

# Özden Yalçın-Özuysal, PhD

## Contact Information

### Address:

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## Research/Work Experience

- 2018 – Present     **Scientific Advisor and Share Holder**  
Initio Cell Ltd,  
Alderley Park, UK  
At INITIO, we develop patented/patent-pending multi-functional lab-on-a-chip products and assays aimed at drug discovery.
- 2023 – Present     **Professor**  
Izmir Institute of Technology  
Molecular Biology and Genetics Department  
Izmir / Turkey
- 2017 – 2023       **Associate Professor**  
Izmir Institute of Technology  
Molecular Biology and Genetics Department  
Izmir / Turkey
- 2010 – 2017       **Assistant Professor**  
Izmir Institute of Technology  
Molecular Biology and Genetics Department  
Izmir / Turkey
- 2009 – 2010       **Post-Doctoral Research Fellow**  
ISREC / EPFL  
(Swiss Institute for Experimental Cancer Research / Ecole Polytechnique  
Fédérale de Lausanne),  
Lausanne, Switzerland  
Lab of Prof. Cathrin Brisken
- 2002 – 2004       **Research assistant**  
Bilkent University, Dept. of Molecular Biology and Genetics, Ankara, Turkey

## Education

- 2005 – 2009       **Ph.D. in Life Sciences**  
Faculty of Biology and Medicine  
**University of Lausanne**, Lausanne, Switzerland  
**Thesis:** Role of Notch signaling in mammary gland development and breast cancer  
**Advisor:** Prof. Cathrin Brisken

- 2002 – 2004 **M.Sc. in Molecular Biology and Genetics**  
**Bilkent University**, Ankara, Turkey  
**Thesis:** Expression of Notch signaling pathway receptors and ligands in human breast cancer cell lines and human breast tumors  
**Advisor:** Prof. Dr. Mehmet Öztürk  
**GPA:** 4.00/4.00
- 1998 – 2002 **B.S. in Molecular Biology and Genetics**  
**Bilkent University**, Ankara, Turkey  
**Senior Project:** Expression patterns of TA-p73 and DN-p73 in breast cancer cell lines, tumor and normal tissues  
**Advisor:** Prof. Dr. Işık Yuluğ  
**GPA:** 3.39/4.00
- 2001 **Summer internship**  
**Rockefeller University**, Laboratory of Molecular and Cellular Neuroscience, New York , USA  
**Advisor:** Prof. Dr. Paul Greengard
- 2000 **Summer internship**  
**Leibniz Institute of Neurobiology**, Magdeburg, Germany  
**Advisor:** Dr. Wilko Altmann

## Publications

- Telli, K. & Yalcin-Ozuysal, O. (2023). Epithelial-mesenchymal transition as a potential route for DAPT resistance in breast cancer cells. *Turkish Journal of Biochemistry*, 48(1), 88-95. <https://doi.org/10.1515/tjb-2022-0218>
- Firatligil-Yildirim, B., Yalcin-Ozuysal, O., & Nonappa (2023). Recent advances in lab-on-a-chip systems for breast cancer metastasis research. *Nanoscale advances*, 5(9), 2375–2393. <https://doi.org/10.1039/d2na00823h>
- Ugur, D., Gungul, T. B., Yucel, S., Ozcivici, E., Yalcin-Ozuysal, O., & Mese, G. (2022). Connexin 32 overexpression increases proliferation, reduces gap junctional intercellular communication, motility and epithelial-to-mesenchymal transition in Hs578T breast cancer cells. *Journal of cell communication and signaling*, 10.1007/s12079-021-00665-9
- Gunyuz, Z. E., Sahi-Ilhan, E., Kucukkose, C., Ipekgil, D., Tok, G., Mese, G., Ozcivici, E., & Yalcin-Ozuysal, O. (2022). SEMA6D Differentially Regulates Proliferation, Migration, and Invasion of Breast Cell Lines. *ACS omega*, 7(18), 15769–15778. <https://doi.org/10.1021/acsomega.2c00840>
- Firatligil-Yildirim, B., Bati-Ayaz, G., Tahmaz, I., Bilgen, M., Pesen-Okvur, D., & Yalcin-Ozuysal, O. (2021). On-chip determination of tissue-specific metastatic potential of breast cancer cells. *Biotechnology and bioengineering*, 118(10), 3799–3810. <https://doi.org/10.1002/bit.27855>
- Delikoyun, K., Yaman, S., Yilmaz, E., Sarigil, O., Anil-Inevi, M., Telli, K., Yalcin-Ozuysal, O., Ozcivici, E., & Tekin, H. C. (2021). HologLev: A Hybrid Magnetic Levitation Platform Integrated with Lensless Holographic Microscopy for Density-Based Cell Analysis. *ACS sensors*, 10.1021/acssensors.0c02587

Cetin, A. E., Topkaya, S. N., Yalcin-Ozuysal, O., & Khademhosseini, A. (2021). Refractive Index Sensing for Measuring Single Cell Growth. *ACS nano*, 10.1021/acsnano.1c04031

Sarigil, O., Anil-Inevi, M., Firatligil-Yildirim, B., Unal, Y. C., Yalcin-Ozuysal, O., Mese, G., Tekin, H. C., & Ozcivici, E. (2021). Scaffold-free biofabrication of adipocyte structures with magnetic levitation. *Biotechnology and bioengineering*, 118(3), 1127–1140. <https://doi.org/10.1002/bit.27631>

Adak, A., Unal, Y. C., Yucel, S., Vural, Z., Turan, F. B., Yalcin-Ozuysal, O., Ozcivici, E., & Mese, G. (2020). Connexin 32 induces pro-tumorigenic features in MCF10A normal breast cells and MDA-MB-231 metastatic breast cancer cells. *Biochimica et biophysica acta. Molecular cell research*, 1867(12), 118851. <https://doi.org/10.1016/j.bbamcr.2020.118851>

Ilhan, M., Kucukkose, C., Efe, E., Gunyuz, Z. E., Firatligil, B., Dogan, H., Ozuysal, M., & Yalcin-Ozuysal, O. (2020). Pro-metastatic functions of Notch signaling is mediated by CYR61 in breast cells. *European journal of cell biology*, 99(2-3), 151070. <https://doi.org/10.1016/j.ejcb.2020.151070>

Küçükköse, C., & Yalçin Özuysal, Ö. (2019). Effects of Notch signalling on the expression of SEMA3C, HMGA2, CXCL14, CXCR7, and CCL20 in breast cancer. *Turkish journal of biology = Turk biyoloji dergisi*, 43(1), 70–76. <https://doi.org/10.3906/biy-1808-58>

Anil-Inevi, M., Yaman, S., Yildiz, A. A., Mese, G., Yalcin-Ozuysal, O., Tekin, H. C., & Ozcivici, E. (2018). Biofabrication of in situ Self Assembled 3D Cell Cultures in a Weightlessness Environment Generated using Magnetic Levitation. *Scientific reports*, 8(1), 7239. <https://doi.org/10.1038/s41598-018-25718-9>

Zengin, T., Ekinci, B., Kucukkose, C., & Yalcin-Ozuysal, O. (2015). IRF6 Is Involved in the Regulation of Cell Proliferation and Transformation in MCF10A Cells Downstream of Notch Signaling. *PLoS one*, 10(7), e0132757. <https://doi.org/10.1371/journal.pone.0132757>

Rajaram, R. D., Buric, D., Caikovski, M., Ayyanan, A., Rougemont, J., Shan, J., Vainio, S. J., Yalcin-Ozuysal, O., & Briskin, C. (2015). Progesterone and Wnt4 control mammary stem cells via myoepithelial crosstalk. *The EMBO journal*, 34(5), 641–652. <https://doi.org/10.15252/emboj.201490434>

Tanos, T., Sflomos, G., Echeverria, P. C., Ayyanan, A., Gutierrez, M., Delaloye, J. F., Raffoul, W., Fiche, M., Dougall, W., Schneider, P., Yalcin-Ozuysal, O., & Briskin, C. (2013). Progesterone/RANKL is a major regulatory axis in the human breast. *Science translational medicine*, 5(182), 182ra55. <https://doi.org/10.1126/scitranslmed.3005654>

Restivo, G., Nguyen, B. C., Dziunycz, P., Ristorcelli, E., Ryan, R. J., Özuysal, Ö. Y., Di Piazza, M., Radtke, F., Dixon, M. J., Hofbauer, G. F., Lefort, K., & Dotto, G. P. (2011). IRF6 is a mediator of Notch pro-differentiation and tumour suppressive function in keratinocytes. *The EMBO journal*, 30(22), 4571–4585. <https://doi.org/10.1038/emboj.2011.325>

Ayyanan, A., Laribi, O., Schuepbach-Mallepell, S., Schrick, C., Gutierrez, M., Tanos, T., Lefebvre, G., Rougemont, J., Yalcin-Ozuysal, O., & Briskin, C. (2011). Perinatal exposure to bisphenol a increases adult mammary gland progesterone response and cell number. *Molecular endocrinology (Baltimore, Md.)*, 25(11), 1915–1923. <https://doi.org/10.1210/me.2011-1129>

Yalcin-Ozuysal, O., Fiche, M., Guitierrez, M., Wagner, K. U., Raffoul, W., & Brisken, C. (2010). Antagonistic roles of Notch and p63 in controlling mammary epithelial cell fates. *Cell death and differentiation*, 17(10), 1600–1612. <https://doi.org/10.1038/cdd.2010.37>

Yalcin-Ozuysal, O., & Brisken, C. (2009). From normal cell types to malignant phenotypes. *Breast cancer research : BCR*, 11(6), 306. <https://doi.org/10.1186/bcr2418>

Ozturk, N., Erdal, E., Mumcuoglu, M., Akcali, K. C., Yalcin, O., Senturk, S., Arslan-Ergul, A., Gur, B., Yulug, I., Cetin-Atalay, R., Yakicier, C., Yagci, T., Tez, M., & Ozturk, M. (2006). Reprogramming of replicative senescence in hepatocellular carcinoma-derived cells. *Proceedings of the National Academy of Sciences of the United States of America*, 103(7), 2178–2183. <https://doi.org/10.1073/pnas.0510877103>

## Book Chapters

**Yalcin-Ozuysal O**, Meşe Özçivici G. – “Epigenetics of Breast Cancer: DNA Methylome and Global Histone Modifications” – Epigenetic Advancements in Cancer, Editors: Mishra, Manoj K., Bishnupuri, Kumar S., Springer, 2016, ISBN:978-3-319-24951-3.

Meşe Özçivici G, **Yalcin-Ozuysal O**. – “Kanser Araştırmalarında Fare Modelleri” – Kanser Moleküler Biyolojisi, Editör: Baran, Y., Kısayol Yayıncılık, 2018, ISBN:6052329300.

## Grant Funding

2023 – 2025 “Investigating the role of SACM1L in PI3K pathway and autophagy in cancer cells” supported by TUBITAK (The Scientific and Technological Research Council of Turkey)

2022 – 2024 “Development of a personalized medicine approach to determine the drug-response and the invasion potential of tumors tissues on an organ-on-chip platform” supported by Izmir Institute of Technology

2019 – 2021 “Investigating the role of factors secreted from breast cancer cell lines on pre-metastatic niches using microfluidic chips in vitro” supported by TUBITAK

2015 – 2019 “A New Lab-on-a-CHIP device for early diagnosis of metastasis” supported by TUBITAK

2014 – 2017 “Identification of novel Notch target genes that are mediators of Notch in inducing epithelial-mesenchymal transition and migration/invasion” supported by TUBITAK

2011 – 2014 “The role of IRF6 as a switch for the cell growth inhibitor or inducer functions of Notch signaling” supported by TUBITAK

2011 – 2012 “Understanding the tumor suppressor role of IRF6 and its effect on p63” supported by Izmir Institute of Technology

## Conferences and Meetings

July 2018 **EACR25 (European Association for Cancer Research)**  
Amsterdam, Netherlands (Poster presentation)

November 2023

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- June 2018 **Mammary Gland Biology Gordon Conference**  
Il Ciocco, Italy (Poster Presentation)
- September 2014 **3rd International Congress of the Molecular Biology Association of Turkey**  
Izmir, Turkey (Poster presentation)
- October 2013 **XIII. National Congress of Medical Biology and Genetics**  
Kusadasi, Turkey (Poster presentation)
- October 2013 **The Notch Meeting VII**  
Athens, Greece (Poster presentation)
- October 2009 **Invited speaker** by Prof. Daniela Taverna  
Molecular Biotechnology Center, Universita di Torino  
Turin, Italy
- June 2008 **Mammary Gland Biology Gordon Conference**  
Il Ciocco, Italy  
**Short talk:** Mechanisms of Notch signaling in breast epithelial cells
- June 2007 **5<sup>th</sup> Annual Meeting of Frontiers in Genetics**  
National Center of Competence in Research (NCCR), Saas Fee,  
Switzerland  
**Short talk:** Mechanisms of Notch signaling in breast epithelial cells

## Teaching Experience

- 2011 – Present **Thesis supervision:**  
3 PhD students – Current  
9 Master students – Graduated  
2 PhD student – Graduated
- 2010 – Present **Courses taught:**  
MBG202 Molecular Biology  
MBG212 Molecular Biology Lab  
MBG401 Recombinant DNA Technologies  
MBG403 Developmental Biology  
MBG405 Current Techniques in Molecular Biology  
MBG545 Molecular Biology of Cancer  
MBG546 Biology of Metastasis
- 2007 – 2008 Internship student supervisions,  
ISREC/EPFL, Switzerland
- 2002 – 2004 Teaching assistant in Biochemistry I Laboratory,  
Bilkent University, Ankara