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ORCID

EDUCATION

Ph.D., Biology, Massachusetts Institute of Technology (MIT), Cambridge, MA	2008
B.A., Molecular Biology and Genetics, Cornell University, Ithaca, NY	2002

PROFESSIONAL EXPERIENCE

Professor, Koç University School of Medicine	2021-present
Associate Professor , Koç University School of Medicine	2018- 2021
Assistant Professor, Koç University School of Medicine	2012-2018
Postdoctoral Research Fellow, Harvard Medical School / Children's Hospital Boston	2008-2012

AWARDS AND HONORS

TUBITAK National Leader Researcher Award	2022
TUBITAK Teşvik Ödülü	2021
iBG Science Medal	2019
Sabri Ülker International Science Prize	2019
TUSEB Aziz Sancar Young Investigator Award	2018
Outstanding Faculty Award, Koc University	2018
Turkish Academy of Sciences (TUBA) Young Scientist Award	2015
Sedat Simavi Award in Health Sciences	2014
Elected member of the Science Academy Turkey (Bilim Akademisi)	2014

KEY FIGURES (*Web of Science*)

Number of publications:	52
Number of citations without self-citations (ISI):	9,531
H-index:	27

PUBLICATIONS (PEER-REVIEWED)

1. Kapahnke K, Plenge T, Klaus T, Gupta MK, Anand D, **Önder TT**, Perner B, Schnöder TM, Thol FR, Damm F, Heidel FH, Perner F. The histone-methyltransferase DOT1L cooperates with LSD1 to control cell division in blast-phase MPN. ***Leukemia***. 2025 Aug 8. doi: 10.1038/s41375-025-02719-y
2. Yedier-Bayram O, Cingöz A, Yilmaz E, Aksu AC, Esin B, Degirmenci N, Cavga AD, Dedeoğlu B, Cevatemre B, Syed H, Philpott M, Cribbs AP, Oppermann U, Lack NA, Acilan C, **Onder TT**, Bagci-Onder T. Chromatin-focused genetic and chemical screens identify BRPF1 as a targetable vulnerability in Taxol-resistant triple-negative breast cancer. ***Exp Mol Med***. 2025 Jun;57(6):1294-1307. doi: 10.1038/s12276-025-01466-5.
3. Akbari S, Ersoy N, Bagriyanik A, Arslan N, **Önder TT**, Erdal E. Generation of Functional Endodermal Hepatic Organoids***. J Vis Exp***. 2025 May 2;(219). doi: 10.3791/65027.
4. Gürhan G, Sevinç K, Aztekin C, Gayretli M, Yılmaz A, Yıldız AB, Ervatan EN, Morova T, Datlı E, Coleman OD, Kawamura A, Lack NA, Syed H, **Önder T**. A chromatin-focused CRISPR screen identifies USP22 as a barrier to somatic cell reprogramming. ***Commun Biol***. 2025 Mar 18;8(1):454. doi: 10.1038/s42003-025-07899-y. PMID: 40102626; PMCID: PMC11920211.

5. Gokbayrak B, Altintas UB, Lingadahalli S, Morova T, Huang CF, Ersoy Fazlioglu B, Pak Lok Yu I, Kalkan BM, Cejas P, Kung SHY, Fazli L, Kawamura A, Long HW, Acilan C, **Onder TT**, Bagci-Onder T, Lynch JT, Lack NA. Identification of selective SWI/SNF dependencies in enzalutamide-resistant prostate cancer. ***Commun Biol***. 2025 Feb 4;8(1):169. doi: 10.1038/s42003-024-07413-w. PMID: 39905188; PMCID: PMC11794516.
6. Ozyerli-Goknar E, Kala EY, Aksu AC, Bulut I, Cingöz A, Nizamuddin S, Biniossek M, Seker-Polat F, Morova T, Aztekin C, Kung SHY, Syed H, Tuncbag N, Gönen M, Philpott M, Cribbs AP, Acilan C, Lack NA, **Onder TT**, Timmers HTM, Bagci-Onder T. Epigenetic-focused CRISPR/Cas9 screen identifies (absent, small, or homeotic)2-like protein (ASH2L) as a regulator of glioblastoma cell survival. ***Cell Commun Signal***. 2023 Nov 16;21(1):328. doi: 10.1186/s12964-023-01335-6. PMID: 37974198; PMCID: PMC10652464.
7. Süer H, Erus S, Cesur EE, Yavuz Ö, Ağcaoğlu O, Bulutay P, **Önder TT**, Tanju S, Dilege Ş. Combination of CEACAM5, EpCAM and CK19 gene expressions in mediastinal lymph node micrometastasis is a prognostic factor for non-small cell lung cancer. ***J Cardiothorac Surg***. 2023 Jun 13;18(1):189. doi: 10.1186/s13019-023-02297-z. PMID: 37312199; PMCID: PMC10262366.
8. Sevinç K, Sevinç GG, Cavga AD, Philpott M, Kelekçi S, Can H, Cribbs AP, Yıldız AB, Yılmaz A, Ayar ES, Arabacı DH, Dunford JE, Ata D, Sigua LH, Qi J, Oppermann U, **Onder TT**. (2022) BRD9-containing non-canonical BAF complex maintains somatic cell transcriptome and acts as a barrier to human reprogramming. ***Stem Cell Reports.*** 17(12):2629-2642.
9. Yedier-Bayram O, Gokbayrak B, Kayabolen A, Aksu AC, Cavga AD, Cingöz A, Kala EY, Karabiyik G, Günsay R, Esin B, Morova T, Uyulur F, Syed H, Philpott M, Cribbs AP, Kung SHY, Lack NA, **Onder TT**, Bagci-Onder T. (2022) EPIKOL, a chromatin-focused CRISPR/Cas9-based screening platform, to identify cancer-specific epigenetic vulnerabilities. ***Cell Death Dis***. Aug 16;13(8):710.
10. Kelekçi S, Yıldız AB, Sevinç K, Çimen DU, **Önder T**. (2022) Perspectives on current models of Friedreich's ataxia***. Front Cell Dev Biol***. 2022 Aug 11;10:958398.
11. Zhang Y, Donaher JL, Das S, Li X, Reinhardt F, Krall JA, Lambert AW, Thiru P, Keys HR, Khan M, Hofree M, Wilson MM, Yedier-Bayram O, Lack NA, **Onder TT**, Bagci-Onder T, Tyler M, Tirosh I, Regev A, Lees JA, Weinberg RA. (2022) Genome-wide CRISPR screen identifies PRC2 and KMT2D-COMPASS as regulators of distinct EMT trajectories that contribute differentially to metastasis. ***Nat Cell Biol.*** 24(4):554-564. doi: 10.1038/s41556-022-00877-0.
12. Arabacı DH, Terzioğlu G, Bayırbaşı B, **Önder TT.** (2021) Going up the hill: chromatin-based barriers to epigenetic reprogramming. FEBS J. 2021 Aug;288(16):4798-4811. doi: 10.1111/febs.15628
13. Uğurlu-Çimen D, Odluyurt D, Sevinç K, Özkan-Küçük NE, Özçimen B, Demirtaş D, Enüstün E, Aztekin C, Philpott M, Oppermann U, Özlü N, **Önder TT.** (2021) AF10 (MLLT10) prevents somatic cell reprogramming through regulation of DOT1L-mediated H3K79 methylation. ***Epigenetics Chromatin.*** 14(1):32. doi: 10.1186/s13072-021-00406-7.
14. Kelekçi S, Uğurlu-Çimen D, Demir AB, Özçimen B, Burak Yıldız A, Batuhan Karakuş M, Börklü Yücel E, **Önder TT** (2021)**.** Generation of transgene-free iPSC lines from three patients with Friedreich's ataxia (FRDA) carrying GAA triplet expansions in the first intron of FXN gene. ***Stem Cell Res***. 2021 Jul;54:102438. doi: 10.1016/j.scr.2021.102438
15. Tu Z, Hou S, Zheng Y, Abuduli M, **Onder T**, Intlekofer AM, Karnoub AE (2021) In vivo library screening identifies the metabolic enzyme aldolase A as a promoter of metastatic lung colonization. ***iScience***. 24(5):102425.

16. Güney-Esken G, Erol ÖD, Pervin B, Gürhan Sevinç G, **Önder T**, Bilgiç E, Korkusuz P, Günel-Özcan A, Uçkan-Çetinkaya D, Aerts-Kaya F. (2021) Development, characterization, and hematopoietic differentiation of Griscelli syndrome type 2 induced pluripotent stem cells. ***Stem Cell Res Ther***. 12(1):287
17. Marsee A, Roos FJM, Verstegen MMA; **HPB Organoid Consortium**, Gehart H, de Koning E, Lemaigre F, Forbes SJ, Peng WC, Huch M, Takebe T, Vallier L, Clevers H, van der Laan LJW, Spee B. (2021) Building consensus on definition and nomenclature of hepatic, pancreatic, and biliary organoids. ***Cell Stem Cell***. 28(5):816-832.
18. Alici-Garipcan A, Özçimen B, Süder I, Ülker V, **Önder TT***, Özören N*. (2020) NLRP7 plays a functional role in regulating BMP4 signaling during differentiation of patient-derived trophoblasts. ***Cell Death Dis***. 11(8):658.
19. Bildik G, Akin N, Esmaeilian Y, Hela F, Yakin K, **Onder T**, Urman B, Oktem O. (2020) hCG Improves Luteal Function and Promotes Progesterone Output through the Activation of JNK Pathway in the Luteal Granulosa Cells of the Stimulated IVF Cycles. ***Biol Reprod***. 102(6):1270-1280.
20. Saraç H, Morova T, Pires E, McCullagh J, Kaplan A, Cingöz A, Bagci-Onder T, **Önder T**, Kawamura A, Lack NA. (2020) Systematic characterization of chromatin modifying enzymes identifies KDM3B as a critical regulator in castration resistant prostate cancer. ***Oncogene***. 39(10):2187-2201.
21. Akbari S*, Sevinç GG*, Ersoy N, Basak O, Kaplan K, Sevinç K, Ozel E, Sengun B, Enustun E, Ozcimen B, Bagriyanik A, Arslan N, **Önder TT***, Erdal E*. (2019) Robust, Long-Term Culture of Endoderm-Derived Hepatic Organoids for Disease Modeling. ***Stem Cell Reports***. 13(4):627-641.
22. Uretmen Kagiali ZC, Sanal E, Karayel Ö, Polat AN, Saatci Ö, Ersan PG, Trappe K, Renard BY, **Önder TT**, Tuncbag N, Şahin Ö, Ozlu N. (2019) Systems-level analysis reveals multiple modulators of epithelial-mesenchymal transition and identifies DNAJB4 and CD81 as novel metastasis inducers in breast cancer. ***Mol Cell Proteomics***. 18(9):1756-1771.
23. Ebrahimi A*, Sevinç K*, Sevinç GG, Cribbs AP, Philpott M, Uyulur F, Morova T, Dunford JE, Göklemez S, Arı Ş, Oppermann U*, **Onder TT***. (2019) Bromodomain inhibition of the coactivators CBP/EP300 facilitate cellular reprogramming. ***Nature Chemical Biology***. 15(5):519-528. 10.1038/s41589-019-0264-z
24. Breindel JL, Skibinski A, Sedic M, Wronski-Campos A, Zhou W, Keller PJ, Mills J, Bradner J, **Onder T**, Kuperwasser C. (2017) Epigenetic Reprogramming of Lineage-Committed Human Mammary Epithelial Cells Requires DNMT3A and Loss of DOT1L. ***Stem Cell Reports***. (17) 30282-5.
25. Takata K, Kozaki T, Lee CZW, Thion MS, Otsuka M, Lim S, Utami KH, Fidan K, Park DS, Malleret B, Chakarov S, See P, Low D, Low G, Garcia-Miralles M, Zeng R, Zhang J, Goh CC, Gul A, Hubert S, Lee B, Chen J, Low I, Shadan NB, Lum J, Wei TS, Mok E, Kawanishi S, Kitamura Y, Larbi A, Poidinger M, Renia L, Ng LG, Wolf Y, Jung S, **Önder T**, Newell E, Huber T, Ashihara E, Garel S, Pouladi MA, Ginhoux F. (2017) Induced-Pluripotent-Stem-Cell-Derived Primitive Macrophages Provide a Platform for Modeling Tissue-Resident Macrophage Differentiation and Function. ***Immunity***. 47(1):183-198
26. Kurt IC, Sur I, Kaya E, Cingoz A, Kazancioglu S, Kahya Z, Toparlak OD, Senbabaoglu F, Kaya Z, Ozyerli E, Karahüseyinoglu S, Lack NA, Gümüs ZH, **Onder TT**, Bagci-Onder T. (2017) KDM2B, an H3K36-specific demethylase, regulates apoptotic response of GBM cells to TRAIL. ***Cell Death Dis***. 8(6):e2897.
27. Zhang J, Ratanasirintrawoot S, Chandrasekaran S, Wu Z, Ficarro SB, Yu C, Ross CA, Cacchiarelli D, Xia Q, Seligson M, Shinoda G, Xie W, Cahan P, Wang L, Ng SC, Tintara S, Trapnell C, **Onder T**, Loh YH, Mikkelsen T, Sliz P, Teitell MA, Asara JM, Marto JA, Li H, Collins JJ, Daley GQ. (2016) LIN28 Regulates Stem Cell Metabolism and Conversion to Primed Pluripotency. ***Cell Stem Cell.*** 19(1):66-80.
28. Fidan K, Ebrahimi A, Çağlayan ÖH, Özçimen B, **Önder TT**. (2016) Transgene-Free Disease-Specific iPSC Generation from Fibroblasts and Peripheral Blood Mononuclear Cells. ***Methods Mol Biol***. 1353:215-31.
29. Fidan K, Kavaklıoğlu G, Ebrahimi A, Özlü C, Ay NZ, Arzu Ruacan, Ahmet Gül, **Önder TT.** (2015) Generation of integration-free induced pluripotent stem cells from a patient with Familial Mediterranean Fever (FMF). ***Stem Cell Research***. Volume 15, Issue 3: 694-696.

30. Unternaehrer J, Zhao R, Kim K, Cesana M, Powers JT, Ratanasirintrawoot S, **Onder T**, Shibue T, Weinberg RA, Daley GQ. (2014) The Epithelial-Mesenchymal Transition Factor SNAI1 Paradoxically Enhances Reprogramming. ***Stem Cell reports***. Nov 11; 3:1-8
31. Das PP, Shao Z, Beyaz S, Apostolou E, Pinello L, De Los Angeles A, O'Brien K, Atsma JM, Fujiwara Y, Nguyen M, Ljuboja D, Guo G, Woo A, Yuan GC, **Onder T**, Daley G, Hochedlinger K, Kim J, Orkin SH. (2014) Distinct and combinatorial functions of Jmjd2b/Kdm4b and Jmjd2c/Kdm4c in mouse embryonic stem cell identity. ***Mol Cell***. 53(1):32-48
32. Zhu J, Adli M, Zou JY, Verstappen G, Coyne M, Zhang X, Durham T, Miri M, Deshpande V, De Jager PL, Bennett DA, Houmard JA, Muoio DM, **Onder TT**, Camahort R, Cowan CA, Meissner A, Epstein CB, Shoresh N, Bernstein BE. (2013) Genome-wide Chromatin State Transitions Associated with Developmental and Environmental Cues. ***Cell***. 152(3):642-54.
33. Shyh-Chang N, Locasale JW, Lyssiotis CA, Zheng Y, Teo RY, Ratanasirintrawoot S, Zhang J, **Onder T**, Unternaehrer JJ, Zhu H, Asara JM, Daley GQ, Cantley LC. (2013) Influence of Threonine Metabolism on S-Adenosylmethionine and Histone Methylation. ***Science***. 339(6116):222-6.
34. **Onder TT** and Daley GQ. (2012) New lessons learned from disease modeling with induced pluripotent stem cells. ***Curr Opin Genetics Dev***. Oct;22(5):500-8.
35. **Onder TT,** Kar N, Cherry A, Sinha AU, Bernt K, Zhu N, Cahan P, Mancarci O, Unternaehrer J, Gupta PB, Lander ES, Armstrong, Daley GQ. (2012) Chromatin-modifying enzymes as modulators of reprogramming. ***Nature***. 483: 598-602.
36. Kuo T, Chen C, Baron D, **Onder TT**, et al. (2011) Midbody accumulation through evasion of autophagy contributes to cellular reprogramming and tumorigenicity. ***Nature Cell Biology***. 13(10):1214-23.
37. Rai P, Young JJ, Burton DG, Giribaldi MG, **Onder TT**, Weinberg RA. (2011) Enhanced elimination of oxidized guanine nucleotides inhibits oncogenic RAS-induced DNA damage and premature senescence. ***Oncogene***. 30(12):1489-96.
38. Loewer S, Cabili MN, Guttman M, Loh Y, Thomas K, Park IH, Garber M, Curran M, **Onder T**, et al. (2011) Large intergenic non-coding RNA-RoR modulates reprogramming of human induced pluripotent stem cells. ***Nature Genetics***. 42(12):1113-7.
39. Ma L, Young J, Prabhala H, Mestdagh P, Muth D, Teruya-Feldstein J, Reinhardt F, **Onder TT**, et al. (2010) miR-9, a MYC/MYCN-activated microRNA, regulates E-cadherin and cancer metastasis. ***Nature Cell Biology***. 12(3):247-56.
40. Kojima Y, Acar A, Eaton EN, Mellody KT, Scheel C, Ben-Porath I, **Onder TT**, et al. (2010) Autocrine TGF-beta and Stromal cell-derived factor-1 (SDF-1) signaling drives the evolution of tumor-promoting mammary stromal myofibroblasts. ***Proc Natl Acad Sci USA***. 107(46):20009-14.
41. Taube JH, Herschkowitz JI, Komurov K, Zhou AY, Gupta S, Yang J, Hartwell K, **Onder TT**, et al. (2010) Core epithelial-to-mesenchymal transition interactome gene-expression signature is associated with claudin-low and metaplastic breast cancer subtypes. ***Proc Natl Acad Sci USA***. 107(35):15449-54.
42. Gupta PB*, **Onder TT***, Jiang G, Tao K, Kuperwasser C, Weinberg RA, Lander ES. (2009) Identification of selective inhibitors of cancer stem cells by high-throughput screening. ***Cell***. *138(4):645-59.* * Co-author
43. Rai P, **Onder TT**, Young JJ, Pang B, McFaline J, Dedon P, and Weinberg RA. (2009) Continuous elimination of oxidized nucleotides is necessary to prevent onset of cellular senescence**.** ***Proc Natl Acad Sci USA***. 106(1):169-74.
44. **Onder TT**, Gupta PB, Mani SA, Yang J, Lander ES, Weinberg RA. (2008) Loss of E-cadherin promotes metastasis via multiple downstream transcriptional pathways. ***Cancer Research***. 68(10):3645-54.
45. Scheel C, **Onder T**, Karnoub A and Weinberg RA. (2007) Adaptation versus Selection: The Origins of Metastatic Behavior. *Cancer Research.* 67(24):11476-9.

INVITED TALKS/SEMINARS

1. CorEUStem symposium, Milan, May 2025
2. Advanced Cancer Biotherapeutics Symposium, Bilkent University, October 2024

3. TÜRKİYE ORGAN NAKLİ KURULUŞLARI KOORDİNASYON DERNEĞİ XV. KONGRESİ, October 2024
4. CorEUStem Training School, Barcelona, April 2024
5. IUGEN XXI. Moleküler Biyoloji ve Genetik Kış Okulu, Mart 2024
6. Gebze Teknik Üniversitesi, MBG Seminar
7. Kişiselleştirilmiş Tıpta Pluripotent Kök Hücreler, 14. Tıp Bilişimi Kongresi, Izmir, 2023
8. Boğaziçı Üniversitesi Molecular Biology and Genetics Seminar, Istanbul, 2023
9. CELLULAR ALCHEMY - EPIGENETIC REPROGRAMMING OF CELL FATES, Bilkent University, Ankara, 2022
10. Kanser ilaç direncini etkileyen epigenetik faktörlerin CRISPR temelli yaklaşımlar ile ortaya çıkarılması. TÜSEB 7. Türk Tıp Kurultayı, Istanbul 2022
11. Kök Hücre Araştırmaları ve Kişiselleştirilmiş Tıp. TUBITAK TBAE Semineri, 2021
12. Chemical Biology and Genetic Approaches to Identify Chromatin Regulators of Human Somatic Cell Reprogramming, University of Miami, Miller School of Medicine, 2019
13. A chemical screen identifies a role for P300 and CBP in reprogramming. *2nd International Conference on Stem Cells*, Rhodes, Greece 2017
14. Mechanisms and applications of somatic cell reprogramming, *EMBO YIP Stem Cell Meeting*, Paris, France, 2014
15. Chromatin modifying enzymes as regulators of somatic cell reprogramming, *Botnar Research Center, University of Oxford*, 2014
16. Induced pluripotent stem cell generation: Molecular Mechanisms and Application, *Bilkent University*, Ankara, Turkey, 2014
17. Chromatin modifiers in Reprogramming, *Helmholtz Centre Institute of Stem Cell Research*, Munich, Germany, 2013

PATENTS

1. Prediction of monitoring cancer therapy response based on gene expression profiling. PCT/US2011/046325
2. Methods for identification and use of agents targeting cancer stem cells. PCT/US2011/0191868
3. Inhibition and enhancement of reprogramming by chromatin modifying enzymes. PCT/US2012/000514

GRANTS

1. ICGEP International Collaborative Grant – Discovery of epigenetic regulators of human 8-cell like cells (Pending)
2. TUBITAK 1001 - Single-Cell Atlas of Limb Regeneration in Adult Mammals and Its Induction via Partial Reprogramming (Pending)
3. TUBITAK 1001 - Development of Chemical-Induced Pluripotent Stem Cell Production Methods (2025-2027)
4. TUBITAK 1001 - Optimization of induced pluripotent stem cell derived synthetic embryo models and investigating role of ARID3A in trophectoderm development (OPTI-Blast) (2025-2027)
5. TUBITAK 2247A - Ulusal Lider Araştırmacı (2022-2025)
6. TUBITAK COST - Enhancing the efficiency of induced pluripotent stem cells generation through suppression of MLL1-Menin complex (2022-2025)
7. TUBITAK 1001 - Role of USP22 in reprogramming and induced pluripotent stem cells (2023-2025)
8. TUBITAK 1001 - Investigating the role of BRD9 in cellular reprogramming and induced pluripotent stem cell (iPSC) generation (2020-2023)
9. TUBITAK 1001 - Enhancing induced pluripotent stem cell (iPSC) generation by CRISPR/Cas9-mediated suppression of Histone H3 Lysine 36 (H3K36) tri-methyl reader proteins (2021-2024)
10. TUBITAK 1001 - Reprogramming pluripotent stem cells to 2-cell embryo like cells using CRISPR-Cas9 activation systems (2021-2024)
11. Newton Advanced Fellowship (2016-2019)
12. EMBO Installation Grant 2543 (2013-2018)

13. EU FP7 Marie Curie Integration Grant 333918 - Chromatin Modifiers in Reprogramming (2013-2017)
14. TUBITAK 1003 - Project No 213S182 : Development of technologies for the generation and differentiation of Induced pluripotent stem cells (iPSCs) and their applications to cell-based therapies. (2014-2017)
15. TUBITAK 3501 - Proje No 212T095: Identifying the function of histone methyltransferase Suv39H1 in reprogramming and generation of induced pluripotent stem cells (2013-2016)
16. TUBITAK 1002 - Project No 115Z706: Identification of the interactome of Dot1L, a histone methyl transfease, during reprogramming (2016)

INSTITUTIONAL RESPONSIBILITIES

Head, Department of Medical Biology KUSOM	2022-
Coordinator, Molecular Biology and Genetics Graduate Program, Koc University	2015-2018
Member, faculty search and evaluation committee, Department of Chemical and Biological Engineering, Koc University	2016-2018
Member, faculty search and evaluation committee, Department of Molecular Biology and Genetics, Koc University	2015-2016
Head, KU School of Medicine Committee on Medical Student Research	2016-2019