

Arzu Onay-Besikci, PhD



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EDUCATION

- Ph.D. in Pharmacology, 2003, University of Alberta, Edmonton, Alberta, Canada
 - M.S. in Pharmacology, 1997, Ankara University, Faculty of Pharmacy, Ankara, Turkey
 - B.S. in Pharmacy, 1994, Hacettepe University, Ankara, Turkey
-

PROFESSIONAL EXPERIENCE

Professor

Ankara University, Faculty of Pharmacy,
Department of Pharmacology 2014 -

Associate Professor

Ankara University, Faculty of Pharmacy,
Department of Pharmacology 2008 – 2014

Visiting Scientist

Cardiovascular Research Group, University of Alberta January- February 2012

Postdoctoral Research

Division of Cardiovascular Disease,
University of Alabama at Birmingham August-September 2006

Postdoctoral Research

Cardiovascular Research Group, University of Alberta June-September 2005

Research Assistant

Ankara University, Faculty of Pharmacy,
Department of Pharmacology 1996 - 2008

PUBLICATIONS

I. INTERNATIONAL JOURNAL ARTICLES

1. Güven B, Kara Z, **Onay-Besikci A.** Metabolic effects of carvedilol through β -arrestin proteins: investigations in a streptozotocin-induced diabetes rat model and in C₂C₁₂ myoblasts. *Br J Pharmacol*, 177 (24): 5580-5594, 2020.
2. Akdemir Kalkan İ, Çinar G, Pehlivanli A, Ürkmez F, Topaloğlu İE, Akyol B, **Besikci A**, Azap A, Memikoğlu KO. Pattern of systemic antibiotic use and potential drug interactions: Evaluations through a point prevalence study in Ankara University Hospitals. *Turk J Med Sci*. accepted Sep 2020, doi: 10.3906/sag-2004-164.
3. Celik İ, Ayhan-Kılçigil G, **Onay-Besikci A.** Approach to the mechanism of action of hydroxychloroquine on SARS-CoV-2: a molecular docking study. *J Biomol Struct Dyn*, accepted July 2020, doi: <https://doi.org/10.1080/07391102.2020.1792993>.
4. Celik İ, Ayhan-Kılçigil G, Guven B, Kara Z, Gurkan-Alp AS, Karayel A, **Onay-Besikci A.** Design, synthesis and docking studies of benzimidazole derivatives as potential EGFR inhibitors. *Eur J Med Chem*, 173:240-249, 2019.
5. Amasya G, Aksu B, Badilli U, **Onay-Besikci A**, Tarimci N. QbD guided early pharmaceutical development study: Production of lipid nanoparticles by high pressure homogenization for skin cancer treatment. *Int J Pharm*, 563:110-121, 2019.
6. Aydin E, Badilli U, **Onay-Besikci A**, Tarimci N. Thermosensitive in situ gel formulation containing plga nanoparticles of flurbiprofen for ocular delivery. *Acta Poloniae Pharmaceutica - Drug Research*, 75(1): 141-153, 2018.
7. Demirel S, Ayhan Kılçigil G, Kara Z, Güven B, Onay-Besikci A. Synthesis and Pharmacological Evaluation of Some Benzimidazole Acetohydrazide Derivatives as EGFR Inhibitors, *Turk J Pharm Sci*, 14 (3), 285-289, 2017.
8. Tort S, Acartürk F, **Besikci A.** Evaluation of three-layered doxycycline-collagen loaded nanofiber wound dressing. *Int J Pharm*, 529(1-2):642-653, 2017.

9. Amasya G, Sandri G, **Onay-Besikci A**, Badilli U, Caramella C, Bonferoni MC, Tarimci N. Skin Localization of Lipid Nanoparticles (SLN/NLC): Focusing the Influence of Formulation Parameters. *Curr Drug Deliv*, 13(7):1100-1110, 2016.
10. Fillmore N, Huqi A, Jaswal JS, Mori J, Paulin R, Haromy A, **Onay-Besikci A**, Ionescu L, Thébaud B, Michelakis E, Lopaschuk GD. Effect of Fatty Acids on Human Bone Marrow Mesenchymal Stem Cell Energy Metabolism and Survival. *PLoS One*. 10(3): e0120257, 2015.
11. Lam VH, Zhang L, Huqi A, Fukushima A, Tanner BA, **Onay-Besikci A**, Keung W, Kantor PF, Jaswal JS, Rebeyka IM, Lopaschuk GD. Activating PPAR α prevents post-ischemic contractile dysfunction in hypertrophied neonatal hearts. *Circ Res*. 117(1):41-51, 2015.
12. Sezgin Bayındır Z, **Besikci A**, Yuksel N. Paclitaxel-loaded niosomes for intravenous administration: pharmacokinetics and tissue distribution in rats. *Turk J Med Sci*, 45 (6): 1403-1412, 2015.
13. Badilli U, **Onay-Besikci A**, Amasya G, Sen T, Tarimci N. Calcipotriol–captisol inclusion complex and corticosteroid in a novel fixed dose combination: evaluation on human epidermal keratinocyte cells. *J Incl Phenom Macrocycl Chem*, 83:363–368, 2015.
14. Badilli U, Sengel-Turk CT, **Onay-Besikci A**, Tarimci N. Development of Etofenamate-Loaded Semisolid SIn Dispersions and Evaluation Of Anti-Inflammatory Activity for Topical Application. *Curr Drug Deliv*. 12(2):200-9, 2014.
15. Dincer S, Cetin KT, **Onay-Besikci A**, Olgan S. Synthesis, biological evaluation and docking studies of new pyrrolo[2,3-d] pyrimidine derivatives as Src family-selective tyrosine kinase inhibitors. *J Enzyme Inhib Med Chem*. 28(5):1080-1187, 2013.
16. Sezgin-Bayindir Z, **Onay-Besikci A**, Vural N, Yuksel N. Niosomes encapsulating paclitaxel for oral bioavailability enhancement: preparation, characterization, pharmacokinetics and biodistribution. *J Microencapsul*. 30(8):796-804, 2013.
17. Kilic-Kurt Z, **Onay-Besikci A**, Olgan S. Synthesis, Biological and Computational Evaluation of Novel Oxindole Derivatives as Inhibitors of Src Family Kinases, LDDD, 10 (8), 713-718, 2013.
18. **Onay-Besikci A**, Suzmecelik E, Ozcelikay AT. Carvedilol suppresses fatty acid oxidation and stimulates glycolysis in C2C12 cells. *Can J Physiol Pharmacol*. 90(8): 1087-1193, 2012.

19. Laczy B, Fülöp N, **Onay-Besikci A**, Des Rosiers C, Chatham JC. Acute regulation of cardiac metabolism by the hexosamine biosynthesis pathway and protein O-GlcNAcylation. PLoS One. 6(4):e18417, 2011.
20. **Onay-Besikci A**, Ozkan SA. Trimetazidine Revisited: A Comprehensive Review of the Pharmacological Effects and Analytical Techniques for the Determination of Trimetazidine. Cardiovasc. Ther. 26:147-165, 2008
21. Yaras N, Sarıahmetoglu M, Bilginoglu A, Aydemir-Koksoy A, **Onay-Besikci A**, Turan B, Schulz R. Protective action of doxycycline against diabetic cardiomyopathy in rats. Br. J. Pharmacol. 155: 1174-1184, 2008
22. **Onay-Besikci A**, Guner S, Arioglu E, Ozakca I, Ozcelikay AT, Altan VM. The effects of chronic trimetazidine treatment on mechanical function and fatty acid oxidation in diabetic rat hearts. Can J Physiol Pharmacol. 85:527-535, 2007.
23. **Onay-Besikci A**, Wagg C, Lopaschuk TP, Keung W, Lopaschuk GD. α-Lipoic Acid Increases Cardiac Glucose Oxidation Independent of AMP-Activated Protein Kinase in Isolated Working Rat Hearts. Basic Res Cardiol. 102:436-444, 2007.
24. **Onay-Besikci A**. Impact of lactate in the perfusate on function and metabolic parameters of isolated working rat heart. Mol Cell Biochem. 296 (1-2):121-127, 2007.
25. **Onay-Besikci A**. Regulation of cardiac energy metabolism in newborn. Mol Cell Biochem. 287 (1-2):1-11, 2006.
26. **Onay-Besikci A**, Sambandam N. Malonyl CoA control of fatty acid oxidation in the newborn heart in response to increased fatty acid supply. Can J Physiol Pharmacol. 84: 1215-1222, 2006.
27. **Onay-Besikci A**, Altarejos JY, Lopaschuk GD, gAd-globular head domain of adiponectin increases fatty acid oxidation in newborn rabbit hearts. J Biol Chem, 279(43):44320-44326, 2004.
28. **Onay-Besikci A**, Campbell FM, Hopkins TA, Dyck JR, Lopaschuk GD. Relative importance of malonyl CoA and carnitine in maturation of fatty acid oxidation in newborn rabbit heart. Am J Physiol Heart Circ Physiol. 284(1):H283-H289, 2003.

29. Atkinson LL, Kozak R, Kelly SE, **Onay-Besikci A**, Russell JC, Lopaschuk GD. Potential mechanisms and consequences of cardiac triacylglycerol accumulation in insulin-resistant rats. *Am J Physiol Endocrinol Metab.* 284(5):E923-E930, 2003.
30. Dinçer UD, **Onay A**, Arı N, Ozçelikay AT, Altan VM. The effects of diabetes on beta-adrenoceptor mediated responsiveness of human and rat atria. *Diabetes Res Clin Pract.* 40(2):113-122, 1998.

II. BOOK CHAPTERS

1. **Onay-Besikci A.** Substrate Metabolism in the Diabetic Heart, *Diabetic Cardiomyopathy*, ed. Belma Turan and Naranjan S. Dhalla, Springer, New York, 2014.
2. **Onay-Besikci A** and Özkan SA. Drugs Versus Chemicals, *Electroanalytical Methods in Pharmaceutical Analysis and Their Validation*, ed. Sibel A. Özkan, HNB Publishing, New York, 2012.
3. Lopaschuk GD and **Onay-Besikci A.** Regulation of Fatty Acid Oxidation by Malonyl CoA in Cardiac Muscle Tissue, *Advances in Molecular and Cell Biology*, ed. G. van der Vusse, Vol. 33, 223-241, Elsevier, Amsterdam, 2003.

III. POSTER PRESENTATIONS

1. Akdemir-Kalkan I, Aydin G, Pehlivanli A, Urkmez F, Topaloglu IE, Akyol B, Onay-Besikci A, Azap A, Memikoglu O. Systemic Antibiotic-Related Drug Interactions in a University Hospital: a Point Prevalence Study. *ECCMID*, April 13-16, 2019, Amsterdam, The Netherlands.
2. Güven B, Kara Z, Onay-Besikci A. Metabolic Effects of Carvedilol Through β -arrestin-2: Investigations in Cells and Streptozotocin-Diabetic Rats. *SHVM 17th Annual Scientific Sessions*, June 23-26, 2019, Amsterdam, The Netherlands.
3. Yılmaz D, Kara Z, Güven B, Beşikci A, Gür S. The Possible Beneficial Effect of Ivabradine Treatment on Erectile Tissue in a Diabetic Rat Model. *ISOPS 12th*, June 26-29, 2018, Ankara, Turkey.
4. Yılmaz D, Kara Z, Güven B, Gür S, Beşikci A. The Effect of Carvedilol Treatment on Erectile Dysfunction in Streptozotocin-Induced Diabetic Rats. *ISOPS 12th* June 26-29, 2018, Ankara, Turkey.

5. Kara Z, Güven B, Onay-Besikci A. The Mechanism of Acute and Chronic Vascular Effects of Ivabradine in Control and Diabetic Rats. *Frontiers in Cardiovascular Biology* 2018, April 20-22, 2018, Vienna, Austria.
6. Güven B, Kara Z, Onay-Besikci A. Therapeutic effect of Carvedilol on Cardiac Function in Streptozotocin-Diabetic Rats. *Frontiers in CardioVascular Biology* 2018, April 20-22, 2018, Vienna, Austria.
7. Kara Z, Güven B, Onay-Besikci A. Presence of HCN Channels in Rat Aorta and Prevention of Endothelial Dysfunction with Their Selective Inhibitor Ivabradine. *Pharmacology* 2018, December 18-20, 2018, London, UK.
8. Çelik İ, Kılçigil G, Kara Z, Güven B, Besikci A. Synthesis of Some 1H-Benzimidazoles Containing Cyclohexyl Substituted Thiosemicarbazides, Triazoles, Thiadiazoles as Inhibitors of EGFR Tyrosine Kinase. *GPSS2017*, October 11-13, 2017.
9. Çelik İ, Ayhan-Kılçigil G, Onay-Besikci A. Synthesis of Some 1h-Benzimidazoles as Inhibitors of EGFR Tyrosine Kinase, World Academy of Science, Engineering and Technology, June 27-28, 2016, Copenhagen, Denmark.
10. Amasya G, Badilli U, Onay-Besikci A, Tarimci N. Lipid Nanoparticle Based Carbopol Gel for Topical Chemotherapy of 5-Fluorouracil, Skin Forum, June 21-22, 2016, London, UK.
11. Cicek M, Ozakca I, Ozis SE, Onay-Besikci A, Ozcelikay AT. Timolol improves vascular dysfunction via inhibition of oxidative stress in DOCA-salt hypertensive rats, *EPHAR 2016*, June 26-30, İstanbul, Turkey.
12. Arioglu Inan E, Erdogan B, Muderrisoglu E, Karaomerlioglu İ, Kayki-Mutlu G, Onay-Besikci A, Altan VM. The effect of leptin treatment on in vivo cardiac parameters of streptozotocin induced diabetic rats, 9th Annual Meeting of the Diabetes and Cardiovascular Disease, Jun 30-Jul 2 2016, Maffliers-France.
13. Onay-Besikci A, Kayki-Mutlu G, Arioglu Inan E. The Effects of DITPA on Fatty Acid Oxidation in H9C2 Cells. International Workshop on Resistance to Thyroid Hormone Action, September 3-6, 2014 - Madrid, Spain.

14. Amasya G, Sandri G, Onay-Besikci A, Badilli U, Caramella C, Bonferoni C, Tarimci N. Qualitative and Quantitative Skin Effects of Lipid Nanoparticles. AAPS, San Diego, Annual Meeting and Exposition, November 2-6, 2014, San Diego, USA.
15. Badilli U, Onay-Besikci A, Amasya G, Sen T, Tarimci N, In Vitro Antipsoriatic Activity Of Fixed-Dose Combination Of Calcipotriol And Clobetasol Propionate, AAPS Annual Meeting and Exposition, November 2-6, 2014, San Diego, USA.
16. Eycinli AE, Onay A, Altan VM. L-Arjininin stimüle ettiği endotel-bağımsız gevşemelere NO sentaz inhibitörlerinin etkisi. XIII. Ulusal Farmakoloji Kongresi, 4-8 Kasım 1996 – Tekirova, Antalya.
17. Onay-Besikci A, Tuğ T. Antiseptik bazlı çözeltilerin insan keratinosit hücre dizisi (HaCaT) proliferasyonuna etkilerinin karşılaştırılması. KLİMİK 2013 XVI, 13-17 Mart, 2013 – Antalya, Türkiye.
18. Lam VH, Huqi A, Tanner BA, Onay-Besikci A, Keung W, Jaswal JS, Rebeyka IM, Lopaschuk GD. Activating PPAR- α prevents post-ischemic contractile dysfunction in hyperthrophied neonatal hearts . ISHR, North American Section, May 28-31, 2012 - Banff, Alberta, Canada.
19. Onay-Besikci A, Fülöp N, Marchase RB, Chatham JC. Regulation of cardiac substrate utilization by protein O-glycosylation. 5th Annual Meeting of the Society for Heart and Vascular Metabolism: "NEW DEVELOPMENTS IN CARDIAC LIPID METABOLISM: FROM SUBSTRATE TO SIGNALING", June 16-18, 2007 - Maastricht, The Netherlands.
20. Sariahmetoglu M, Koksoy A, Bilginoglu A, Onay-Besikci A, Turan B, Schulz R. Inhibition of matrix metalloproteinases reduces streptozotocin-induced diabetic cardiomyopathy. XIXth World Congress of the International Society for Heart Research, June 22-26 2007 – Bologna, Italy. (Published in JOURNAL OF MOLECULAR AND CELLULAR CARDIOLOGY 42: S169-S170 Suppl. 1, 2007)
21. Fülöp N, Onay-Besikci A, Marchase RB, Chatham JC. Regulation of cardiac substrate utilization by protein O-glycosylation. XIXth World Congress of the International Society for Heart Research, June 22-26 2007 – Bologna, Italy. (Published in JOURNAL OF MOLECULAR AND CELLULAR CARDIOLOGY 42: S64-S64 Suppl. 1, 2007)
22. Onay-Besikci A, Guner S, Arioglu E, Ozakca I, Ozcelikay AT, Altan VM. The Effects of chronic trimetazidine treatment on mechanical parameters and fatty acid oxidation in 14-week diabetic

rat hearts. 4th Annual Meeting of the Society for Heart and Vascular Metabolism: "CARDIAC ENERGY METABOLISM IN HEART FAILURE: FROM CONCEPTS TO THERAPIES", September 6 – 9, 2006 - Semiahmoo, Washington, USA. (Published in CARDIOVASCULAR DRUGS AND THERAPY 20 (6): 417-417, 2006)

23. Guner S, Onay-Besikci A, Arioglu E, Ozakca I, Ozcelikay AT, Altan VM. Substrate metabolism and function of fructose-fed rat heart. 4th Annual Meeting of the Society for Heart and Vascular Metabolism: "CARDIAC ENERGY METABOLISM IN HEART FAILURE: FROM CONCEPTS TO THERAPIES", September 6 – 9, 2006 - Semiahmoo, Washington, USA. (Published in CARDIOVASCULAR DRUGS AND THERAPY 20 (6): 408-408, 2006)
24. Onay-Besikci A, Lopaschuk GD. gAd-globular head domain of adiponectin increases fatty acid oxidation in newborn rabbit hearts. XXVth Annual Meeting of the International Society for Heart Research, June 28- July 1, 2003 – Mystic, Connecticut, USA. (Published in JOURNAL OF MOLECULAR AND CELLULAR CARDIOLOGY 35 (6): P12 JUN 2003)
25. Campbell FM, Onay-Besikci A, Lopaschuk GD. A drop in cardiac malonyl CoA levels is the key determinant in the rapid maturation of fatty acid oxidation in newborn heart. 9th Annual Western Perinatal Research Meeting, February 16-18, 2001 – Banff, Alberta, Canada.
26. Onay-Besikci A, Campbell FM, Lopaschuk GD. Control of the fatty acid transport into the mitochondria of newborn rabbit hearts. 8th Annual Western Perinatal Research Meeting, February 18-20, 2000 – Banff, Alberta, Canada.
27. Campbell FM, Onay-Besikci A, Lopaschuk GD. Maturation of fatty acid oxidation in newborn heart. Canadian Cardiovascular Congress, October 29- November 1, 2000 – Vancouver, British Columbia, Canada.
28. Onay A, İrat AM, Altan VM. Hipergliseminin endotel-bağımlı ve endotel-bağımsız vasküler gevşeme yanıtları üzerine etkileri. XIV. Ulusal Farmakoloji Kongresi, 2-7 Kasım 1997 – Tekirova, Antalya.
29. Dinçer ÜD, Özaydın FN, Onay A, Arı (Yıldızoğlu) N, Altan VM. Diabetin β-adrenoseptor aracılı atrial yanıtverirlik üzerindeki etkileri. XIII. Ulusal Farmakoloji Kongresi, 4-8 Kasım 1996 – Tekirova, Antalya.

IV. ORAL PRESENTATIONS

1. Kara Z, Güven B, Onay-Besikci A. Investigation of the Pleiotropic Vascular Effects of Ivabradine in Control and Diabetic Rats, 20th Annual Meeting of European Council for Cardiovascular Research, ECCR, October 14-16, 2016, Lake Garda, Poiano, Italy.
2. Onay-Besikci A. Pharmacist Redefined: Possible Impact of Specialization in Clinical Pharmacy on Pharmacy Education and Practice, DRD 2015—International Multidisciplinary Symposium on Drug Research and Development, October 15-17, 2015 – Eskişehir, Turkey.
3. Onay-Besikci A. Using drugs rationally: What did we learn? How do we utilize our knowledge? EAFFP2013, May 16-18, 2013 - Ankara, Turkey.
4. Onay-Besikci A. Trimetazidine revisited: Current and future applications of metabolic modulation of the heart. EHRLICH II, October 3-5, 2008 – Nürnberg, Germany.
5. Onay-Besikci A, Altarejos JY, Lopaschuk GD. The gAd- Globular head domain of adiponectin improves mechanical function of the rabbit heart by stimulating glucose oxidation. Scientific Sessions of the American Heart Association, November 17-20, 2002 – Chicago, Illinois. (Published in CIRCULATION 106 (19): 1316 Suppl. S NOV 5, 2002)

AWARDS

- PhD Scholarship, Higher Education Council of Turkey, 1998-2000
- Alberta Heritage Foundation For Medical Research, 2002
- Basic Research Trainee Award by the American Heart Association (AHA) for the abstract "The gAd-globular head domain of adiponectin improves mechanical function of the rabbit heart by stimulating glucose oxidation", 2002
- J Gordon Kaplan Graduate Student Award by University of Alberta
- The Scientific and Technological Research Council of Turkey-Postdoctoral Research Award, 2006
- Prof.Dr. R. Kazim Turker Young Investigator Award by Turkish Pharmacological Society , 2008

FUNDED PROJECTS

- TUBITAK (Scientific and Technological Research Council of Turkey) - SBAG 1001, "A Metabolic Approach in the Treatment of Diabetes-induced Dysfunction in the Rat Heart", 2004-2006 (Principle Investigator)
- TUBITAK (Scientific and Technological Research Council of Turkey) - SBAG 108S105, "The Effects of Beta Blockers on Substrate Metabolism in Myocyte Cell Culture", 2008- 2009 (Principle Investigator)
- TUBITAK (Scientific and Technological Research Council of Turkey) - SBAG 1001, "Preparation of Niozomal Paclitaxel Formulations and Evaluation of Their in vivo and in vitro Behaviors" 2007- 2010 (Investigator)
- TUBITAK (Scientific and Technological Research Council of Turkey) - SBAG-110S409, "Evaluation of the In Vitro Antipsoriatic Efficacy of A Fixed-Dose Combination of Calcipotriol and Clobetasol Propionate on Human Epidermal Keratinocyte Cells", 2011- 2013 (Principle Investigator)
- TUBITAK (Scientific and Technological Research Council of Turkey) - SBAG-113S201, "Preparation and Characterization of One Dimensional Polymeric Nanostructures for Drug Release", 2013-2015 (Investigator)
- TUBITAK (Scientific and Technological Research Council of Turkey) - 213M689, "Development of Nanofiber Based Wound Dressing Prepared by Electrospinning for Chronic Wound Treatment", 2014-2016 (Scientific Advisor)
- TUBİTAK (Scientific and Technological Research Council of Turkey) – SBAG-214S574, "Synthesis of Some New Benzimidazol Derivatives and Evaluation of Their Effects on EGFR Kinase Activity", 2015-2016 (Investigator)
- TUBİTAK (Scientific and Technological Research Council of Turkey) – SBAG-115S564, "The Possible Effects of Leptin on Beta Adrenergic Receptor Responses in Streptozotocin Diabetic Rats", 2015-2018 (Investigator)
- TUBITAK (Scientific and Technological Research Council of Turkey) - SBAG-116S631, "Investigation of the Cardiovascular Pleiotropic Effects and Mechanisms of Ivabradine in Streptozotocin-Induced Diabetes Model", 2017- (Principle Investigator)
- Ankara University, Scientific Projects – 17H0237004, "Investigation of the Contribution of Beta Arrestin Proteins on Cardiovascular and Metabolic Effects of Carvedilol", 2017-2019 (Principle Investigator)
- TUBİTAK (Scientific and Technological Research Council of Turkey) – SBAG- 117S967, "Development And In Vitro - In Vivo Evaluation Of Topical Corticosteroid Loaded Semisolid Lipid Nanoparticle Dispersions For Treatment Of Atopic Dermatitis", 2017- (Scientific Advisor)
- TUBİTAK (Scientific and Technological Research Council of Turkey) – SBAG – 217S961, "Carvedilol As A Biased Agonist: Evaluation of Metabolic Outcomes and Mitochondrial Biogenesis in Cell Lines", 2018-2019 (Principle Investigator)

- TUBİTAK (Scientific and Technological Research Council of Turkey) – SBAG- 319S019, "Quinolone Use and QT Interval Prolongation: Risk Assessment and Possible Role of Clinical Pharmacist", 2020- (Principle Investigator)

TEACHING

I. Undergraduate

Introduction to Pharmacology

Ankara University, Faculty of Pharmacy

Pharmacology I, II, III

Ankara University, Faculty of Pharmacy

OTC DRUGS

Ankara University, Faculty of Pharmacy

Pharmaceutical Care

Ankara University, Faculty of Pharmacy

Pharmacology I-II

Ankara University, Faculty of Health Sciences, Midwifery Program

Practical Drug Information I-II

Ankara University, Vocational School of Health, Pharmacy Services

II. Graduate

Pharmacology of the Autonomic Nervous System

Signal Transduction Mechanisms

Molecular Pharmacology

Drug-Receptor Interactions

Diabetes-induced Metabolic Alterations

Biochemical Basis of Diabetic Complications

Ankara University, Graduate School of Health Sciences

ADMINISTRATIVE

Organization/Scientific Committee Member

11th International Symposium of Pharmaceutical Sciences

2015

Chair		
Department of Pharmacology, Faculty of Pharmacy, Ankara University		2016-
Chair		
Clinical Pharmacy Division, Department of Pharmacology, Ankara University		2014-2020
Board member		
Ankara University, Faculty of Pharmacy		2009-2014
Institutional Coordinator of Mevlana Exchange Program		2014- 2016
Ankara University		
Symposium Secretary and Organization/Scientific Committee Member		
10 th International Symposium of Pharmaceutical Sciences		2012
Vice Coordinator of Mevlana Exchange Program		2013-2014
Organization Committee Member		
9 th International Symposium of Pharmaceutical Sciences		2009
Vice Coordinator of Erasmus Program		2008-2013
Ankara University, Faculty of Pharmacy		
Organization Committee Member		
8 th International Symposium of Pharmaceutical Sciences		2006