CURRICULUM VITAE

1. Name-Surname : Tuğba BAL

Contact Information

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2. Date of Birth :

3. Title : Dr

4. Education Level : PhD

Degree	Department	University	Year
Undergraduate	Molecular Biology and Genetics	Istanbul Technical University	2010
MS	Chemical and Biological Engineering	Koç University	2012
PhD	Chemical and Biological Engineering	Koç University	2017
Researcher (Post-doc)	Beykoz Institute of Life Sciences and Biotechnology	Bezmialem Foundation University	2018-2020

5. Academic Titles

Title	Department	University	Year
Assistant Professor	Bioengineering	Üsküdar University	2021-

*Between 2010-2017, she worked as a teaching assistant at Koç University. All the courses listed below are taught in English.

2017 spring	CHEM 102-General Chemistry Lab II
2016 fall	CHEM 101-General Chemistry Lab I
2016 spring	CHEM 102-General Chemistry Lab II
2015 fall	CHBI 484/584-Tissue Engineering
2011 fall- 2015 spring interval	CHBI 302- Heat Transfer ve CHBI 301-Fluid Mechanics
2011 spring	MBGE 102- General Biology Lab II
2010 fall	MBGE 101- General Biology Lab I

6. Managed MS and PhD Thesis

6.1. MS Thesis

6.2. PhD Thesis

7. Publications

7.1. Articles published in internationally refereed journals (SCI & SSCI & Arts and Humanities)

Bal, T., Karaoglu, I.C., Murat, F.S., Yalcin, E., Sasaki, Y., Akiyoshi, K., Kizilel, S. (2022). Immunological response of polysaccharide nanogel-incorporating PEG hydrogels in an in vivo diabetic model. Journal of Biomaterials Science, Polymer Edition, 33(14), 1794-1810. doi: 10.1080/09205063.2022.2077512

Bal, T., Inceoglu, Y., Karaoz, E., Kizilel, S. (2019). Sensitivity study for the key parameters in heterospheroid preparation with insulin-secreting β-cells and mesenchymal stem cells. ACS Biomaterials Science & Engineering, 5(10), 5229-5239.
doi:10.1021/acsbiomaterials.9b00570

Oran, D., Lokumcu, T., Inceoglu, Y., Akolpoglu, M., Albayrak, O., Bal, T., Kurtoglu, M., Erkan, M., Can, F., Bagci-Onder, T. & Kizilel, S. (2019). Engineering human stellate cells for beta cell replacement therapy promotes in vivo recruitment of regulatory T cells (Tregs). Materials Today Bio, 2, 100006. doi: 10.1016/j.mtbio.2019.100006

Bingol, H. B., Agopcan-Cinar, S., Bal, T., Oran, D. C., Kizilel, S., Kayaman-Apohan, N., & Avci, D. (2019). Stimuli-responsive poly(hydroxyethyl methacrylate) hydrogels from carboxylic acid-functionalized crosslinkers. J Biomed Mater Res A, 107(9), 2013-2025. doi:10.1002/jbm.a.36714

Guven, M.N.*, Altuncu, M.S.*, Bal, T., Oran, D.C., Gulyuz, U., Kizilel, S., Okay, O. & Avci, D. (2018). Bisphosphonic acid-functionalized cross-linkers to tailor hydrogel properties for biomedical applications. ACS Omega, 3(8), 8638–47. doi: 10.1021/acsomega.8b01103 (*eşit katkı)

Bal, T., Oran, D.C., Sasaki, Y., Akiyoshi, K., Kizilel, S. (2018). Sequential Coating of Insulin Secreting Beta Cells within Multilayers of Polysaccharide Nanogels. Macromolecular Bioscience, 18(5), e1800001. doi: 10.1002/mabi.201800001

Bingol, H.B., Altin, A., Bal, T., Agopcan-Cinar, S., Kizilel, S., & Avci, D. (2015). Synthesis and evaluation of new phosphonic acid-functionalized acrylamides with potential biomedical applications. J. Polym. Sci., Part A: Polym. Chem, 53(23), 2755–67. doi: 10.1002/pola.27746

Bal, T., Nazli, C., Okcu, A., Duruksu, G., Karaoz, E., & Kizilel, S. (2017). Mesenchymal stem cells and ligand incorporation in biomimetic poly(ethylene glycol) hydrogels significantly improve insulin secretion from pancreatic islets. J Tissue Eng Regen Med, 11(3), 694-703. doi:10.1002/term.1965

Kepsutlu, B., Nazli, C., Bal, T., & Kizilel, S. (2014). Design of bioartificial pancreas with functional micro/nano-based encapsulation of islets. Curr Pharm Biotechnol, 15(7), 590-608.

Golab, K., Kizilel, S., Bal, T., Hara, M., Zielinski, M., Grose, R., Savari, O., Wang, X. J., Wang, L. J., Tibudan, M., Krzystyniak, A., Marek-Trzonkowska, N., Millis, J. M., Trzonkowski, P., & Witkowski, P. (2014). Improved coating of pancreatic islets with regulatory T cells to create local immunosuppression by using the biotin-polyethylene glycol-succinimidyl valeric acid ester molecule. Transplant Proc, 46(6), 1967-1971. doi:10.1016/j.transproceed.2014.05.075

Bal, T., Kepsutlu, B., & Kizilel, S. (2014). Characterization of protein release from poly(ethylene glycol) hydrogels with crosslink density gradients. J Biomed Mater Res A, 102(2), 487-495. doi:10.1002/jbm.a.34701

Giray, S., Bal, T., Kartal, A. M., Kizilel, S., & Erkey, C. (2012). Controlled drug delivery through a novel PEG hydrogel encapsulated silica aerogel system. J Biomed Mater Res A, 100(5), 1307-1315. doi:10.1002/jbm.a.34056

7.2. Assertions presented in international scientific congresses and published in the proceedings

[oral]

Seda Kizilel, **Tugba Bal**, Erdal Karaoz "Cell-Cell Communication in PEG Hydrogel Microenvironment for Improved Beta Cell Function", Biomedical Engineering Society (BMES) Annual Meeting, October 5-8, 2016, Minneapolis, Minnesota.

Tugba Bal, Erdal Karaoz and Seda Kizilel "Mesenchymal Stem Cells As Companions for MIN6

Pseudoislets within 3D Peg Hydrogel Scaffolds", AIChE 2015 Annual Meeting (ISBN: 978-0-8169-1094-6), Biomaterial Scaffolds for Tissue Engineering, November 8-13, 2015, Salt Lake City, UT.

Tugba Bal, Yoshihide Hashimoto, Yoshihiro Sasaki, Kazunari Akiyoshi and Seda Kizilel "PEG Hydrogel-Nanogel Composite Scaffolds As Extracellular Matrix Platforms", AIChE 2015 Annual Meeting (ISBN: 978-0-8169-1094-6), Biomimetic Materials, November 8-13, 2015, Salt Lake City, UT.

Seda Kizilel, **Tugba Bal**, Gunce Ezgi Cinay "Encapsulation of Beta Cells within Ligand Functionalized Scaffolds Improve Insulin Secretion Function", Biomedical Engineering Society (BMES) Annual Meeting, October 23-26, 2014, San Antonio, TX.

Tugba Bal, Caner Nazli, Alpaslan Okcu, Gokhan Duruksu, Erdal Karaoz, Seda Kizilel "Functionalized PEG Hydrogels as Immunoactive Barriers for Pancreatic Islets Enhance Insulin Secretion", Tissue Engineering International and Regenerative Medicine Society (TERMIS), June 17-20, 2013, İstanbul, Turkey. (oralposter)

Tugba Bal, Burcu Kepsutlu, Seda Kizilel "Effect of Crosslink Density on Protein Diffusion through PEG Hydrogels with Permeability Gradients", AIChE 2012 Annual Meeting, Biomaterial Scaffolds for Tissue Engineering, October 28-31, 2012, Pittsburgh, PA.

Tugba Bal, Burcu Kepsutlu, Caner Nazli, Riza Kizilel, Seda Kizilel "PEG Based Hydrogels with Permeability Gradients for Enhanced Cell Function", AIChE 2011 Annual Meeting, Hydrogel Biomaterials I, October 16-20, 2011, Minneapolis, MN.

[poster]
Tugba Bal, Dilem Ceren Oran, Yoshihiro Sasaki, Kazunari Akiyoshi, Seda Kizilel "Nano-thin Coating of Insulin Secreting Pseudoislets", Gordon Research Conferences, Biomaterials & Tissue Engineering, July 23-28, 2017, Holderness, NH.

Tuğba Bal, Erdal Karaoz, Seda Kizilel "Mesenchymal Stem Cells (MSCs) Improve Beta Cell Function within Biomimetic PEG Hydrogels", 2015 4th TERMIS World Congress, September 8-11, 2015, Boston, MA.

Seda Kizilel, **Tugba Bal**, Caner Nazli, Alpaslan Okçu, Gokhan Duruksu, Erdal Karaoz "Mesenchymal Stem Cells and Ligand Incorporation Modulate Pancreatic Islet Function and Apoptosis in PEG Hydrogel Scaffolds", Society For Biomaterials 2014 Annual Meeting and Exposition: Pioneering the Future of Biomaterials, April 16-19, 2014, Colorado, US.

Tugba Bal, Caner Nazli, Alpaslan Okcu, Gokhan Duruksu, Erdal Karaoz, Seda Kizilel "Functionalized PEG Hydrogels as Immunoactive Barriers for Pancreatic Islets Enhance Insulin Secretion", Tissue Engineering International and Regenerative Medicine Society (TERMIS), June 17-20, 2013, İstanbul, Turkey. (oral poster)

Tugba Bal, Caner Nazli, Alpaslan Okcu, Gokhan Duruksu, Erdal Karaoz, Seda Kizilel "Functionalized PEG Hydrogels as Immunoactive Barriers for Pancreatic Islet Cell Encapsulation", Beta Cell Conference, April 23-26, 2013, Kyoto, Japan.

7.3. Published international books or chapters in a book
7.4. Articles published in national refereed journals

7.5. Assertions presented in national scientific congresses and published in the proceedings
[oral]
Tugba Bal, Dilem Ceren Oran, Yoshihide Hashimoto, Yoshihiro Sasaki, Kazunari Akiyoshi, Seda Kizilel "Nano-thin coatings of pseudoislets prepared with beta cells", 22nd International Biomedical Science and Technology Symposium (Biomed), May 12-14, 2017, Ankara, Turkey.

Tugba Bal, Caner Nazli, Alpaslan Okcu, Gokhan Duruksu, Erdal Karaoz, Seda Kizilel "PEG Hidrojel Içinde Kaplanan Kök Hücre ve Peptitlerin Adacik Hücre Nakli ile Tip 1 Diyabet Tedavisinde Kullanim Potansiyelinin Arastirilmasi", 1st Congress on Stem Cell and Cell Therapies with International Participation, March 20-23, 2014, Kocaeli, Turkey (in Turkish).

Tugba Bal, Burcu Kepsutlu, Seda Kizilel "Gecirgenlik Egimli PEG Sujelinden Protein Salimi ve Sitotoksisite", 10th National Chemical Engineering Conference (UKMK), September 3-6, 2012, Istanbul, Turkey (in Turkish).

[poster]
Dilem Ceren Oran, Tolga Lokumcu, Ozgur Albayrak, **Tugba Bal**, Tugba Bagcı-Onder, Mert Erkan, Füsun Can, Seda Kizilel "Promoting Local Immunosuppression For Graft Tolerance", 22nd International Biomedical Science and Technology Symposium (Biomed), May 12-14, 2017, Ankara, Turkey.

7.6. Other publications

2022	Bioartificial Pancreas Finally in Clinical Trials (Biyoyapay Pankreas Sonunda Klinik Çalışma Evresinde), GTÜ, Biosciens (Öğrenci kulübü dergisi), volume 14, URL: https://www.gtubios.org/biosciens
2017	"Design of Biomimetic Extracellular Matrix to Improve Pancreatic Islet Engraftment" PhD Thesis
2012	"Characterization of Protein Release from PEG Hydrogels with Permeability Gradients" (English) MS Thesis

8.Projects

2015-2016	"Investigation of Role of Poly(ethylene glycol) Hydrogel Coated Mouse Insulinoma Cell (MIN6) Derived Pseudoislets in a Diabetic Mouse Model" Grant: The Scientific and Technological Research Council of Turkey (TUBITAK)-1002 (115M040) *research assistant
2013-2015	"Encapsulation of Insulin Secreting Murine Pancreatic Beta-Cells (MIN6) within Ligand and Stem Cell Functional PEG Hydrogel" Grant: The Scientific and Technological Research Council of Turkey (TUBITAK)-1001(113M232) *research assistant
2012-2014	"Functionalized PEG Hydrogels as Immunoactive Barriers for Pancreatic Islet Cell Coating" Grant: Koç University-Istanbul Rotary Club *research assistant

9.Administrative Duties

2022-	Deputy Head of Department, Department of Bioengineering (English), Faculty of Engineering and Natural Sciences, Üsküdar University
2022-	Head of Commission, Faculty of Engineering and Natural Sciences Education Commission, Üsküdar University
2022	Deputy Coordinator, Faculty of Engineering and Natural Sciences Education Commission, Üsküdar University
2021-	Member of Commission, Education Commission of Bioengineering, Faculty of Engineering and Natural Sciences, Üsküdar University

2021- Student Advisor (51-60), Üsküdar University, Faculty of Engineering and Natural Sciences, Department of Bioengineering (English)

2021- Research Group Membership, Üsküdar University, Faculty of Engineering and Natural Sciences, Department of Bioengineering (English)

10. Scientific Memberships

American Institute of Chemical Engineers (AICHE) (2015-2016)
The Society of Stem Cell and Cellular Treatments (2014-)

11.Awards

2017	Koç University Academic Excellence Award
2015	TÜBİTAK 1001 Project (113M232) fellowship (7 months)
2012-2017	Koç University PhD scholarship
2012-2017	TUBITAK BIDEB PhD fellowship
2010-2012	Koç University MSc scholarship
2010-2012	TUBITAK BIDEB MSc fellowship
2010	ITU Faculty of Science and Letters, Department of Molecular Biology and Genetics, 2009-2010 Academic Year, Dr. Orhan Ocalgiray Success Award
2010	Highest ranking (ITU-undergraduate)
2010 bahar	ITU high honor list
2008 bahar	ITU honor list
2007 bahar	ITU high honor list
2006 güz	ITU high honor list

12. The undergraduate and graduate courses given in the last 2 years

Academic Year	Semester	Course Name	Hours		Number of Studemts
			Theoretical	Practical	
2021-2022	Spring	BEN328 Genetic Engineering	3	2	41
		BEN406 Tissue Engineering	3	0	68
		BEN492 Graduation Thesis	1	8	6
		BEN540 Microbial Bioprocesses*	3	0	13
		BEN515 Seminar*	1	0	6
2021-2022	Fall	MBI209 Mikrobiyoloji	3	2	74
		MBG408 Bioethics	2	0	38
		CHE321 Fundamentals of Biochemistry	3	0	12
		BEN489 Graduation Project	2	2	5

(*) indicates MS courses.