

Assoc. Prof. ERKAN KIRIŞ

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: AAZ-6719-2020

ScopusID: 23008810500

Yoksis Researcher ID: 233544

Education Information

Doctorate, University of California, Santa Barbara, Molecular, Cellular And Developmental Biology , United States Of America 2003 - 2008

Postgraduate, Mugla Sitki Kocman University, Faculty Of Arts And Sciences, Department Of Biology, Turkey 2000 - 2003

Undergraduate, Selcuk University, Ahmet Keleşođlu Faculty Of Education, Biyoloji Öğretmenliği Pr., Turkey 1996 - 2000

Foreign Languages

English, C2 Mastery

Dissertations

Doctorate, Mechanistic effects of pseudophosphorylation of 3-repeat and 4-repeat tau upon normal and pathological tau action, University Of California, Santa Barbara, Molecular, Cellular And Developmental Biology , 2008

Postgraduate, Akçay (Muğla-Denizli)'in fiziko-kimyasal bentik makroinvertebrata yönünden incelenmesi, Muğla Sitki Koçman Üniversitesi, 2003

Research Areas

Life Sciences, Natural Sciences

Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Biology, 2022 - Continues

Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Biology, 2018 - 2022

Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Biology, 2017 - 2018

Expert, National Cancer Institute At Frederick, National Institutes Of Health, National Cancer Institute At Frederick, Mouse Cancer Genetics Program, 2009 - 2017

Research Assistant, University of California, Santa Barbara, College Of Letters And Science, Neuroscience Research Institute And Molecular, Cellular And Developmental Biology, 2008 - 2009

Research Assistant, University of California, Santa Barbara, College Of Letters And Science, Molecular, Cellular And Developmental Biology , 2003 - 2008

Research Assistant, Mugla Sitki Kocman University, Faculty Of Arts And Sciences, Department Of Biology, 2000 - 2003

Academic and Administrative Experience

Deputy Head of Department, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Biology, 2022 - 2025

Courses

MOLECULAR BIOLOGY OF NEURODEGENERATIVE DISEASES, Postgraduate, 2018 - 2019

Stem Cells and Neurobiology, Doctorate, 2019 - 2020

Designed Lessons

Kiriş E., STEM CELLS AND NEUROBIOLOGY, Doctorate, 2019 - 2020

Kiriş E., MOLECULAR BIOLOGY OF NEURODEGENERATIVE DISEASES, Doctorate, 2018 - 2019

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Tirbanibulin (KX2-391) analog KX2-361 inhibits botulinum neurotoxin serotype A mediated SNAP-25 cleavage in pre- and post-intoxication models in cells**
Koc D., Ibis K., Besarat P., Banoğlu E., Kiriş E.
DRUG DEVELOPMENT RESEARCH, vol.85, no.6, 2024 (SCI-Expanded)
- II. **Generation and characterization of human induced pluripotent stem cell line METUi002-A from a patient with primary familial brain calcification (PFBC) carrying a heterozygous mutation (c.687dupT (p.Val230CysfsTer28)) in the SLC20A2 gene.**
Begentas O. C., Koc D., Sendur N. K., Besarat P., Ezgin S., Temel M., Bora H. A. T., Kiriş E.
Stem cell research, vol.72, pp.103226, 2023 (SCI-Expanded)
- III. **TrkA-cholinergic signaling modulates fear encoding and extinction learning in PTSD-like behavior.**
Yanpallewar S., Tomassoni-Ardori F., Palko M. E., Hong Z., Kiriş E., Becker J., Fulgenzi G., Tessarollo L.
Translational psychiatry, vol.12, no.1, pp.111, 2022 (SCI-Expanded)
- IV. **Screening of a Focused Ubiquitin-Proteasome Pathway Inhibitor Library Identifies Small Molecules as Novel Modulators of Botulinum Neurotoxin Type A Toxicity.**
Sen E., Kota K. P., Panchal R. G., Bavari S., Kiriş E.
Frontiers in pharmacology, vol.12, pp.763950, 2021 (SCI-Expanded)
- V. **Generation and characterization of human induced pluripotent stem cell line METUi001-A from a 25-year-old male patient with relapsing-remitting multiple sclerosis**
Begentaş O. C., Koc D., Yurtogullari S., Temel M., Akcali K. C., Demirkaya S., Kiriş E.
Stem Cell Research, vol.53, 2021 (SCI-Expanded)
- VI. **New Steroidal 4-Aminoquinolines Antagonize Botulinum Neurotoxin Serotype A in Mouse Embryonic Stem Cell Derived Motor Neurons in Postintoxication Model.**
Konstantinović J., Kiriş E., Kota K., Kugelman-Tonos J., Videnović M., Cazares L., Terzić J., Verbić T., Andjelković B., Duplantier A., et al.
Journal of medicinal chemistry, vol.61, pp.1595-1608, 2018 (SCI-Expanded)

- VII. **Deubiquitinating enzyme VCIP135 dictates the duration of botulinum neurotoxin type A intoxication.**
Tsai Y., Kotiya A., Kiris E., Yang M., Bavari S., Tessarollo L., Oyler G., Weissman A.
Proceedings of the National Academy of Sciences of the United States of America, vol.114, 2017 (SCI-Expanded)
- VIII. **Paclitaxel suppresses Tau-mediated microtubule bundling in a concentration-dependent manner.**
Choi M., Chung P., Song C., Miller H., Kiris E., Li Y., Wilson L., Feinstein S., Safinya C.
Biochimica et biophysica acta. General subjects, vol.1861, pp.3456-3463, 2017 (SCI-Expanded)
- IX. **RanBPM (RanBP9) regulates mouse c-Kit receptor level and is essential for normal development of bone marrow progenitor cells.**
Puverel S., Kiris E., Singh S., Klarmann K., Coppola V., Keller J., Tessarollo L.
Oncotarget, vol.7, pp.85109-85123, 2016 (SCI-Expanded)
- X. **Phosphatase Inhibitors Function as Novel, Broad Spectrum Botulinum Neurotoxin Antagonists in Mouse and Human Embryonic Stem Cell-Derived Motor Neuron-Based Assays.**
Kiris E., Nuss J., Stanford S., Wanner L., Cazares L., Maestre M., Du H., Gomba G., Burnett J., Gussio R., et al.
PloS one, vol.10, 2015 (SCI-Expanded)
- XI. **SRC family kinase inhibitors antagonize the toxicity of multiple serotypes of botulinum neurotoxin in human embryonic stem cell-derived motor neurons.**
Kiris E., Burnett J., Nuss J., Wanner L., Peyser B., Du H., Gomba G., Kota K., Panchal R., Gussio R., et al.
Neurotoxicity research, vol.27, pp.384-98, 2015 (SCI-Expanded)
- XII. **A high content imaging assay for identification of Botulinum neurotoxin inhibitors.**
Kota K., Soloveva V., Wanner L., Gomba G., Kiris E., Panchal R., Kane C., Bavari S.
Journal of visualized experiments : JoVE, 2014 (SCI-Expanded)
- XIII. **TrkA in vivo function is negatively regulated by ubiquitination.**
Kiris E., Wang T., Yanpallewar S., Dorsey S., Becker J., Bavari S., Palko M., Coppola V., Tessarollo L.
The Journal of neuroscience : the official journal of the Society for Neuroscience, vol.34, pp.4090-8, 2014 (SCI-Expanded)
- XIV. **Recent developments in cell-based assays and stem cell technologies for botulinum neurotoxin research and drug discovery.**
Kiris E., Kota K., Burnett J., Soloveva V., Kane C., Bavari S.
Expert review of molecular diagnostics, vol.14, pp.153-68, 2014 (SCI-Expanded)
- XV. **Recent advances in botulinum neurotoxin inhibitor development.**
Kiris E., Burnett J., Kane C., Bavari S.
Current topics in medicinal chemistry, vol.14, pp.2044-61, 2014 (SCI-Expanded)
- XVI. **Embryonic stem cell-derived motoneurons provide a highly sensitive cell culture model for botulinum neurotoxin studies, with implications for high-throughput drug discovery.**
Kiris E., Nuss J., Burnett J., Kota K., Koh D., Wanner L., Torres-Melendez E., Gussio R., Tessarollo L., Bavari S.
Stem cell research, vol.6, pp.195-205, 2011 (SCI-Expanded)
- XVII. **Combinatorial Tau pseudophosphorylation: markedly different regulatory effects on microtubule assembly and dynamic instability than the sum of the individual parts.**
Kiris E., Ventimiglia D., Sargin M., Gaylord M., Altinok A., Rose K., Manjunath B., Jordan M., Wilson L., Feinstein S.
The Journal of biological chemistry, vol.286, pp.14257-70, 2011 (SCI-Expanded)
- XVIII. **Human microtubule-associated-protein tau regulates the number of protofilaments in microtubules: a synchrotron x-ray scattering study.**
Choi M., Raviv U., Miller H., Gaylord M., Kiris E., Ventimiglia D., Needleman D., Kim M., Wilson L., Feinstein S., et al.
Biophysical journal, vol.97, pp.519-27, 2009 (SCI-Expanded)
- XIX. **Model based dynamics analysis in live cell microtubule images.**
Altinok A., Kiris E., Peck A., Feinstein S., Wilson L., Manjunath B., Rose K.
BMC cell biology, 2007 (SCI-Expanded)

Books

- I. **Astrocytes in Primary Familial Brain Calcification (PFBC): Emphasis on the Importance of Induced Pluripotent Stem Cell-Derived Human Astrocyte Models**
Kavaklı E., Gül N., BEGENTAŞ O. C., KİRİŞ E.
in: *Advances in Experimental Medicine and Biology*, Turksen Kursad, Editor, Springer, Cham, Cham, pp.1-20, 2025
- II. **Establishment of Human Induced Pluripotent Stem Cells from Multiple Sclerosis Patients**
Begentaş O. C., Koç D., Kiriş E.
in: *Methods in Molecular Biology, Induced Pluripotent Stem Cells and Human Disease*, TURKSEN KURSAD, Editor, Humana Press, New York, pp.43-67, 2022
- III. **Human-Induced Pluripotent Stem Cell-Based Models for Studying Sex-Specific Differences in Neurodegenerative Diseases**
Kiriş E.
in: *Advances in Experimental Medicine and Biology*, Turksen,Kursad, Editor, Springer Nature, Zug, pp.57-88, 2021
- IV. **Quantitative Analysis of MAP-Mediated Regulation of Microtubule Dynamic Instability In Vitro— Focus on Tau**
Kiriş E., Ventimiglia D., Feinstein S. C.
in: *METHODS IN CELL BIOLOGY*, Leslie Wilson,John J. Correia, Editor, Elsevier Science, Oxford/Amsterdam , Massachusetts, pp.481-503, 2010

Refereed Congress / Symposium Publications in Proceedings

- I. **Amyloid beta peptit oligomerlerinin (A β (1-42)) in vitro muamelesinin TrkB sinyali artırılmış kök hücre temelli kortikal nöronlar üzerindeki etkisinin doğal kortikal nöronlar ile kıyaslamalı olarak araştırılması**
Beşarat P., EZGİN S., KİRİŞ E.
19. Ulusal Sinirbilim Kongresi, Online, Turkey, 21 - 23 November 2021
- II. **Fare Kök Hücrelerinden Başkalaştırılmış Bazal Ön Beyin Kolinerjik Nöronlarda TrkA Sinyalinin Artırılmasının in vitro Alzheimer Hastalığını Nörodejeneratif Sürecine Karşı Etkisinin Kontrollere Kıyasla Araştırılması**
EZGİN S., Beşarat P., KİRİŞ E.
19. Ulusal Sinirbilim Kongresi, Online, Turkey, 21 - 23 November 2021
- III. **Kinase and Phosphatase Signaling Pathways Serve as Essential Host Factors for Botulinum Neurotoxins and are Targets for Pan-Serotype Drug Development**
Nuss J., KİRİŞ E., Soloveva V., Duplantier A., Kane C.
Interagency Botulism Research Coordinating Committee Meeting, Fredericia, Denmark, 25 October 2015 - 28 October 2016
- IV. **New Steroidal 4-aminoquinolines Antagonize BoNT/A in mES-MNs in Post-intoxication Model**
Konstantinovic J. M., KİRİŞ E., Zlatovic M. V., Bavari S., Solaja B.
XXIV EFMC International Symposium on Medicinal Chemistry, Manchester, United Kingdom, 28 August - 01 September 2016
- V. **The effect of human microtubule associated protein tau on the assembly structure of microtubules and its ionic strength dependence**
Choi M. C., Raviv U., Miller H. P., Gaylord M., KİRİŞ E., Ventimiglia D., Needleman D. J., Chung P. J., Deek J., LaPointe N., et al.
American Physical Society, APS March Meeting 2010, Portland, United States Of America, 15 - 19 March 2010
- VI. **Quantification of dynamic behavior of microtubules in living cells using novel computational methods**
Altinok A., KİRİŞ E., Sargin M. E., Wilson L., Feinstein S. C., Manjunath B. S., Rose K.
38th Annual Meeting of Society for Neuroscience (SfN), Washington, Kiribati, 15 - 19 November 2008
- VII. **Novel tracking and analysis software for dynamic cell processes tau phosphorylation and the regulation of microtubule dynamics**

KİRİŞ E., Gaylord M. R., Ventimiglia D., Altinok A., Sargin M. E., Rose K., Manjunath B. S., Jordan M. A., Wilson L., Feinstein S. C.

16th Annual Research Symposium, Neuroscience Research Institute, University of Clifornia, Santa Barbara, Santa-Barbara, Honduras, 09 May 2008

VIII. **Syncrotron X ray Diffraction Study on the Size Distribution and the Mechanical Stability of Microtubules by Microtubule Associated Protein MAP Tau**

Choi M. C., Raviv U., Miller H. P., Gaylord M., KİRİŞ E., Ventimiglia D., Wilson L., Kim M. W., Feinstein S. C., Safinya C. R. American Physical Society (APS) Meeting, New Orleans, United States Of America, 10 - 14 March 2008

IX. **Effects of combinatorial tau pseudophosphorylation upon its aggregation behavior in vitro**

KİRİŞ E., Ventimiglia D., Gaylord M. R., Chen M., Medina H., Jordan M. A., Wilson L., Feinstein S. C.

18th Annual International Light Scattering Colloquium, Santa-Barbara, Honduras, 17 - 18 October 2007

X. **Tracing microtubules in live cell images**

Sargin M. E., Altinok A., KİRİŞ E., Feinstein S. C., Wilson L., Rose K., Manjunath B. S.

2007 4TH IEEE INTERNATIONAL SYMPOSIUM ON BIOMEDICAL IMAGING : MACRO TO NANO, VOLS 1-3, Darlington, United Kingdom, 12 - 15 April 2007

Supported Projects

KİRİŞ E., BEŞARAT P., Project Supported by Higher Education Institutions, Upregule edilmiş BDNFTrkB sinyalizasyonuna sahip kortikal nöronlarda oluşturulan in vitro Alzheimer Hastalığı modelinde p75NTR reseptörünün protein seviyesinin araştırılması, 2022 - 2023

KİRİŞ E., KOÇ D., Project Supported by Higher Education Institutions, Botulinum Nörotoksini Serotip A Enzimatik Parçasını içeren TurboID rekombinant plazmitinin eldesi ve işlevselliğinin kontrol edilmesi, 2022 - 2023

KİRİŞ E., Project Supported by Higher Education Institutions, PC12 hücrelerinde Botulinum Nörotoksin A serotipi intoksikasyonu sonrasında fosfataz ekspresyon profillerinin belirlenmesi, 2022 - 2023

KİRİŞ E., KOÇ D., Project Supported by Higher Education Institutions, KX2361 Küçük Molekülünün Botulinum Nörotoksin A Serotipini İnhibe Edebilme Potansiyelinin Fare Kök Hücrelerinden Başkalaştırılmış Motor Nöronlarda Araştırılması, 2021 - 2022

KİRİŞ E., EZGİN S., Project Supported by Higher Education Institutions, BMP9 türevi sentetik peptidin farklı dozlarının fare embriyonik kök hücrelerinin bazal ön beyin kolinerjik nöronlara dönüşmesi üzerine etkilerinin araştırılması, 2020 - 2021

ERSON BENSAN A. E., KİRİŞ E., MUYAN M., GÜRSEL M., TERZİ ÇİZMECİOĞLU N., BANERJEE S., Project Supported by Higher Education Institutions, Meme dokusunun gelişim aşamalarının APA açısından analizi, 2018 - 2019

Memberships / Tasks in Scientific Organizations

HÜCRESEL TEDAVİ ÜRÜNLERİNİN GELİŞTİRİLMESİ ÇAĞRI PROGRAMI DANIŞMA KURULU ÜYESİ, Member of Advisory Board, 2020 - 2021, Turkey

Scientific Refereeing

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, November 2023

TUBITAK Project, 2219 - Yurt Dışı Doktora Sonrası Araştırma Burs Programı, TÜBİTAK, Turkey, August 2023

TUBITAK Project, 1002 - Quick Support Program, TÜBİTAK, Turkey, August 2023

BIOLOGY METHODS & PROTOCOLS, Journal Indexed in SCI-E, December 2022

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, December 2022

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, November 2022

TOXICON, Journal Indexed in SCI-E, September 2022

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, June 2022

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, June 2022

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, December 2021

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, December 2021

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, October 2021

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, May 2021

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, October 2020

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, Middle East Technical University, Turkey, August 2020

TUBITAK Project, 3501 - National Young Researcher Career Development Program, TÜBİTAK, Turkey, August 2020

TUBITAK Project, 2236 - Program for Supporting International Researchers, TÜBİTAK, Turkey, January 2020

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, July 2019

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, May 2019

TUBITAK Project, 1002 - Quick Support Program, TÜBİTAK, Turkey, January 2019

Metrics

Publication: 34
Citation (WoS): 340
Citation (Scopus): 352
H-Index (WoS): 10
H-Index (Scopus): 10

Invited Talks

Multipl Skleroz hastalığında BDNF-TrkB sinyal yolağının indüklenmiş pluripotent kök hücrelerinden oluşturulan oligodendrosit modellerinde araştırılması', Conference, 18. TIBBİ BİYOLOJİ ve GENETİK Kongresi, Turkey, October 2023

Alzheimer hastalığı nörodejeneratif süreçlerine karşı nörotrofin sinyal yollarının modülasyonu: Upregüle edilmiş TrkA sinyal yolağının bir in vitro Alzheimer hastalığı modelinde etkisinin incelenmesi', Conference, Ulusal Sinirbilim Kongresi, Turkey, October 2022

Awards

Kiriş E., ODTÜ Yılın Tezi Danışmanı (2020-2021 Akademik Yılı ODTÜ Lisansüstü Tez Ödülü), Odtü, June 2022

Kiriş E., Askan Gündoğan A., Yılmazel Tokel Y. D., Research Encouragement Award, Odtü Prof. Dr. Mustafa N.Parlar Eğitim Ve Araştırma Vakfı, December 2018

Non Academic Experience

Neural Development Section, Mouse Cancer Genetics Program, National Cancer Institute at Frederick, National Institutes of Health, Frederick, MD, USA, Research Scientist