

## Assoc. Prof. MÜŞERREF DUYGU SAÇAR DEMİRCİ

### Personal Information

**Office Phone:** [+90 352 224 8800](tel:+903522248800)

**Email:** [duygu.sacar@agu.edu.tr](mailto:duygu.sacar@agu.edu.tr)

**Web:** <https://avesis.agu.edu.tr/duygu.sacar>

### International Researcher IDs

ORCID: 0000-0003-2012-0598

Publons / Web Of Science ResearcherID: N-7458-2017

Yoksis Researcher ID: 114170

### Education Information

Doctorate, Izmir Institute Of Technology, Institute Of Engineering And Natural Sciences, Molecular Biology and Genetics, Turkey 2014 - 2017

Postgraduate, Izmir Institute Of Technology, Institute Of Engineering And Natural Sciences, Molecular Biology and Genetics, Turkey 2011 - 2014

Undergraduate, Izmir Institute Of Technology, Faculty Of Science, Department Of Molecular Biology And Genetics (English), Turkey 2006 - 2011

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Computational establishment of microRNA metabolic networks, Izmir Institute Of Technology, Institute Of Engineering And Natural Sciences, Molecular Biology and Genetics, 2017

Postgraduate, An integrative data mining approach for microrna detection in human, Izmir Institute Of Technology, Institute Of Engineering And Natural Sciences, Molecular Biology and Genetics, 2013

### Research Areas

bioinformatics, Biocomputing, Bioinformatics, Parasitology, Virology

### Academic Titles / Tasks

Associate Professor, Abdullah Gul University, Yaşam Ve Doğa Bilimleri Fakültesi, Biyomühendislik, 2022 - Continues

Assistant Professor, Abdullah Gul University, Yaşam Ve Doğa Bilimleri Fakültesi, Bioinformatics, 2018 - 2022

Research Assistant, Izmir Institute Of Technology, Institute Of Engineering And Natural Sciences, Molecular Biology and Genetics, 2012 - 2017

## Courses

RNA Biology, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020  
MSC Special Topics, Postgraduate, 2021 - 2022  
Digital Learning Platform Basic Level Transfer Elective I, Undergraduate, 2022 - 2023  
Bioinformatics, Postgraduate, 2022 - 2023, 2018 - 2019  
MSc Thesis, Postgraduate, 2022 - 2023, 2021 - 2022  
Special Studies in Bioengineering, Postgraduate, 2022 - 2023  
Bioinformatics, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Introduction to Programming, Undergraduate, 2022 - 2023  
Introduction to Programming, Undergraduate, 2022 - 2023, 2021 - 2022  
Data Mining, Postgraduate, 2021 - 2022, 2019 - 2020  
Digital Learning Platform Transfer Elective I, Undergraduate, 2022 - 2023  
AGU WAYS, Undergraduate, 2021 - 2022  
Computational Biology, Postgraduate, 2021 - 2022, 2019 - 2020  
Virology, Undergraduate, 2020 - 2021  
Food and Health, Undergraduate, 2019 - 2020

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **NeRNA: A negative data generation framework for machine learning applications of noncoding RNAs**  
Orhan M. E., DEMİRCİ Y. M., SAÇAR DEMİRCİ M. D.  
Computers in Biology and Medicine, vol.159, 2023 (SCI-Expanded)
- II. **Computational prediction of microRNAs in Histoplasma capsulatum**  
SAÇAR DEMİRCİ M. D.  
MICROBIAL PATHOGENESIS, vol.148, 2020 (SCI-Expanded)
- III. **Computational analysis of microRNA-mediated interactions in SARS-CoV-2 infection**  
SAÇAR DEMİRCİ M. D., ADAN A.  
PEERJ, vol.8, 2020 (SCI-Expanded)
- IV. **MicroRNA prediction based on 3D graphical representation of RNA secondary structures**  
SAÇAR DEMİRCİ M. D.  
TURKISH JOURNAL OF BIOLOGY, vol.43, no.4, pp.274-286, 2019 (SCI-Expanded)
- V. **The Expressed MicroRNA-mRNA Interactions of Toxoplasma gondii**  
Acar I. E., SAÇAR DEMİRCİ M. D., Gross U., Allmer J.  
FRONTIERS IN MICROBIOLOGY, vol.8, 2018 (SCI-Expanded)
- VI. **On the performance of pre-microRNA detection algorithms**  
SAÇAR DEMİRCİ M. D., Baumbach J., Allmer J.  
NATURE COMMUNICATIONS, vol.8, 2017 (SCI-Expanded)
- VII. **Delineating the impact of machine learning elements in pre-microRNA detection**  
SAÇAR DEMİRCİ M. D., Allmer J.  
PEERJ, vol.5, 2017 (SCI-Expanded)
- VIII. **The impact of feature selection on one and two-class classification performance for plant microRNAs**  
Khalifa W., Yousef M., SAÇAR DEMİRCİ M. D., Allmer J.  
PEERJ, vol.4, 2016 (SCI-Expanded)
- IX. **Machine Learning Methods for MicroRNA Gene Prediction**  
Sacar M. D., Allmer J.  
MIRNOMICS: MICRORNA BIOLOGY AND COMPUTATIONAL ANALYSIS, vol.1107, pp.177-187, 2014 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Circular RNA-MicroRNA-MRNA interaction predictions in SARS-CoV-2 infection**

DEMİRCİ Y. M., SAÇAR DEMİRCİ M. D.

JOURNAL OF INTEGRATIVE BIOINFORMATICS, vol.18, no.1, pp.45-50, 2021 (ESCI)

**II. COMPUTATIONAL IDENTIFICATION OF MICRORNAS FROM SSDNA VIRUSES**

SAÇAR DEMİRCİ M. D.

Eskişehir Technical University Journal of Science and Technology A - Applied Sciences and Engineering, vol.19, no.3, pp.565-573, 2018 (Peer-Reviewed Journal)

**III. Improving the Quality of Positive Datasets for the Establishment of Machine Learning Models for pre-microRNA Detection**

SAÇAR DEMİRCİ M. D., Allmer J.

JOURNAL OF INTEGRATIVE BIOINFORMATICS, vol.14, no.2, 2017 (ESCI)

**IV. A Machine Learning Approach for MicroRNA Precursor Prediction in Retro transcribing Virus Genomes**

SAÇAR DEMİRCİ M. D., TOPRAK M., ALLMER J.

Journal of Integrative Bioinformatics, vol.13, no.5, 2016 (Scopus)

**V. Feature Selection Has a Large Impact on One Class Classification Accuracy for MicroRNAs in Plants**

YUSEF M., SAÇAR DEMİRCİ M. D., KHALIFA W., ALLMER J.

Advances in Bioinformatics, vol.2016, pp.1-6, 2016 (Scopus)

**VI. Computational Prediction of MicroRNAs from Toxoplasma gondii Potentially Regulating the Hosts Gene Expression**

SAÇAR M. D., BAĞCI C., ALLMER J.

GENOMICS PROTEOMICS BIOINFORMATICS, vol.12, no.5, pp.228-238, 2014 (Scopus)

**VII. Can MiRBase Provide Positive Data for Machine Learning for the Detection of MiRNA Hairpins**

SAÇAR M. D., Hamzeyi H., ALLMER J.

Journal of Integrative Bioinformatics, vol.10, no.2, 2013 (Scopus)

## Books & Book Chapters

**I. Computational Detection of Pre-microRNAs**

Saçar Demirci M. D.

in: miRNomics MicroRNA Biology and Computational Analysis, Jens Allmer, Malik Yousef, Editor, Humana Press, Inc., New York, pp.167-174, 2022

**II. Computational Prediction of Functional MicroRNA-mRNA Interactions**

SAÇAR DEMİRCİ M. D., Yousef M., ALLMER J.

in: Computational Biology of Non-Coding RNA, Lai Xin, Gupta Shailendra K., Vera Julio, Editor, Humana Press, New York, pp.175-196, 2019

**III. Differential Expression of Toxoplasma gondii MicroRNAs in Murine and Human Hosts**

SAÇAR DEMİRCİ M. D., Bağcı C., ALLMER J.

in: Non coding RNAs and Inter kingdom Communication, Leitão Ana Lúcia, Enguita Francisco J., Editor, Springer International Publishing, pp.143-159, 2016

## Refereed Congress / Symposium Publications in Proceedings

**I. MiRNomics: miRNA biyolojisi ve bilişimsel analizi**

SAÇAR DEMİRCİ M. D.

V. Yaşam Bilimleri Kongresi, Kayseri, Turkey, 21 - 22 February 2020

**II. Challenges of Big Data in Machine Learning Based MicroRNA Analysis**

SAÇAR DEMİRCİ M. D.

12. Tıp Bilişimi Kongresi, Ankara, Turkey, 15 - 16 November 2019

**III. MicroRNAs: small regulators of gene expression**

SAÇAR DEMİRCİ M. D.

64. Jahrestagung der Deutschen Gesellschaft für Medizinische Informatik, Biometrie und Epidemiologie e. V. (GMDS) - Medical Omics Workshop, Dortmund, Germany, 8 - 11 September 2019

- IV. **Analyzing potential targets of viral microRNAs in human**  
SAÇAR DEMİRCİ M. D.  
The International Symposium on Health Informatics and Bioinformatics, (HIBIT 2018), Antalya, Turkey, 25 - 27 October 2018
- V. **izMiR 2.0: an enhanced version of consensus miRNA prediction method**  
SAÇAR DEMİRCİ M. D., ALLMER J.  
The International Symposium on Health Informatics and Bioinformatics, (HIBIT 2018), Antalya, Turkey, 25 - 27 October 2018
- VI. **A Machine Learning Approach for MicroRNA Precursor Prediction in Retro transcribing Virus Genomes**  
SAÇAR DEMİRCİ M. D., TOPRAK M., ALLMER J.  
International Symposium on Integrative Bioinformatics 2016, Bielefeld, Germany, 21 - 23 September 2016
- VII. **Data mining for microrna gene prediction On the impact of class imbalance and feature number for microrna gene prediction**  
SAÇAR M. D., ALLMER J.  
2013 8th International Symposium on Health Informatics and Bioinformatics, Ankara, Turkey, Turkey, 25 - 27 September 2013
- VIII. **Comparison of Four Ab Initio MicroRNA Prediction Tools**  
ALLMER J., SAÇAR M. D.  
Proceedings of the International Conference on Bioinformatics Models, Methods and Algorithms, Barcelona, Spain, 11 - 14 February 2013

## Supported Projects

Seyrantepe V., Saçar Demirci M. D., Demir S. A., TUBITAK Project, Investigation of Biological Role of miRNAs for the Regulation of Lysosomal Exocytosis in Tay-Sachs Disease, 2022 - 2025

Saçar Demirci M. D., Demirci Y. M., TUBITAK Project, RNA İkincil Yapılarının Çok Boyutlu Gösterimi ve Pre-Mirna Tespiti İçin Uygulamaları, 2020 - 2021

## Metrics

Publication: 27

Citation (WoS): 231

Citation (Scopus): 243

H-Index (WoS): 8

H-Index (Scopus): 7