expression Analyses of ATP Sulfurylase (ATPS) Gene in Sorghum (Sorghum bicolor) Under Cadmium And Salinity Stresses**
FILİZ E., AKBUDAK M. A.
INTERNATIONAL EURASIAN CONFERENCE ON BIOLOGICAL AND CHEMICAL SCIENCES, 26 - 27 April 2018
- III. **The Comparative Analyses of Tryptophan Synthase (TS) Genes in Tomato (Solanum lycopersicum): Bioinformatics Approaches**
FILİZ E., AKBUDAK M. A.
INTERNATIONAL EURASIAN CONFERENCE ON BIOLOGICAL AND CHEMICAL SCIENCES, 26 - 27 April 2018
- IV. **Biyoyakıt Üretimi İçin Terminatörsüz Vektörler Kullanılarak Çeltik Saplarında Lignin Miktarının Düşürülmesi**
AKBUDAK M. A., KONTBAY K.
19. Ulusal Biyoteknoloji Kongresi, Turkey, 1 - 03 December 2017
- V. **Reduction of Lignin Content in Rice Straw for Biofuel Production**
PONNIAH S. K., ZENHUA S., AKBUDAK M. A., Srivastava V., MUTHUSAMY M.
Eurobiotech, 11 - 14 September 2017
- VI. **Evaluation of FLP Recombinase FLPwt and its variants FLPe and FLPo to obtain stable marker free transgenic rice**
AKBUDAK M. A., NGUYEN L., VIBHA S.
Green Biotechnology, 21 - 23 September 2015

VII. **Suppression of Arabidopsis Genes by Terminator-less Transgene Constructs**

AKBUDAK M. A., Nicholson S., Srivastava V.

Long Regulatory RNAs Conference, Pultusk, Poland, 13 - 18 October 2014

Supported Projects

Akbudak M. A., TUBITAK Project, TUBITAK Proje No: 221Z179, 2022 - 2023

Akbudak M. A., TUBITAK Project, TUBITAK Proje No: 215Z086, 2016 - 2021

Akbudak M. A., TUBITAK Project, TUBITAK 3501, 2015 - 2021

Activities in Scientific Journals

Mediterranean Agricultural Sciences (Akdeniz Üniversitesi Ziraat Fakültesi Dergisi), Scientific Committee Membership, 2018 - Continues

Turkish Journal Of Biology, Scientific Committee Membership, 2012 - 2015

Peer Reviews in Scientific Publications

ROMANIAN BIOTECHNOLOGICAL LETTERS, SCI Journal, October 2021

3 BIOTECH, SCI Journal, September 2021

The Romanian Biotechnological Letters, SCI Journal, August 2021

International Journal of Life Sciences and Biotechnology, Other Indexed Journal, April 2021

Turkish Journal of Botany, SCI Journal, April 2021

Turkish Journal of Agriculture and Forestry, SCI Journal, March 2021

Plant Cell Reports, SCI Journal, February 2021

International Journal of Genomics, SCI Journal, February 2021

Molecular Biotechnology, SCI Journal, February 2021

International Journal of Genomics, SCI Journal, January 2021

Potato Research, SCI Journal, January 2021

BMC Genomics, SCI Journal, December 2020

Natural Product Research , SCI Journal, November 2020

Biotech Studies, Other Indexed Journal, October 2020

Biologia Futura, SCI Journal, October 2020

Conservation Physiology, SCI Journal, August 2020

Gene Reports, SCI Journal, August 2020

3 Biotech, SCI Journal, July 2020

Turkish Journal of Botany, SCI Journal, May 2020

Preparative Biochemistry & Biotechnology, SCI Journal, March 2020

Turkish Journal of Botany, SCI Journal, March 2020

Turkish Journal of Botany, SCI Journal, March 2020

Journal of the Science of Food and Agriculture, SCI Journal, February 2020

Plant Genetic Resources, SCI Journal, January 2020

3 Biotech, SCI Journal, December 2019

Scientia Horticulturae, SCI Journal, October 2019

Functional & Integrative Genomics, SCI Journal, August 2019

Scientific Reports, SCI Journal, July 2019

Scientia Horticulturae, SCI Journal, March 2019

Turkish Journal of Botany, SCI Journal, January 2019

Scientific Project Refereeing

TUBITAK Project, 1002 - Quick Support Program, October 2021

Project Supported by Higher Education Institutions, BAP Research Project, October 2021

July 2021

May 2021

TUBITAK Project, May 2021

Project Supported by Higher Education Institutions, May 2021

TUBITAK Project, March 2021

Project Supported by Higher Education Institutions, February 2021

December 2020

November 2020

TUBITAK Project, October 2020

TUBITAK Project, September 2020

TUBITAK Project, July 2020

TUBITAK Project, February 2020

Metrics

Publication: 47

Citation (WoS): 598

Citation (Scopus): 319

H-Index (WoS): 13

H-Index (Scopus): 11

Congress and Symposium Activities

4th iPLANTA Conference, Attendee, Athens, Greece, 2020

3. Uluslararası Mardin Artuklu Bilimsel Arařtırmalar Kongresi, Attendee, Mardin, Turkey, 2020

Scholarships

Arařtırma Bursu, Official Institutions of Foreign Countries, 2013 - Continues

Üçüncülük Ödülü, Plant Biotechnology Post-Doc Competition, Official Institutions of Foreign Countries, 2012 - Continues

Birincilik Ödülü, Plant Biotechnology Post-Doc Competition, Official Institutions of Foreign Countries, 2011 - Continues

Student Fellowship, Official Institutions of Foreign Countries, 2010 - Continues

Ph.D. Research Poster Presentation Competition, Official Institutions of Foreign Countries, 2009 - Continues

Spooner Scholar Award, Official Institutions of Foreign Countries, 2008 - Continues

Faculty/Student Exchange Program Grant Award, Official Institutions of Foreign Countries, 2008 - Continues

Doktora Bursu, Other International Organizations, 2006 - Continues

Travel and Participation Award, Other International Organizations, 2006 - Continues

Travel and Participation Award, Other International Organizations, 2002 - Continues