

# FATMA BETUL DINCASLAN

Molecular Biologist | Bioinformatician | Bioassay Developer



## THESIS RESEARCH

2019  
|  
2023

### NUS Research Scholar

I was leading (design, experiments and analysis) two different bioassay projects.

📍 NUS&iHealthtech, Singapore

#### High-Throughput Total RNA-Sequencing of Single Cells

- Development of single cell high-throughput one-step (lysis, A-tail modification, reverse transcription and template switching) total RNA sequencing assay
- Optimization in low-bulk format using in-house reaction mixtures
- Modification of the pipelines for total RNA-seq data analysis using open-source tools
- Benchmarking and application of the assay on cell lines and human Peripheral Blood Mononuclear Cells (PBMCs)

2016  
|  
2019

### Master's Student

I was leading my thesis project as well as assisting 3 other projects.

📍 Bilkent University, Ankara, Turkey

#### Tissue Specific Transcriptome of Zebrafish in AChE Mutant Embryos

- Analysis of tissue specificity (TS) of zebrafish
- Comparison of different TS metrics and normalization methods on TS discovery
- Application of the TS analysis on publicly available datasets of mutant zebrafish embryos
- *In vivo* validation of the findings with qPCRs after isolating RNA of model zebrafish embryos



## EDUCATION

2019  
|  
2023

### Ph.D., Biomedical Engineering

Thesis: **(Assay) Development of High-Throughput Total RNA Sequencing of Single Cells**

[The degree was awarded in December 2023]

Advisor(s): [Lih Feng CHEOW](#)

📍 National University of Singapore (NUS), Singapore

2017  
|  
2019

### M.Sc., Molecular Biology and Genetics

Thesis: **Tissue Specific Transcriptome of Zebrafish in AChE Mutant Embryos**

Advisor(s): [Ozlen KONU](#)

📍 Bilkent University, Ankara, Turkey

2011  
|  
2016

### B.Sc., Molecular Biology and Genetics

(First year is English Prep School)

📍 Bilkent University, Ankara, Turkey

## CONTACT INFO

in | |

Available for  
research/scientist roles

## Technical Skills

DNA and RNA isolation, q/PCR, Cell Culture and FACS basics, Library Preparation and Illumina Sequencing Common bioinformatics databases or tools (i.e., NCBI, GEO, Primer3, UCSC Genome Browser, Ensembl, GO/Panther, Expression Atlas, STRING), Big data management, Bulk/Single-cell transcriptomics data analysis using Command Line Interface, FastQC, cutadapt, riboDetector, MultiQC, seqkit, samtools, cite-seq-count, STAR/Solo, Cell Ranger, htseq-count/feature counts, and available packages in R/RStudio

## Soft Skills

Independent Research & Teamwork/Collaboration, Analytical Thinking & Problem Solving, Resilience, Life-long learning attitude, Active Communication & Listening

Leading and troubleshooting my/side projects, one-to-one mentoring of more than 5 undergrad colleagues, organizing symposiums with other international students, collaborating with internal/external teams, being a teaching assistant for 5 different labs, not giving up research despite pandemic or rejections provided me to build/improve above-mentioned skills.



## AWARDS AND MEMBERSHIPS

- 2019  
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2023 • **NUS Research Scholarship**  
Awarded by Singapore-MOE and NUS for PhD in Biomedical Engineering 📍 Singapore
- 2022 • **eLife Ambassador**  
Short-term trainee of "learning and community-building" 📍 Earth
- 2018  
|  
2023 • **ISCB Student Council & RSG-Turkey Active Member**  
Various roles in the virtual seminars (webinar) team at ISCB-SC 📍 World  
Organization of the first [Asian Student Council Symposium](#), #ASCS2022  
Social media team, [symposium organization](#), and [Med&Omics](#) at ISCB-SC-RSG Turkey
- 2011  
|  
2016 • **Comprehensive Scholarship**  
Awarded by Bilkent University (ranked in the top 0.1% among  $\sim 1.7 \times 10^6$ , Turkish University Entrance Exams) 📍 Ankara, Turkey



## TEACHING

- 2020  
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2022 • **BN2301 Fundamental Biochemistry and Biomaterials for Bioengineers, NUS**  
Teaching Assistant (TA): DNA fingerprinting and tutorships 📍 Singapore
- 2017  
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2018 • **MBG326 Introduction to Bioinformatics, Bilkent University**  
TA: R/RStudio (common databases and tools, case-study data analysis using Bioconductor/CRAN packages) 📍 Ankara, Turkey
- 2017  
|  
2018 • **MBG223 Molecular Genetics and MBG302 Molecular Biology of The Cell-II, Bilkent University**  
TA: molecular cloning experiments (plasmid editing, restriction enzyme digestion, ligation and miniprep) & cell culture experiments (scratch, kinase inhibition and crystal violet assays) 📍 Ankara, Turkey



## PUBLICATIONS AND POSTERS

- 2024 • **[Automated high-throughput profiling of single-cell total transcriptome with scComplete-seq](#)**  
(Preprint) DOI: 10.1101/2024.03.12.584729  
Fatma Betul Dincaslan, Shaun Wei Yang Ngang, Rui Zhen Tan, Lih Feng Cheow
- 2023 • **High-Throughput Total RNA-Sequencing of Single Cells**  
Oral Presentation for jointly hosted CSI-ENS Symposium: Single-Cell Res/volution 2023 📍 Singapore  
Fatma Betul Dincaslan, Lih Feng Cheow
- 2021 • **Functional analysis of co-expression networks of zebrafish ace2 reveals enrichment of pathways associated with development and disease**  
Genome, DOI: 10.1139/gen-2021-0033  
Ayse Gokce Keskus, Melike Tombaz, Burcin Irem Arici, **Fatma Betul Dincaslan**, Afshan Nabi, Huma Shehwana, and Ozlen Konu
- 2018 • **A pipeline for examination of tissue-specificity of differentially expressed genes in zebrafish mutants: Application to AChE mutants**  
Poster for International Symposium on Health Informatics and Bioinformatics (HIBIT) 📍 Antalya, Turkey  
**Fatma B. Dincaslan**, Afshan Nabi, M. Efe Isilak, Ayse G. Keskus, M. Ender Avci, Michelle M. Adams, Ozlen Konu