

## **Akin Sevinc, PhD, MBA**

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### **OBJECTIVE & SUMMARY**

Poised to contribute a unique blend of PhD level academic and research experience, alongside executive success in healthcare, biotech and genetics industries. Enthusiastic professional with proven record of research on molecular genetics (Publication 1), molecular biophysics (P2, P3, P4, P7), molecular, genetic, biochemical research (P5, P6), and human genetics (P8, P9, P10, P11, P12); and successful strategy execution in two enterprises (Izmir Genetik and AKSE Genetik) growing into a final EBIDTA of \$5M+.

### **AREAS OF INTEREST**

Translational Research, Product Research Development, Integrative Marketing and Sales in Diagnostic Testing. Genotype - Phenotype Correlation, Variant Analysis and Clinical correlation utilizing Exome Sequence data. Molecular Genetic Analysis and Epigenetics – with a special interest in Bioinformatics and Nutrigenetics. Molecular Biology and Genetics with a special interest in bioanalytical, biophysical and computational analysis. Molecular Biophysics, Genetic Screening, Biochemistry and Behavioral Genetics. Neuroeconomics.

### **PROFESSIONAL POSITIONS**

**CALYX CONSULTING ([www.nexusgenetix.com](http://www.nexusgenetix.com)) – Founder** **01/2020 – current**

- Established numerous national and international collaborations in reproductive biology and oncology.

**İZMİR GENETİK ([www.izmirgenetik.com](http://www.izmirgenetik.com)) – General Manager** **06/2016 – current**

- Grew the company from start to a licensed / certified genetics laboratory, performed 20,000+ genetic testing.
- Established numerous national and international collaborations in reproductive biology and oncology.
- Managed to grow the marketing team of the company to 10+ marketing agents throughout Turkey.
- Currently manage 22+ personnel at various levels, achieving a yearly EBITDA of \$5M+.

**AKSE GENETİK – General Manager** **10/2015 – current**

- Created and implemented a novel genetic product in exome sequencing, with a special interest in nutrigenetics.
- Prepared and received funding for 9 research projects in the fields of human molecular genetics and testing.
- Completed 10 research projects with 4 graduate and 6 undergraduate students and published 7 manuscripts.

**PHARMAPLUS GENETİK – Genetics and Business Development Specialist** **06/2014 – 10/2015**

- Managed launch of a medical diagnostic laboratory using Next Generation Sequencing (NGS), NextSeq 500.
- Launched the first product of the company; Non-Invasive Prenatal Test (NIPT).

**BLACKMORE PARTNERS – Equity Research Intermediate** **08/2012 – 05/2014**

- Managed setting up of a genetic laboratory using Next Generation Sequencing (NGS), NextSeq 500.

### **ACADEMIC POSITIONS & EDUCATION**

**Assistant Professor (2017-2020)** Faculty of Medicine, Istanbul Altinbas University, Turkey

**Post-Doctoral Associate (2015-2017)** Dpt. of Biological Sciences, Middle East Technical University, Turkey.

**Lecturer (2013-2015)** Department of Sciences, Morton College, USA.

**Chemistry Laboratory Coordinator (2006-2011)** Dpt. Of Chemistry, University of Illinois at Chicago, IL

**M.B.A. (2014)** Department of Business Administration, Wayne State College, Nebraska

**Ph.D. (2011)** Department of Chemistry, University of Illinois at Chicago, Illinois.

**M.Sc. (2003)** Department of Molecular Biology and Genetics, Bilkent University, Turkey.

**B.Sc. (2001)** Department of Molecular Biology and Genetics, Middle East Technical University, Turkey.

**RESEARCH EXPERIENCE*****AkSe Genetik, İlaç ve Biyoteknoloji Ltd. Şti., Turkey*****2/2015 – current**

- Launched numerous research projects in genetics and molecular biophysics.
  1. Novel biophysical technique aimed for identification of aneuploidies. TUBITAK 1512 TeknoGirişim Support.
  2. Identification of genomic alterations in childhood Langerhans cell histocytosis using targeted next-generation sequencing technology for designing a novel diagnostic tumor panel. Submitted as TUBITAK 1003 grant proposal (1.3M TL) with Prof. Dr. Erdener Özer from Dokuz Eylül University, Faculty of Medicine.
- Prepared several research projects in submission stage to KOSGEB, TEB and other supporting agencies.
  1. Development of a novel DermoCosmetic genetic panel for personalized skincare. Project proposal *in preparation* with DSE Dermokozmetik Ltd. Şti. and will be submitted to KOSGEB and TEB grant support.
  2. Development of a novel technique for accurate and industrial scale sexing of un-incubated eggs in order to avoid undesirable culturing and elimination of male chicks. This project is *in preparation* for submission to both KOSGEB and GreenPeace with Animal Welfare perspective.

***İzmir Genetik Araştırma ve Ticaret Ltd. Şti., Turkey*****10/2015 – current**

- Provided scientific and research-based support to Izmir Genetik management and sales team for introduction and marketing of numerous advanced genetic tests to Turkish market.
- Formulated several research projects aimed for adaptation of numerous advanced genetic tests to Turkish population. Two projects are being submitted to TUBITAK for support.
- Performed initial feasibility analysis of advanced genetic tests for Turkish market and successfully handled their implementation and initiation.

***İstanbul Altınbaş University, Department of Medical Biochemistry, Turkey*****01/2017 – 01/2019**

- Taught Molecular and Cellular Medical Sciences I, II, III and IV.
- Launched 3 courses; Molecular Genetic Counseling, Nutrigenomics, Translational Research in Healthsciences.
- Prepared and participated numerous research projects in molecular genetics and biophysics.
- Successfully completed graduate training of three scientists and published their projects.
  1. Development of a novel therapeutical technique aimed for identification of aneuploidies for prenatal diagnosis. TUBITAK 1512 TeknoGirişim Support (150,000 TL).
  2. Utilization of molecular biophysical techniques for clinical evaluation of breast milk samples.
  3. Next generation genetic tests and their use in translational science for personalized and precision medicine.

***Department of Biological Sciences, Middle East Technical University, Turkey*****10/2014 – 02/2017**

- Launched numerous research projects in molecular biophysics and biochemistry.
  1. Characterization of Alzheimer's disease and mild cognitive impairment from body fluids for differential diagnosis. Collaborative project of METU-Biological Science Department and Neurology Department of İzmir Tepecik Training and Research Hospital.
  2. Therapeutic effects of  $\gamma$ -tocotrienol on liver carcinogenesis and physiology. TUBITAK 2232 fellowship project (March- 2015-March 2017).
  3. Understanding the molecular effects of novel antidepressant agomelatine on cellular membranes.
- Handled collaborative projects involving the application of spectroscopic and calorimetric techniques in wide range of scientific research proposals, such as; molecular neurobiology and phylogenetic research in botany.

***Pharmaplus Healthcare and Medical Research and Development, Turkey*****06/2015 – 10/2015**

- Built and managed a fully functional Next-Generation Sequencing genetic analysis laboratory designed to work in the field of non-invasive prenatal testing (NIPT).
- Launched several research projects in genetics and biochemistry of human disease conditions.
  1. Validation and Improvement of a novel Non-Invasive Prenatal Test (NIPT) using Next Generation Sequencing (including fetal fraction determination and development of a development of a point-of-care personalized sample collection kit). Submitted to TUBITAK 1003 call and accepted for the second level application.

2. Development of a novel panel for the determination of major pathological genetic disorders. Being prepared as a TUBITAK 1507 project proposal in collaboration with Prof. Erdener Ozer, Dokuz Eylül University.

3. Utilization of Next Generation System for development of Preimplantation Genetics Screening kit using NextSeq 500. Being prepared as a TUBITAK 3001 project proposal.

**University of Illinois at Chicago, Chicago****07/2004 – 05/2011**

- Successfully completed several research projects in neuroscience, bioanalytical chemistry, biochemistry and biophysical chemistry meeting all goals and timelines, including;
  1. Genetic screening of brain cDNA library for interacting protein partners in Alzheimer's Disease.
  2. Quantitative analysis of 32 novel brain proteins and their interaction with neuronal cytoskeleton.
  3. Genetic engineering and characterization of 14 human brain proteins that interact with SpβII.
  4. Comparative analysis of Genetic & Biophysical techniques with directed mutagenesis techniques.
  5. Isothermal Titration Calorimetric analysis for mutational effects (G46) on spectrin tetramerization.

**Department of Molecular Biology and Genetics, Bilkent University, Turkey 08/2001 – 05/2004**

- Molecular genetics analysis of determinants of human cancers and neurodegenerative diseases.
- Elucidation of RTT mutations and their involvement in the Neurodegenerative RETT Syndrome.
- Utilized Radioactive and SSCP-based techniques for the routine analysis of mutation detection.
- Studied impacts of CHEK2, RNASEL variants and X-chromosome inactivation.

**PUBLICATIONS**

1. **Sevinc A., et al.** Lack of association between *RNASEL* Arg462Gln variant and the risk of breast cancer. *Anticancer Res.* 24 (2004) 2547-2549.
2. **Sevinc A.,** and Fung L. W.-M. Mutational effects on brain spectrin tetramerization. *FEBS Lett.* 273 (2006) 239.
3. Kang J., Song Y., **Sevinc A.,** Fung L. W.-M. Important residue (G46) in erythroid spectrin tetramer formation. *Cell. Mol. Biol. Lett.* 15 (2010) 46-54.
4. **Sevinc A.,** Witek M., and Fung L. W.-M. Yeast two-hybrid and ITC studies of alpha and beta spectrin interaction at the tetramerization site. *Cell. Mol. Biol. Lett.* 16 (2011) 452-461.
5. **Sevinc A.,** and Fung L. W.-M. Non-erythroid beta spectrin interacting proteins and their effects on spectrin tetramerization. *Cell. Mol. Biol. Lett.* 16 (2011) 595-606.
6. **Sevinc, A.,** Yonar, D., Severcan, F. Investigation of neurodegenerative diseases from body fluid samples using Fourier transform infrared (FTIR) spectroscopy. *Biomedical Spectroscopy and Imaging* 4 (2015) 341-357.
7. **Sevinc, A., et al.** Possible therapeutic effects of Gamma-Tocotrienol Conjugation Therapy with Doxorubicin on Hepatocellular Carcinoma Cell Line HEPG2. *Biophysical Journal* 113(3) (2017) 280a.
8. Aghayeva, N., Belian, A., Yaylım, İ., Turan, S., and **Sevinc, A.** Lack of association between the occurrence of ectopic pregnancy and variations in the TGFβI and E-Cadherin genes. *MOJ Proteomics & Bioinformatics* 8(1) (2019) 1-5.
9. Ozer, E., **Sevinc, A.,** Ince D., Yuzuguldu, R., and Olgun, N. BRAF V600E Mutation: A Significant Biomarker for Prediction of Disease Relapse in Pediatric Langerhans Cell Histiocytosis. *Pediatric and Developmental Biology* (2019) 1-7.
10. Eralp, T.N., Celik, S., and **Sevinc, A.** A novel genetic interplay in Marfan syndrome: a brief review of literature and presentation of a case. *MOJ Proteomics & Bioinformatics* 10(1) (2020).
11. Eralp, T.N. and **Sevinc, A.** Gamma-tocotrienol therapy and its apoptotic effects on different cancer types. *Recent Advances in Molecular Biology and Biochemistry* 25 (2023).
12. Eralp, T.N., **Sevinc, A.,** and Mansuroglu, B. Combination therapy application of Abemaciclib with Doxorubicin in triple negative breast cancer cell line MDA-MB-231. *Cellular and Molecular Biology* 70(2) (2024) 169-177.

**MEETING ABSTRACTS**

1. Bayari S., **Sevinc A.**, *et al.* “Molecular Differentiation of Mild Cognitive Impairment and Dementia Phases in Alzheimer’s Disease Using Vibrational Spectroscopy”. *International Brain Research Organization (IBRO) World Congress on Neuroscience, 2015.*
2. **Sevinc A.**, *et al.* “Brain Proteins Interacting with Brain  $\beta$ -Spectrin Tetramerization Site”. *Student Research Foundation, Research Forum, 2010.*
3. **Sevinc A.**, *et al.* “Brain Proteins Interacting with Brain  $\beta$ -Spectrin Tetramerization Site”. *Student Research Foundation, Research Forum, 2009.*
4. **Sevinc A.**, *et al.* “Mutational Effects on Brain  $\alpha$ -Spectrin Tetramerization Site and Identification of Human Brain Proteins Interacting with  $\beta$ -Spectrin”. *Brain Research Foundation, Neuroscience Day, 2008.*
5. **Sevinc A.**, *et al.* “Brain Proteins Interacting with Brain  $\beta$ -Spectrin Tetramerization Site”. *Student Research Foundation, Research Forum, 2008.*
6. **Sevinc A.**, *et al.* “Mutational Effects on Spectrin Tetramerization”. *Federation of European Biochemical Societies Congress, 2006.*
7. **Sevinc A.**, *et al.* “X Chromosome Inactivation and Breast Cancer”. *European Society of Human Genetics Congress, 2004.*
8. **Sevinc A.**, *et al.* “RNASEL G1385A Mutasyonunun Meme Kanseri ile İlişkisi”. *6<sup>th</sup> National Prenatal Diagnosis and Medical Genetics Congress, 2004.*
9. **Sevinc A.**, *et al.* “X Kromozom Etkinsizleştirilmesinin Meme Kanseri ile İlişkisi”. *6<sup>th</sup> National Prenatal Diagnosis and Medical Genetics Congress, 2004.*

**COURSES OFFERED**

*University of Illinois at Chicago & Morton College, IL*

Freshman Chemistry, Freshman Biology, Biochemistry

*Altınbas University*

Molecular & Cellular Medicine I, II, III, IV

Introduction to Genetic Counseling

Introduction to Nutrigenetics and Nutrigenomics

Entrepreneurship & Translational Science in Medicine

**PROJECTS PARTICIPATED**

- **Ongoing project application**, Characterization of Alzheimer's disease\_and\_mild cognitive\_impairment from body fluids for differential diagnosis. Collaborative project of METU-Biological Science Department and Neurology Department of İzmir Tepecik Training and Research Hospital.
- **Ongoing project application**, Characterization of phylogeny of cultivated and wild wheat species using ATR-FTIR spectroscopy coupled with chemometric analysis.
- **March- 2015-March 2017**, Therapeutic effects of  $\gamma$ -tocotrienol on liver carcinogenesis and physiology. TUBITAK 2232 BİDEB project in coordination with Prod. Feride Severcan, Middle East Technical University.
- **July 2016 – January 2018**, TUBİTAK 1512 TEYDEB Grant received for “Development of a novel technique for identification of molecular genetic changes”.

**PREVIOUS LABORATORY EXPERIENCES**

- *Next-Generation Sequencing and Bioinformatic applications.*
- *ATR-FTIR spectroscopy and its applications in molecular biology, such as Alzheimer’s Disease.*
- *Chemometric analysis of spectroscopic data.*

**Alzheimer's Disease**

- “Identification of brain proteins interacting with the Alzheimer's Disease related Beta Spectrin subunit”, University of Illinois at Chicago, Chicago.
- “Competitive Analysis of Proteins Interacting with Brain Spectrin alpha and beta subunits using Yeast Protein Three-Hybrid System”, University of Illinois at Chicago, Chicago.
- “Important residue (G46) in spectrin tetramer formation”, University of Illinois at Chicago, Chicago.
- “Mutagenic Characterization of Spectrin Tetramerization Using Yeast Two- and Three-Hybrid System”, University of Illinois at Chicago, Chicago.
- “Thermodynamic Characterization of Spectrin Tetramerization Using Site Directed Mutagenesis and Isothermal Titration Calorimetry”, University of Illinois at Chicago, Chicago.

**Molecular Genetics**

- “Haplotype Analysis of BRCA1 & BRCA2 Mutations Among Turkish and Greek Carriers”, Bilkent University, Ankara.
- “X chromosome Inactivation and Breast Cancer”, Bilkent University, Ankara.
- “RNASEL G1385A and CHEK2 1100DelC Mutations in Breast Cancer”, Bilkent University, Ankara.

**Neurodegenerative Diseases**

- “Neurodegenerative mutation screening; RETT syndrome”, Bilkent University, Ankara.
- “Neurogenetic analysis of L-2 Hydroxy Glutaric Aciduria”, Bilkent University, Ankara.

**Others**

- “A Novel Approach for Mutation Detection by Use of Fourier Transform InfraRed Spectroscopy”, Middle East Technical University, Ankara.
- “Investigation of Carotenes Produced by *R. sphaeroides* and Their Possible Effects on Cancer Tissue, Middle East Technical University, Ankara.
- “Isolation and Characterization of Microorganisms Producing Alkaline Lipase for its Wide Usage in Cleaning Industry”, Ege University, Izmir.

**SCORES FROM STANDARDIZED TESTS****TOEFL (Test of English as a Foreign Language)**

|             |   |
|-------------|---|
| Date        | : Feb 14, 2004                            |
| Total Score | : 260 (CBT) (Corresponding to 620 on PBT) |

**LES (Lisansüstü Eğitim Sınavı)**

|                    |  |
|--------------------|--|
| Date               | : May, 2001  |
| Quantitative Score | : 75.834 / 80      Ranking: 394 <sup>th</sup> % Below: 99  |
| Verbal Score       | : 68.777 / 80      Ranking: 1018 <sup>th</sup> % Below: 99 |

**GRE (Graduate Record Examination) General**

|                    |                              |
|--------------------|------------------------------|
| Date               | : Nov, 2000                  |
| Verbal Score       | : 360 / 800      % Below: 16 |
| Quantitative Score | : 800 / 800      % Below: 98 |
| Analytical Score   | : 600 / 800      % Below: 81 |

**GRE Subject (Biochemistry, Cell and Molecular Biology)**

|             |                        |
|-------------|------------------------|
| Date        | : Dec, 2002            |
| Total Score | : 610      % Below: 81 |

**SCHOLARSHIPS AND AWARDS**

**Fellowships and Scholarships**

- **2016 - 2018**, TUBİTAK - 1512 Fellowship (TeknoStart programı).
- **2015 - 2017**, TUBİTAK - 2232 Fellowship (Yurda Dönüş Programı).
- **2002**, European Genetics Foundation **Fellowship** to participate in “4<sup>th</sup> Course on Genetic Counseling in Practice”, Bologna, Italy.
- **1997 – 2001**, **Scholarship** awarded by Middle East Technical University due to my ranking in Matriculation Exam, Ankara, Turkey.
- **1997 – 2001**, **Scholarship** awarded by The Scientific and Technical Research Council of Turkey (TUBİTAK) – Scientist Education Group (BAYG) due to my ranking in Matriculation Exam, Ankara, Turkey.

**Academic Achievements and Awards**

- **2004**, Assistantship and full fellowship awarded by University of Illinois at Chicago for Doctorate of Science, Department of Chemistry, Chicago, IL.
- **2001**, Assistantship and full fellowship awarded by Bilkent University for Master of Science, Department of Molecular Biology and Genetics, Ankara, Turkey.
- **2000**, Seminars prepared upon request of Department of Pediatrics, Ege University, Faculty of Medicine, on “Medical Applications of Polymerase Chain Reaction”, and “Molecular Genetic Basis of Behavioral Genetics”, Izmir, Turkey.
- **1996**, **Mansion Award** in the Country-wide Biology Project Contest organized by The Scientific and Technical Research Council of Turkey (TUBİTAK) – Scientist Education Group (BAYG), Ankara, Turkey.
- **1995 – 1996 – 1997**, Membership of The Scientific and Technical Research Council of Turkey (TUBİTAK) – Scientist Education Group (BAYG), Country-wide Biology Olympics First and Second level examinations and Summer School, Izmir, Turkey.
- **Summer 1999, Summer 2000**, Summer practice in the Division of Genetics and Teratology, Faculty of Medicine, Ege University, Izmir, Turkey.
- **Summer 1998**, Volunteer summer practice in the Department of Medical Biology, 9 Eylül University, Izmir, Turkey.