

Assistant Professor Nazlıhan Aztopal

Education:

PhD in Biology (Molecular Biology). Uludag University, 2017

M.Sc. in Biology (Molecular Biology). Uludag University, 2013

Bachelor's Degree in Biology. Uludag University, 2010

Research Area:

Cancer Biology

Cancer Stem Cell

Cell death (apoptosis, necroptosis, autophagy)

Anti-cancer ,Drug Development

Cancer Epigenetics

Courses:

Biochemistry I

Biochemistry II

Cell Biology

Cancer Biology

History of Molecular Biology

Publications:

1. Akar, R. O., Selvi, S., Ulukaya, E., **Aztopal, N.** (2019). Key actors in cancer therapy: epigenetic modifiers. Turkish Journal of Biology, 43(3), 155-170.
2. Samli H., Samli M., Vatansever B., Ardicli S., **Aztopal N.**, Dincel D., Sahin A., Balci, F. Paclitaxel resistance and the role of miRNAs in prostate cancer cell lines. World journal of urology, 1-10. **2018.**
3. **Aztopal N.**, Erkisa M, Erturk E, Ulukaya E, Tokullugil AH, Ari F. Valproic acid, a histone deacetylase inhibitor, induces apoptosis in breast cancer stem cells. Chemico-biological interactions, 280, 51-58. **2018.**
4. Cevatemre B, Erkisa M, **Aztopal N.**, Karakas D, Alper,P, Tsimplouli C, Sereti E, Dimas K, Ikitimur Armutak EI, Gurel Gurevin E, Uvez A, Mori M, Berardozzi S, Ingallina C, D'Acquarica I, Botta B, Ozpolat B, Ulukaya E. A promising natural product, pristimerin, results in cytotoxicity against breast cancer stem cells in vitro and xenografts in vivo through apoptosis and an incomplete autophagy in breast cancer. Pharmacological research. **2018.**

5. Polat F, Dere E, Ari F, Turaclar N, Bingol G, **Aztopal N**. Effect of Aspartame on Acetylcholinesterase Activity in Some of Rat Tissues. Hacettepe J. Biol. & Chem., 45 (3), 321–327. **2017**.
6. Ari F, **Aztopal N**, Erkisa M, Celikler S, Sahin S, Ulukaya E. Nonapoptotic cell death induced by Hypericum species on cancer cells. The European Research Journal, 3(1):1-10. **2017**.
7. **Aztopal N**, Karakas D, Cevatemre B, Ari F, Iysel C, Daidone MG, Ulukaya E. A trans-platinum (II) complex induces apoptosis in cancer stem cells of breast cancer. Bioorganic & Medicinal Chemistry, 25(1): 269-276. **2017**.
8. Turaclar N, Polat P, Dere E, Bingol G, Ari F, **Aztopal N**. The Effect of Aspartame on the Activity of Glutathione S-Transferase in Tissues of Brain, Liver, Kidney and Lung of Rats. International Invention Journal of Medicine and Medical Sciences. 3: 130-135. **2016**.
9. **Aztopal N**, Cevatemre B, Sarimahmut M, Ari F, Dere E, Ozel MZ, Firat M, Ulukaya E. Pelargonium quercetorum Agnew induces apoptosis without PARP or cytokeratin 18 cleavage in non-small cell lung cancer cell lines. Oncology Letters. 12: 1429-1437. **2016**. doi:10.3892/ol.2016.4779.
10. Yilmaz VT, Iysel C, Suyunova F, Aygun M, **Aztopal N**, Ulukaya E. Ni(II)/Cu(II)/Zn(II) 5,5-diethylbarbiturate complexes with 1,10-phenantroline and 2,2'-dipyridylamine: Synthesis, structures, DNA/BSA binding, nuclease activity, molecular docking, cellular uptake, cytotoxicity and the mode of cell death. Dalton Transactions. 45:10466-10479. **2016**. doi:10.1039/C6DT01726F.
11. **Aztopal N**, Erkisa M, Celikler S, Ulukaya E, Ari F. Anti-growth and apoptosis inducing effects of Hypericum olympicum L. and Hypericum adenotrichum Spach. on lung cancer cells in vitro: Involvement of DNA damage. Journal of Food Biochemistry. **2016**. doi:10.1111/jfbc.12248.
12. *Karakas D, *Cevatemre B, **Aztopal N**, Ari F, Yilmaz VT, Ulukaya E. Addition of Niclosamide to Palladium (II) Saccharinate Complex of Terpyridine Results in Enhanced Cytotoxic Activity Inducing Apoptosis on Cancer Stem Cells of Breast Cancer. Bioorganic & Medicinal Chemistry. **2015**. doi:10.1016/j.bmc.2015.07.026 (*equal contribution).
13. Çelikler Kasımoğulları S, Oran S, Ari F, Ulukaya E, **Aztopal N**, Sarimahmut M, Ozturk S. Genotoxic, cytotoxic, and apoptotic effects of crude extract of Usnea filipendula Stirt. in vitro. Turkish Journal of Biology. 38:940-947. **2014**. doi:10.3906/biy-1405-23.
14. Ari F, Cevatemre B, İkitimur IE, **Aztopal N**, Yilmaz VT, Ulukaya E. Apoptosis-Inducing Effect of A Palladium (II) Saccharinate Complex of Terpyridine on Human Breast Cancer Cells in vitro and in vivo. Bioorganic & Medicinal Chemistry. 22(17):4948-1954. **2014**.
15. Ari F, **Aztopal N**, Oran S, Bozdemir S, Celikler S, Ozturk S, Ulukaya E. Parmelia sulcata Taylor and Usnea filipendula Stirt. Induce Apoptosis-Like Cell Death and DNA Damage in Cancer Cells. Cell Proliferation. 47(5):457-464. **2014**.

16. Ari F, **Aztopal N**, Icel C, Yilmaz VT, Guney E, Buyukgungor O, Ulukaya E. Synthesis, structural characterization and cell death-inducing effect of novel palladium (II) and platinum (II) saccharinate complexes with 2-(hydroxymethyl) pyridine and 2-(2-hydroxyethyl) pyridine on cancer cells in vitro. Bioorganic & medicinal chemistry. 21(21): 6427-6434. **2013.**

Book Chapter:

Cevatemre B, Aztopal N, Ulukaya E. (2018). Kanser Moleküler Biyolojisi (Cancer Molecular Biology), Kanser Kök Hücreleri (Cancer Stem Cells), Baran, Y. (Ed), Kısayol Yayıncılık, Ankara, Turkey.

Presentations

Assertions presented in international scientific congresses and published in the proceedings

Oral communications

Ulukaya E, **Aztopal N**, Karakas D, Cevatemre B, Erkisa M, Aydinlik S, Yilmaz VT. (2016). Palladium (II)-Saccharinate Complex of Terpyridine Against the Cancer Stem Cells. 4th Workshop of COST Action CM1106. 10-11 March, Chioggia, Italy.

*Cevatemre B, *Karakas D, Sarimahmut M, Aydinlik S, **Aztopal N**, Icel C, Ulukaya E. (2015). Possible Cross-talk between Hedgehog, Wnt and Notch Pathways Following a Cytotoxic Treatment with Pd(II)-saccharinate complex of terpyridine. COST Action CM1106, Targeting Hedgehog Signaling in Cancer Stem Cells, Focused Joint Meeting for ESRs. 19-20 January, Barcelona, L19 (*equal contribution).

Ulukaya E, Karakas D, Ari F, **Aztopal N**, Ayhan CA, Yilmaz VT. (2014). Palladium (II)-saccharinate complex of terpyridine seems to be a promising novel compound for the treatment of lung cancer in vitro. 19th Congress of Asian Pacific Society of Respiriology. 13-16 November, Bali, Indonesia.

Poster communications

Aztopal N., Erkisa M., Ari F., Dere E., Ulukaya E. (2018, July). Dual inhibition of Wnt/beta-catenin signaling and histone deacetylation as a new strategy to eliminate breast cancer stem cells by augmentation of apoptosis. In FEBS OPEN BIO (Vol. 8, pp. 301-301). 111 RIVER ST, HOBOKEN 07030-5774, NJ USA: WILEY.

Ulukaya E, Baykal AT, Acilan C, **Aztopal N**, Karakas D, Ari F, Yilmaz VT. (2016). Proteomic Analysis of the Palladium(II) Saccharinate Complex of Terpyridine in breast cancer stem cells. 4th International Bahçeşehir University (BAU) Drug Design Congress, 13-15 October, Istanbul, Turkey, PP-39.

Aydinlik S*, Erkisa M*, Cevatemre B, Ari F, Yilmaz VT, Ulukaya E, **Aztopal N**. (2016). Targeting Cancer Stem Cells by Inhibiting WNT Pathway: Combination of Pd (II) Complex and Niclosamide. First Training School of COST Action CM1407” In vitro evaluation of compounds with anticancer potential”, 24-26 September, Belgrade, Serbia, P1 (*equal contribution).

Aztopal N, Karakas D, Ari F, Icel C, Ulukaya E. (2016). Trans-dichloridoplatinum (II) complex induces apoptosis in cancer stem-cell enriched mammospheres. FEBS J, 283: P-05.03.3-014, September, doi:10.1111/febs.13808.

Samli M, Samli H, Vatansever B, **Aztopal N**, Dincel D, Sahin A, Balci F. (2016). Effect of Paclitaxel on miRNA expression in prostate cancer. 13. International Congress of Human Genetics. 03-07 April, Kyoto, Japan, P21.

Samli H, Samli M, **Aztopal N**, Vatansever B, Sigva O, Dincel D, Gunduz C. (2016). Cytotoxic effects of Palladium (II) Complex on Prostate Cancer Cells. 13. International Congress of Human Genetics. 03-07 April, Kyoto, Japan, P12.

Erkisa M, Aydinlik S, Cevatemre B, **Aztopal N**, Ari F, Yilmaz VT, Ulukaya E. (2015). Autophagy inhibition by chloroquine enhances Cytotoxicity of palladium-II-barbiturate complex in prostate cancer. The Second Congress of the Serbian Association for Cancer Research (SDIR): Cancer research: perspectives and application. 02 - 03 October, Belgrade, Serbia, p.98-99.

Karakas D, Cevatemre B, **Aztopal N**, Yilmaz VT, Ulukaya E. (2015). Mammospheres (Cancer Stem Cell-Enriched Population) in Breast Cancer Show Resistance Against A Palladium (II)-Saccharinate Complex of Terpyridine. COST CM1106 Working Group Meeting. 26-27 March, Athens, Greece, P32.

***Aztopal N**, *Erkisa M, Icel C, Yilmaz VT, Ulukaya E. (2015). One molecule with two faces: solvent dependent activity of the Pd (II) complex determines the form of the function, death or alive? 3rd EACR-Sponsored Anticancer Agent Development Congress. 18-19 May, Izmir, Turkey (*equal contribution).

Aztopal N, Yilmaz Y, Cevatemre B, Sarimahmut M, Ari F, Dere E, Firat M, Ulukaya E. (2014). Activity of Pelargonium quercetorum Agnew by inducing apoptosis-like cell death on non-small cell lung cancer cell lines. 19th Congress of Asian Pacific Society of Respiriology. 13-16 November, Bali, Indonesia, 19(3), p.162.

Karakas D, **Aztopal N**, Cevatemre B, Ari F, Yilmaztepe Oral A, Yilmaz VT, Ulukaya E. (2014). Breast cancer stem cells are more resistant than parental cells to a novel Pd (II) saccharinate complex. 23rd Biennial Congress of the European Association for Cancer Research. 5-8 July, Munich, Germany, 50(5), p.74.

Sarimahmut M, Celikler S, Ari F, Oran S, **Aztopal N**, Ozturk S, Ulukaya E. (2014). Apoptosis Inducing Effects of Usnea filipendula Stirt. in breast cancer cells in vitro. 23rd Biennial Congress of the European Association for Cancer Research. 5-8 July, Munich, Germany, 50(5), p.60.

Ari F, Cevatemre B, Ilkay Iktumur E, **Aztopal N**, Yilmaz VT, Ulukaya E. (2014). Initial mechanism insights of potential anti-cancer agent, Palladium (II) saccharinate complex of terpyridine. EACR-Sponsored 2nd Anticancer Agents Congress & 5th Multidisciplinary Cancer Research Congress's. 23-27 April, Mugla, Turkey, p.93.

*Karakas D, *Cevatemre B, **Aztopal N**, Ari F, Yilmaz VT, Ulukaya E. (2014). An effective novel approach for treatment of breast cancer: combination of Pd (II) complex and niclosamide. EACR-Sponsored 2nd Anticancer Agents Congress & 5th Multidisciplinary Cancer Research Congress's. 23-27 April, Mugla, Turkey, p.90 (*equal contribution).

Aztopal N, Karakas D, Ari F, Yilmaz VT, Ulukaya E. (2014). Investigation of cytotoxic/apoptotic effects of a novel synthesized platinum (II) complex [Pt(hepy)₂Cl₂] on human breast cancer stem cells in vitro. Chemical Approaches to Targeting Drug Resistance in Cancer Stem Cells. 2nd Working Group Meeting, CM1106, 27-28 March, Budapest, Hungary, P30.

Ulukaya E, Sarimahmut M, Cevatemre B, **Aztopal N**, Debrelı Coskun M, Ari F. (2012). Investigation of the Apoptotic/Cytotoxic Effects of Combination of TRAIL with Fenretinide in Breast Cancer Cell Lines. The First Scientific Meeting of the Serbian Association for Cancer Research. 29-30 November, Belgrade, p.74.

Assertions presented in national scientific congresses and published in the proceedings

Oral communication:

Samli H, Vatansever B, Samli M, **Aztopal N**, Yilmaz VT, Dinçel D. (2017). Palladium (II) complex and microRNA expression in prostate cancer. XV. National congress of medical biology and genetics, 26-29 October, Ölüdeniz, Fethiye, Turkey.

Aztopal N, Erkisa M, Ari F, Dere E, Ulukaya E. (2017). Induction of apoptosis by the Wnt and HDAC inhibition in Breast Cancer Stem Cells, Istinye University, Molecular Cancer Seminar, 25-26 March, Istanbul, Turkey.

Cevatemre B, Erkisa M, **Aztopal N**, Karakaş D, Alper P, Tsimplouli C, Sereti E, Dimas K, Ikitimur Armutak EI, Gurel Gurevin E, Uvez A, Mori M, Berardozi S, Ingallina C, Botta B, Ulukaya E. (2016). The Plant-Derived Triterpenoid Pristimerin is a Potent Anticancer Agent due to its Cytotoxic activity on Breast Cancer in vitro and in vivo. 6. Multidisciplinary Cancer Research Congress, 27-30 October, Konya, Turkey, S-005.

Yilmaztepe Oral A, Cevatemre B, Karakas D, **Aztopal N**, Ulukaya E. (2016). Cytotoxic Synergy Between Tingenin B and Paclitaxel Against Breast Cancer Stem Cells: Induction of Mitochondria Dependent Apoptosis. 6. Multidisciplinary Cancer Research Congress, 27-30 October, Konya, Turkey, S-004.

Samli H, Vatansever B, **Aztopal N**, Dinçel D, Şahin A, Balcı F. (2015). Effects of paclitaxel on microRNA expression in prostate cancer. XIV. National congress of medical biology and genetics. 27-30 September, Ölüdeniz, Fethiye, Turkey, SS-01 07.

Ulukaya E, Karakaş D, Cevatemre B, **Aztopal N**, Ari F, Yılmaz VT. (2015). Palladyum (II) kompleksi ve niklozamid kombinasyonunun meme kanseri kanser kök hücreleri üzerindeki in vitro güçlü sitotoksik /apoptotik etkileri. 21.National Cancer Congress. 22-26 April, Antalya, Turkey, S70.

Poster communications

Aztopal N, Erkisa M, Arı F, Dere E, Ulukaya E. (2018). Wnt sinyali ve histon deasetilasyonunun ikili inhibisyonu ile meme kanseri kök hücrelerinin hedeflenmesi. 29. Ulusal Biyokimya Kongresi, 26-30 Ekim 2018, Muğla, Türkiye.

Erkisa M, Ari F, Aydınlık S, Cevatemre B, **Aztopal N**, Yılmaz VT, Ulukaya E. (2016). Autophagy Inhibition enhances Palladium (II)-Barbiturate Complex -Induced Apoptosis in Prostate Cancer. 6. Multidisipliner Kanser Araştırma Kongresi, 27-30 Ekim, Konya, Türkiye, P-004.

Aztopal N, Karakas D, Cevatemre B, Ari F, Yılmaz VT, Ulukaya E. (2016). Inhibition of the WNT Signalling Pathway Sensitizes Breast Cancer Stem Cells to Pd(II) Complex-Induced Apoptosis. 6. Multidisipliner Kanser Araştırma Kongresi, 27-30 Ekim, Konya, Türkiye, P-005.

Aztopal N, Erkisa M, Ertürk E, Arı F, Ulukaya E. (2016). Targeting Epigenetic Regulation of Histones with Valproic Acid Leads to Apoptosis in Breast Cancer Stem Cells. 6. Multidisipliner Kanser Araştırma Kongresi, 27-30 Ekim, Konya, Türkiye, P-006.

Celikler S, Bozdemir S, Karakas D, Ari F, **Aztopal N**, Yılmaz VT, Ulukaya E. (2016). Genotoxic Activity of Palladium(II) Saccharinate Complex of Terpyridine on Breast Cancer Stem Cells. 6. Multidisipliner Kanser Araştırma Kongresi, 27-30 Ekim, Konya, Türkiye, P-008.

Cevatemre B, Erkisa M, **Aztopal N**, Karakaş D, Alper P, Tsimplouli C, Sereti E, Dimas K, İkitimur Armutak El, Gurel Gurevin E, Uvez A, Mori M, Berardozzi S, Ingallina C, Botta B, Ulukaya E. (2016). Pristimerin'in Meme Kanseri Hücreleri Üzerine in vitro ve in vivo Sitotoksik Etkisi. 14. İ.Ü. Onkoloji Enstitü Günleri Sempozyumu ve 7. İ.Ü. Onkoloji Enstitü Çalıştayı, 23-24 Aralık, İstanbul Üniversitesi Onkoloji Enstitüsü, İstanbul, Türkiye PS-1.

Aztopal N, Erkisa M, Arı F, Dere E, Ulukaya E. (2016). Wnt sinyal yolağı inhibisyonunda histon asetilasyonunun meme kanseri kök hücreleri üzerine olan etkisi. 14. İ.Ü. Onkoloji Enstitü Günleri Sempozyumu ve 7. İ.Ü. Onkoloji Enstitü Çalıştayı, 23-24 Aralık, İstanbul Üniversitesi Onkoloji Enstitüsü, İstanbul, Türkiye PS-6.

Alper P, Arı F, **Aztopal N**, Salomatina OV, Salakhutdinov NF, Ulukaya E. (2016). Glisiretinik Asit Türevi Olan Soloksolon Metil'in Meme Kanseri Hücreleri Üzerindeki

Sitotoksik ve Apoptotik Etkilerinin Araştırılması. 14. İ.Ü. Onkoloji Enstitü Günleri Sempozyumu ve 7. İ.Ü. Onkoloji Enstitü Çalıştayı, 23-24 Aralık, İstanbul Üniversitesi Onkoloji Enstitüsü, İstanbul, Türkiye PS-7.

***Aztopal N**, *Erkisa M, Arı F, Tokullugil A, Ulukaya E. (2016). Meme Kanseri Kanser Kök Hücrelerinde Histon Deasetilaz İnhibitörü Valproik Asid'in Sitotoksik/Apoptotik Etkileri. Uluslararası Katılımlı XVI Klinik Biyokimya Kongresi & IATDMCT Regional Meeting. 05-08 Mayıs, Kuşadası, Türkiye, P058 (*eşit katılım/equal contribution).

Şamlı H, Şamlı M, **Aztopal N**, Vatansever B, Doğan Şıgva ZÖ, Dinçel D, Gündüz C. (2015). Palladyum(II) Kompleksinin Prostat Kanseri Hücrelerindeki Sitotoksik Etkisi. 14. Ulusal Tıbbi Biyoloji ve Genetik Kongresi (Uluslararası Katılımlı). 27-30 Ekim, Ölüdeniz, Fethiye, PS-01 32.

Erkisa M, Aydınlık Ş, Cevatemre B, **Aztopal N**, Arı F, Yılmaz VT, Ulukaya E. (2015). Prostat kanserinde Palladyum(II) kompleksinin otofaji inhibisyonu ile artan sitotoksik etkisi. 27. Ulusal Biyokimya Kongresi. 3-6 Kasım, Antalya, P158.

Cevatemre B, Karakaş D, Sarımahmut M, **Aztopal N**, Yılmaz VT, Ulukaya E. (2015). Meme Kanseri Tedavisinde Ümit Vaat Edici Yeni Bir Yaklaşım: Palladyum (II) Kompleksi [PdCl(terpy)] (sac)·2H₂O ve Niklozamid Kombinasyonu. 3. İlaç kimyası, üretimi, teknolojisi, standardizasyonu kongresi. 20-22 Mart, Antalya, Türkiye, P306.

Aztopal N, Karakas D, Ari F, Yılmaz VT, Ulukaya E. (2014). Yeni sentezlenen Palladium komplekslerinin akciğer kanseri hücre soyu üzerine sitotoksik/apoptotik etkileri. EACR-sponsored 2nd Anticancer Agents Congress & V. Multidisipliner Kanser Araştırma Kongresi. 23-27 Nisan, Muğla, Türkiye, p.96.

Karakas D, **Aztopal N**, Ari F, Yılmaz VT, Ulukaya E. (2014). Palladium (II) komplekslerinin akciğer ve kolon kanseri hücre soyları üzerine sitotoksik/apoptotik etkileri. EACR-sponsored 2nd Anticancer Agents Congress & V. Multidisipliner Kanser Araştırma Kongresi. 23-27 Nisan, Muğla, Türkiye, p.91.

Aztopal N, Cevatemre B, Ari F, Yılmaz VT, Ulukaya E. (2013). Yeni Sentezlenen Palladyum Kompleksinin Meme Kanseri Hücre Soyları Üzerine Sitotoksik/Apoptotik Etkisi. XIII. Ulusal Tıbbi Biyoloji ve Genetik Kongresi. 27-30 Ekim, Kuşadası, p.206-7.

Karakas D, Ari F, **Aztopal N**, Ayhan CA, Yılmaz VT, Ulukaya E. (2013). Palladyum (II) Bileşiği A549 Akciğer Kanseri Hücrelerinde Kaspaz 3/7 Üzerinden Apoptozisi Tetikler. XIII. Ulusal Tıbbi Biyoloji ve Genetik Kongresi. 27-30 Ekim, Kuşadası, p.187-88.

Aztopal N, Cevatemre B, Yilmaztepe Oral A, Dere E, Celikler S, Ulukaya E. (2012). Pelargonium quercetorum Ekstraktı Akciğer Kanseri Tedavisinde Yeni Bir Ümit Olabilir mi? 21. Ulusal Biyoloji Kongresi. 03-07 Eylül, İzmir, p.371-72.

Karakas D, Ari F, **Aztopal N**, Yilmaztepe Oral A, Sarimahmut M, Yilmaz VT, Ulukaya E. (2012). Yeni Sentezlenen Pd(II) Sakkarinat Komplekslerinin Antikanser Etkilerinin ve Mekanizmalarının Araştırılması. 21. Ulusal Biyoloji Kongresi. 03-07 Eylül, İzmir, p.370-71.

Ari F, Yilmaztepe Oral A, **Aztopal N**, Oran S, Ozturk S, Celikler S, Ulukaya E. (2012). Usnea filipendula Stirt.'in Farklı Kanser Hücreleri Üzerindeki Sitotoksik/Apoptotik Etkileri. IV. Multidisipliner Kanser Araştırma Kongresi. 13-16 Aralık, Bursa, P85.

Scientific Projects:

Project Coordinator in the project titled “Investigation the role of histone modifications in the regulation of Naked in lung cancer stem cells” that is supported by the TUBITAK (The Scientific and Technological Research Council of Turkey), 3001 Starting R&D Projects Support Program, for one year (2018-2019). Project No: 118Z268.

Co-investigator in the project titled “Synthesis and investigation of cytotoxic effect of novel Thiazolo [3,2-b] -1,2,4-triazol-6 (5H)-on derivatives” that is supported by the Unit of Hacettepe University Scientific Research Projects for one year (2018-2019).

Co-investigator in the project titled “Investigation the effects of exosomal microRNA-mediated communication between pancreatic cancer cells and neural cells on aggressive character of pancreatic cancer” that is supported by the TUBITAK, 3501 Career Development Program, for three years (2018-2021). Project No: 117Z955.

Co-investigator in the project titled “Development of a Gene-based Kit for the evaluation of Resistance / Responsiveness to Chemotherapeutic Drugs in Breast Cancer Patients” that is supported by the Unit of Uludag University Scientific Research Projects for two years (23 January 2017-2019). Project No: BUAP(T)-2016/4.

Co-investigator in the project titled “Investigation into the effect of Decitabine (5-Aza-2'-Deoksisitidin) as a demethylating agent on the level of gene methylation related with the signal transduction, apoptosis and DNA repair mechanisms on cancer stem cells of breast cancer” that is supported by the Unit of Uludag University Scientific Research Projects for two years (08 July 2015-2017). Project No: OUAP(F)-2015/15.

Co-investigator in the project titled “Investigation into the effect of histone deacetylase inhibitor Valproic acid on the level of gene methylation related with the signal transduction, apoptosis and DNA repair mechanisms on cancer stem cells of breast cancer” that is supported by the Unit of Uludag University Scientific Research Projects for two years (18 March 2015-2017). Project No: KUAP(T)-2015/6.

Scholarship student in the Project titled “A possible anti-cancer compound: Investigation of the cytotoxic/cytostatic effects and the mechanism(s) of a Palladium(II)-Terpy-Sac complex synthesized by Uludag University on breast cancer stem cells” that is

supported by the TUBITAK (The Scientific and Technological Research Council of Turkey) for two years (01 October 2014-2016). Project No: 114Z269.

Scholarship student in the Project titled “Investigation into the cytotoxic and genotoxic effects of a novel palladium complex synthesized by Uludag University and its combinations with stem cell survival pathway inhibitors on breast cancer stem cells and the mechanism(s) of it at the level of gene and protein” that is supported by the TUBITAK (The Scientific and Technological Research Council of Turkey) for two years (01 May 2013-01.11.2015). Project No: 212T147.

Co-investigator in the project titled “Investigation into the cytotoxic activity of Pelargonium quercetorum against lung cancer cell lines” that is supported by the Unit of Uludag University Scientific Research Projects for one year (22 February 2012-31 December 2013). Project No: UAP(F)-2012.

National Invited Talks:

Cancer Stem Cell. Basic Information on Cancer and Stem Cells, Innovative Approaches, MUKKAM Conference Week, Maltepe University Cancer and Stem Cell Research Center 1-5 April 2019, Istanbul.

Growth rate. Cytotoxicity and Cell Death Workshop. 29th National Biochemistry Congress. 26 October 2018, Muğla, Turkey.

Apoptosis Inducing Effect of Trans-Platinum (II) Complex on Cancer-Stem Cells. II. Current Approaches in Stem Cell-Based Therapy Workshop. 09 December 2016, Kultur University, Istanbul, Turkey.

Awards, Grants and Fellowships

Best Poster Award in 29th National Biochemistry Congress. 26-30 October 2018, Muğla, Turkey.

Young Scientist Forum (YSF) grant in 18th FEBS Young Scientists' Forum and the 43rd FEBS Congress (Biochemistry forever). 4 -12 July 2018, Prague, Czech Republic.

Young Researcher Scholarship in 6. Multidisciplinary Cancer Research Congress. 27-30 October 2016, Konya, Turkey.

3rd Best Poster Award in 6. Multidisciplinary Cancer Research Congress. 27-30 October 2016, Konya, Turkey.

Best Oral Presentation Award in 6. Multidisciplinary Cancer Research Congress. 27-30 October 2016, Konya, Turkey.

Trainee Scholarship in First Training School of COST Action CM1407, 24-26 September 2016, Belgrade University, Serbia.

Best Entrepreneurship Award in 5th R&D Week of Uludag University. "Gene-based kit development to predict the chemo-sensitivity/resistance in breast cancer patients" 15-16 March 2016, Bursa, Turkey.

Poster Award in 27th National Biochemistry Congress. 03-06 November 2015, Antalya, Turkey.

2nd Best Poster Award in the Second Congress of the Serbian Association for Cancer Research (SDIR): Cancer research: perspectives and application. 02-03 October 2015, Belgrade, Serbia.

Oral Presentation Award in 21st National Cancer Congress. 22 - 26 April 2015, Antalya, Turkey.

Best Poster Award in 4th R&D Week of Uludag University. 11-13 November 2014, Bursa, Turkey.

Best Poster Award in EACR-Sponsored 2nd Anticancer Agents Congress & 5th Multidisciplinary Cancer Research Congress's. 23rd-27th of April 2014, Mugla, Turkey.

Best Poster Award in R&D Week of Uludag University. 12-14 November 2013, Bursa, Turkey.