

**Çağla Sönmez, Ph.D.****Professor**

Atılım University

Faculty of Medicine

06830 İncek, Gölbaşı, Ankara/TURKEY

cagla.sonmez@atilim.edu.tr

Tel: +90 312 586 61 48

**PERSONAL**

|                       |            |
|-----------------------|------------|
| <b>Date of Birth</b>  | 29.06.1978 |
| <b>Place of Birth</b> | Kayseri    |

**EDUCATION**

|           |                                                             |
|-----------|-------------------------------------------------------------|
| 2002-2008 | Purdue University, Genetics, Ph.D.                          |
| 1999-2001 | Middle East Technical University, Biotechnology, M.S.       |
| 1995-1999 | Middle East Technical University, Biological Sciences, B.S. |

**ACADEMIC POSITIONS**

|                                        |                                                                                                                     |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>May 2024-</b>                       | Professor, Faculty of Medicine,<br>Atılım University, Turkey                                                        |
| <b>October 2018-<br/>November 2023</b> | Assoc. Prof., Department of Molecular Biology and Genetics<br>Konya Food and Agriculture University, Turkey         |
| <b>November 2015-<br/>October 2018</b> | Assistant Prof., Department of Molecular Biology and Genetics<br>Konya Food and Agriculture University, Turkey      |
| <b>December 2012-<br/>January 2015</b> | Sr Research Fellow, Department of Biology<br>Middle East Technical University, Turkey                               |
| <b>May 2009-January<br/>2012</b>       | Postdoctoral Research Associate, Department of Cell and Development<br>Biology<br>John Innes Centre, United Kingdom |
| <b>August 2002-<br/>August 2008</b>    | Graduate Research Assistant, Department of Agronomy, Purdue University,<br>USA                                      |
| <b>November 1999-<br/>July 2002</b>    | Graduate Research Assistant, Biotechnology Program,<br>Middle East Technical University, Turkey                     |

**ADMINISTRATIVE DUTIES**

|                  |                                                                         |
|------------------|-------------------------------------------------------------------------|
| <b>2024-</b>     | Faculty Executive Board Member, Atılım University                       |
| <b>2018-2023</b> | Faculty Executive Board Member, Konya Food and Agriculture University   |
| <b>2020-2023</b> | Research Grants Committee Member, Konya Food and Agriculture University |

## HONORS&AWARDS

|   |                                                                                       |
|---|---------------------------------------------------------------------------------------|
| 1 | 2022 TUBITAK 2224-B Travel Grant for National Conferences                             |
| 2 | 2012 TUBITAK BİDEB 2232 International Incoming Postdoctoral Research Fellowship       |
| 3 | 2007 Purdue University Life Sciences education (PULSe) program Travel Award           |
| 4 | 1999 Honor's list Middle East Technical University, Department of Biological Sciences |

## RESEARCH INTERESTS

|   |                                |
|---|--------------------------------|
| 1 | Molecular Biology and Genetics |
| 2 | Epigenetics                    |

## PROFESSIONAL SERVICE

|   |                                                                                                                    |
|---|--------------------------------------------------------------------------------------------------------------------|
| 1 | Guest Editor, Turkish Journal of Biology                                                                           |
| 2 | Reviewer; Food Research International, Process Biochemistry, Turkish Journal of Botany, Turkish Journal of Biology |
| 3 | Panel member on numerous TUBITAK ARDEB and TEYDEB project proposals                                                |

## PUBLICATIONS

|   |                                                                                                                                                                                                                                                                                          |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | İrem Çağlı, Büşra Elif Kıvrak, Osman Altunbaş, Çağla Sönmez* (2025) Unveiling the Impact of Vernalization on Seed Oil Content and Fatty Acid Composition in Rapeseed Through Simulated Shorter Winters. Journal of Agronomy and Crop Science 211 (3), e70057 * Corresponding Author      |
| 2 | Onur Bulut, Çağla Sönmez*, Hüseyin Avni Öktem (2024) Antioxidant activity of Micractinium sp.(Chlorophyta) extracts against H2O2 induced oxidative stress in human breast adenocarcinoma cells Scientific Reports                                                                        |
| 3 | Onur Bulut, Çağla Sönmez*, Hüseyin Avni Öktem (2023) Hindakia tetrachotoma ME03 (Chlorophyta) has high phenolic content, antioxidant capacity, and attenuates H2O2-induced oxidative stress and apoptosis in human cells. Phycologia 1-10; *Corresponding Author                         |
| 4 | Dilan Akin, Çağla Sönmez*, Meral Yücel, Hüseyin A. Öktem (2023) Establishment of stable genetic transformation conditions for novel thermotolerant Scenedesmus sp. (Chlorophyta), Turkish Journal of Fisheries and Aquatic Sciences 23(11), TRJFAS23044; * Corresponding Author          |
| 5 | Onur Bulut, Dilan Akin, Çağla Sönmez, Ayşegül Öktem, Meral Yücel, Hüseyin Avni Öktem (2019) Phenolic compounds, carotenoids, and antioxidant capacities of a thermo-tolerant Scenedesmus sp. (Chlorophyta) extracted with different solvents. Journal of Applied Phycology 31: 1675-1683 |
| 6 | Çağla Sönmez, Evrim Elçin, Dilan Akin, Hüseyin Avni Öktem, Meral Yücel (2016) Evaluation of novel thermo-resistant Micractinium and Scenedesmus sp. for efficient biomass and lipid production under different temperature and nutrient regimes. Bioresource Technology 211: 422-428     |
| 7 | Melih Onay, Çağla Sönmez, Hüseyin A Öktem, Meral Yücel (2016) Evaluation of Various Extraction Techniques for Efficient Lipid Recovery from Thermo-Resistant Microalgae, Hindakia, Scenedesmus and Micractinium Species. American Journal of Analytical Chemistry 7: 141-150             |
| 8 | Melih Onay, Çağla Sönmez, Hüseyin Avni Öktem, Meral Yücel (2014) Thermo-resistant green microalgae for effective biodiesel production: Isolation and characterization of unialgal species from geothermal flora of Central Anatolia. Bioresource Technology 169: 62-71                   |

|    |                                                                                                                                                                                                                                                                                                                                                   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9  | Çağla Sönmez, İbrahim Halil Elekcioğlu, Ayşe Meral Yücel, Hüseyin Avni Öktem (2014) Transgenic <i>Nicotiana tabacum</i> cultivar Samsun plants carrying the wild sugar beet Hs1pro1 gene have resistance to root knot nematodes. Turkish Journal of Biology 38(2):200-207                                                                         |
| 10 | Pedro Crevillen, Çağla Sönmez, Zhe Wu, Caroline Dean. (2013) A gene loop containing the floral repressor FLC is disrupted in the early phase of vernalization. EMBO Journal 32:140-148                                                                                                                                                            |
| 11 | Çağla Sönmez and Caroline Dean. (2012) Transcription beyond borders has downstream consequences. RNA Biology 9(2):143-147                                                                                                                                                                                                                         |
| 12 | Çağla Sönmez *, Isabel Bäurle, Andreas Magusin, Rene Dreos, Sascha Laubinger, Detlef Weigel, Caroline Dean*. (2011) RNA 3' processing functions of Arabidopsis FCA and FPA limit intergenic transcription Proceedings of the National Academy of Sciences USA (PNAS) 108(20):8508-13 *Corresponding authors                                       |
| 13 | Wanda M. Waterworth*, Çağla Altun*, Susan J. Armstrong, Nicola Roberts, Philip J. Dean, Kim Young, Clifford F. Weil, Clifford M. Bray, Christopher E. West (2007) NBS1 is involved in DNA repair and plays a synergistic role with ATM in mediating meiotic homologous recombination in plants. The Plant Journal 52 (1):41–52. *Co-first authors |

## PROJECTS

|    |                                                                                                                                                                                                                                                                                       |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | "Investigation of the Epigenetic Regulation of Genes Involved in Seed Fatty Acid Synthesis after Heat Stress Using a Systems Biology Approach" TUBITAK-COST Actions, Principal Investigator (2023-2025)                                                                               |
| 2  | "Introduction of Wild and Industrial <i>Chicorium intybus</i> L. Plants into Tissue Culture and Determination of Their Antioxidant Activities". TUBITAK 2209-A Program, Advisor (2023)                                                                                                |
| 3  | "The Effects of Planting a Summer Rapeseed ( <i>Brassica napus</i> L.) Variety at Different Sowing Times on Oil Quality and the Expression Level of the FAD2 Gene Associated with Oleic Acid". TUBITAK 2209-A Program, Advisor (2021)                                                 |
| 4  | "Effects of different vernalization models on plant growth, seed oil amount and the expression levels of some genes related to vernalization and fatty acid biosynthesis in rapeseed ( <i>Brassica napus</i> L.) cultivars". TUBITAK 1002 Project, Principal Investigator (2020-2021) |
| 5  | "Effects of nutrient deprivation on fatty acid composition of thermo-tolerant green microalgae" <i>Scenedesmus</i> sp. Konya Food and Agriculture University BAP Principle Investigator (2019-2020)                                                                                   |
| 6  | "Investigation of the Effects of Epigenetic Mutants on Fatty Acid Composition in <i>Arabidopsis thaliana</i> " Konya Food and Agriculture University BAP. Principle Investigator (2017-2019)                                                                                          |
| 7  | "Establishment of a Microalgal Based Recombinant Protein Expression Platform" TUBITAK 1001 Project, Researcher (2015-2018)                                                                                                                                                            |
| 8  | "Development of Renewable Bioenergy Production Technologies", METU Rectorate Research Capacity Development Project, Researcher (2014-2016)                                                                                                                                            |
| 9  | "Optimization of Heterotrophic Growth Conditions of Microalgae Using Agricultural Waste" METU Interdisciplinary Research Project, Researcher (2014-2015)                                                                                                                              |
| 10 | "Genetic Modifications for Increased Biodiesel Production in Microalgae" TUBITAK 2232 Research Fellow (2012-2014)                                                                                                                                                                     |
| 11 | "AENEAS: Acquired Environmental Epigenetics Advances: from <i>Arabidopsis</i> to maize" European Union Framework 7 Project, Researcher (2009-2012)                                                                                                                                    |

## CONFERENCE PRESENTATIONS

|    |                                                                                                                                                                                                                                                                                                                                                                                             |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | İrem Çağlı*, Aylin Gazdağlı Talay, Mine Berrak Halik, Fatma Tunalı, Çağla Sönmez “Intergenerational Effects of Sequential Cold and Heat Stresses in Rapeseed ( <i>Brassica napus</i> L.)” 23 <sup>rd</sup> Biotechnology Congress, Ankara, Türkiye (2025) *Oral Presentation                                                                                                                |
| 2  | Mine Berrak Halik*, Aylin Gazdağlı Talay, Büşra Karaduman, Çağla Sönmez “Epigenetic Regulation of Genes Involved in Seed Fatty Acid Synthesis Upon Heat Stress” 23 <sup>rd</sup> Biotechnology Congress, Ankara, Türkiye (2025) *Oral Presentation                                                                                                                                          |
| 3  | İrem Çağlı*, Büşra Elif Kıvrak, Çağla Sönmez “Investigation of the change in seed fatty acid composition of rapeseed ( <i>Brassica napus</i> L.) under the vernalization models” 11 <sup>th</sup> National Botany Congress, Amasya Türkiye (2024) *Oral Presentation                                                                                                                        |
| 4  | Çağla Sönmez*, Aylin Gazdağlı Talay, Büşra Karaduman, Büşra Aydın “Epigenetic Regulation of Genes Involved in Seed Fatty Acid Synthesis Upon Heat Stress” 11 <sup>th</sup> National Botany Congress, Amasya Türkiye (2024) *Oral Presentation                                                                                                                                               |
| 5  | İrem Çağlı*, Büşra Elif Kıvrak, Çağla Sönmez “Investigation of the change in seed fatty acid composition of rapeseed ( <i>Brassica napus</i> L.) under the vernalization models” 22 <sup>nd</sup> Biotechnology Congress, Ankara, Türkiye (2023), *Oral Presentation                                                                                                                        |
| 6  | Çağla Sönmez*, İrem Çağlı, Büşra Elif Kıvrak “The Effects of Different Vernalization Models on Plant Growth, Seed Oil Content and Expression Levels of Some Genes Related to Vernalization and Fatty Acid Biosynthesis in Rapeseed ( <i>Brassica napus</i> L.)” 3 <sup>rd</sup> International Plant Biology Congress, Rize Türkiye (2022), *Oral Presentation                               |
| 7  | Çağla Sönmez, Büşra Karaduman “Epigenetic regulation of genes involved in Arabidopsis seed fatty acid synthesis upon heat stress” International Conference on Arabidopsis Research Belfast, Northern Ireland (2022), Poster                                                                                                                                                                 |
| 8  | Dilan Akın, Çağla Sönmez, Meral Yücel, Hüseyin A. Öktem “Stable genetic transformation of local novel microalgal strain <i>Scenedesmus</i> sp. ME02” 20 <sup>th</sup> Biotechnology Congress, Ankara, Türkiye (2019), Poster                                                                                                                                                                |
| 9  | Çağla Sönmez*, Fuquan Liu, Caroline Dean “Transcription beyond borders has downstream consequences” 41. FEBS Congress, Kuşadası, Türkiye (2016), *Oral Presentation                                                                                                                                                                                                                         |
| 10 | Çağla Sönmez, Evrim Elcin, Dilan Akın, Melih Onay, Huseyin Avni Oktem, Meral Yucel “Detailed Analysis of novel thermo-resistant microalgae strains isolated from thermal springs of Central Anatolia for efficient biodiesel production under different temperature and nutrient regimes” 18 <sup>th</sup> Biotechnology Congress, Konya, Turkey (2015) Oral Presentation                   |
| 11 | Çağla Sönmez, Evrim Elcin, Dilan Akın, Farhad Taghipour, Melih Onay, Huseyin Avni Oktem, Meral Yucel “Evaluation of novel thermo-resistant microalgae strains isolated from thermal springs of Central Anatolia for efficient biodiesel production under different temperature and nutrient regimes” 1 <sup>st</sup> Turkish Congress of One Health, Konya, Turkey (2015) Oral Presentation |
| 12 | Melih Onay, Çağla Sönmez, Huseyin A. Oktem, Meral Yucel “Thermo-resistant microalgae for biodiesel production” FEBS-EMBO Conference, Paris, France (2014) Poster                                                                                                                                                                                                                            |
| 13 | Çağla Sönmez and Caroline Dean. Fourth Annual AENEAS Meeting Norwich, UK (2012) Oral Presentation                                                                                                                                                                                                                                                                                           |
| 14 | Cagla Altun Sonmez, Isabel Bäurle, Andreas Magusin, Rene Dreos, Sascha Laubinger, Detlef Weigel, Caroline Dean. “RNA 3' processing functions of Arabidopsis FCA and FPA limit intergenic transcription.” Abcam Non-coding RNA, Epigenetic Memory, and the Environment Meeting, London, UK (2011) Poster                                                                                     |

|           |                                                                                                                                                                                                                                                                     |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>15</b> | Cagla Altun Sonmez and Caroline Dean AENEAS Mid-term Meeting Tuebingen Germany (2011) Oral Presentation                                                                                                                                                             |
| <b>16</b> | Cagla Altun, Fuquan Liu, Caroline Dean "Co-transcriptional RNA processing linked to chromatin modifications" Plant and Animal Genomes XIX Conference, San Diego, California (2011) Oral Presentation by C. Dean                                                     |
| <b>17</b> | Cagla Altun, Fuquan Liu, Caroline Dean "Noncoding RNA and Chromatin" Annual Science Meeting John Innes Centre, Norwich, UK (2010) Oral Presentation                                                                                                                 |
| <b>18</b> | Cagla Altun, AENEAS Second Annual Meeting Geneva Switzerland (2010) Oral Presentation                                                                                                                                                                               |
| <b>19</b> | Cagla Altun, Anne Sylvester, Clifford Weil "Maize has two Mre11 genes: one is novel and both appear to be developmentally regulated." Joint annual Meeting of the American Society of Plant Biologists/Sociedad-Mexicana-de Bioquimica Merida, Mexico (2008) Poster |
| <b>20</b> | Cagla Altun, Anne Sylvester, Clifford Weil "The Maize Mre11/Rad50/Nbs1 DNA repair and recombination complex" 50th Annual Maize Genetics Conference Washington D.C. (2008) Poster                                                                                    |
| <b>21</b> | Cagla Altun, Kimberly Young, Clifford Weil "The Maize Mre11/Rad50/Nbs1 DNA repair and recombination complex" 49th Annual Maize Genetics Conference St. Charles, IL. (2007) Poster                                                                                   |
| <b>22</b> | Cagla Altun, Kimberly Young, Clifford Weil "The Maize Mre11/Rad50/Nbs1 DNA repair and recombination complex" American Society of Plant Biologists (ASPB) Plant Biology Meeting Boston, MA. (2006) Poster                                                            |
| <b>23</b> | Cagla Altun, Kimberly Young, Clifford Weil "The Maize Mre11/Rad50/Nbs1 DNA repair and recombination complex" 48th Annual Maize Genetics Conference Pacific Grove, CA. (2006) Poster                                                                                 |
| <b>24</b> | Cagla Altun, Jane Dorweiler, and Clifford Weil "Characterization of Maize Mre11 Genes" 47th Annual Maize Genetics Conference Lake Geneva, WI. (2005) Poster                                                                                                         |
| <b>25</b> | Cagla Altun, Jane Dorweiler, and Clifford Weil "Characterization of Maize Mre11 Genes" American Society for Microbiology Conference on DNA repair and Mutagenesis Southampton, Bermuda (2004) Poster                                                                |
| <b>26</b> | Cagla Altun, Bob Meeley, Pramod Mahajan, and Clifford Weil "A New Twist on DNA Repair: Characterization of the Maize Mre11 Gene(s)" 46th Annual Maize Genetics Conference Mexico City, Mexico. (2004) Oral Presentation                                             |
| <b>27</b> | Cagla Altun, Pramod Mahajan, Ana Saballos, Joanna Friesner, Kelly Marshall, Andrew Zundo, Anne Britt, James Haber, and Clifford Weil "DNA Repair Genes and Ac/Ds Transposition" 45th Annual Maize Genetics Conference Lake Geneva, WI. (2003) Poster                |
| <b>28</b> | Cagla Altun, Halil Elekcioglu, and Huseyin Avni Oktem "Research studies in development of nematode resistant transgenic plants". 12th National Biotechnology Conference, Balikesir, Turkey. (2001) Oral Presentation                                                |

## CITATIONS

|                                                                 |     |
|-----------------------------------------------------------------|-----|
| Sum of times cited without self-citations (ISI Web of Science): | 444 |
| H-index (ISI Web of Science):                                   | 6   |

## COURSES GIVEN

|    |                                                              |
|----|--------------------------------------------------------------|
| 1  | MED101, MED103, MED105, MED202, MED302 committies            |
| 2  | Epigenetics, Undergraduate                                   |
| 3  | Plant Molecular Genetics, Undergraduate                      |
| 4  | Plant Molecular Genetics and Genomics, Graduate              |
| 5  | Molecular Biology of the Cell I, Undergraduate               |
| 6  | Genetics, Undergraduate                                      |
| 7  | Methods in Molecular Biology, Undergraduate                  |
| 8  | Concepts in Biology, Undergraduate                           |
| 9  | Plant Tissue Culture and Transformation Techniques, Graduate |
| 10 | Protein Biochemistry and Proteomics, Graduate                |

### THESES SUPERVISED

|   |                                                                                                                                                                                                                                                 |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | MS Thesis “Analysis of Changes in the Expression Levels of Genes Involved in Fatty Acid Synthesis in the Leaves and Seeds of Rapeseed ( <i>Brassica napus</i> L.) Varieties Exposed to Vernalization at Different Durations” (2023) İrem Çağlı. |
| 2 | MS Thesis “Epigenetic Investigation of the Impact of Temperature Stress on the Oil Content and Fatty Acid Composition of <i>Arabidopsis thaliana</i> Seeds” (2022) Büşra Karaduman.                                                             |
| 3 | MS Thesis “Evaluation and Improvement of <i>Scenedesmus</i> sp. METUNERGY1402 for Efficient Biomass and Biodiesel Production” (2017) Dilan Akın                                                                                                 |