

Department of Pharmaceutical Biotechnology
(JP-Ege University)

Supervisors

Prof. Ayşe Gülten KANTARCI
Prof. Zeki TOPÇU
Assoc. Prof. Ali Demir SEZER
Assist. Prof. Suna ÖZBAŞ TURAN
Assist. Prof. Yücel BAŞPINAR
Assist. Prof. Bilge DEBELEÇ BÜTÜNER

Research Areas:

Peptide and protein formulation and stability
Recombinant DNA technology and drugs produced with this technology
Nanobiotechnology
Gene carrier systems
Antisense technology
Vaccine technology
Biomaterials
Validation in pharmaceutical biotechnology, GMP applications
Interaction of anticancer compounds with topoisomerases
Yeast-2-hybrid systems
Protein-protein and DNA-protein interactions
DNA delivery systems
Active drug targeting,
Magnetic nanoparticles, solid lipid nanoparticles, liposomes, niosomes, microemulsions
Peptide-protein formulations
Exosomes in drug and gene delivery
T-cell therapies
Inflammation and cancer relationship

Recent Publications (2013- 2016)

- Cetin EO, Gundogdu E, Baspinar Y, Karasulu E, Kirilmaz L. Novel application of Eudragit RL and cholesteryl oleyl carbonate to thermo-sensitive drug delivery system. Drug Dev Ind Pharm. 2013 Dec;39(12):1881-1886. doi:

10.3109/03639045.2012.662504. PMID: 22397637

- Senarisoy M, Canturk P, Zencir S, Baran Y, Topcu Z. Gossypol interferes with both type I and type II topoisomerase activities without generating strand breaks. *Cell Biochem Biophys*. 2013;66(1):199-204. doi: 10.1007/s12013-012-9468-5. PMID: 23161103
- Zencir S, Sike A, Dobson MJ, Ayaydin F, Boros I, Topcu Z. Identification of transcriptional and phosphatase regulators as interaction partners of human ADA3, a component of histone acetyltransferase complexes. *Biochem J*. 2013;450(2):311-320. doi: 10.1042/BJ20120452. PMID: 23167988
- Zencir S, Banerjee M, Dobson MJ, Ayaydin F, Fodor EA, Topcu Z, Mohanty S. New partner proteins containing novel internal recognition motif for human glutaminase interacting protein (hGIP). *Biochem Biophys Res Commun*. 2013;432(1):10-15. doi: 10.1016/j.bbrc.2013.01.098. PMID: 23395680
- Kotmakçı M, Kantarcı G, Aşıkoğlu M, Ozkılıç H, Ertan G. Determination of in vivo behavior of mitomycin C-loaded o/w soybean oil microemulsion and mitomycin C solution via gamma camera imaging. *Cancer Biother Radiopharm*. 2013;28(7):530-533. doi: 10.1089/cbr.2012.1428. PMID: 23659461
- Şalva E, Turan SÖ, Akbuğa J. The development of ternary nanoplexes for efficient small interfering RNA delivery. *Biol Pharm Bull*. 2013;36(12):1907-1914. doi: 10.1248/bpb.b13-00438 PMID:24432377
- Debelec-Butuner B, Alapinar C, Varisli L, Erbaykent-Tepedelen B, Hamid SM, Gonen-Korkmaz C, Korkmaz KS. Inflammation-mediated abrogation of androgen signaling: an in vitro model of prostate cell inflammation. *Mol Carcinog*. 2014;53(2):85-97. doi: 10.1002/mc.21948. PMID: 22911881
- Hamid SM, Cicek S, Karamil S, Ozturk MB, Debelec-Butuner B, Erbaykent-Tepedelen B, Varisli L, Gonen-Korkmaz C, Yorukoglu K, Korkmaz KS. HOXB13 contributes to G1/S and G2/M checkpoint controls in prostate. *Mol Cell Endocrinol*. 2014;383(1-2):38-47. doi: 10.1016/j.mce.2013.12.003. PMID: 24325868
- Zupkó I, Molnár J, Réthy B, Minorics R, Frank E, Wölfling J, Molnár J, Ocsovszki I, Topcu Z, Bitó T, Puskás LG. Anticancer and multidrug resistance-reversal effects of solanidine analogs synthesized from pregnadienolone acetate. *Molecules*. 2014;19(2):2061-2076. doi: 10.3390/molecules19022061. PMID: 24549231
- Guler E, Barlas FB, Yavuz M, Demir B, Gumus ZP, Baspinar Y, Coskunol H, Timur S. Bio-active nanoemulsions enriched with gold nanoparticle, marigold extracts and lipoic acid: In vitro investigations. *Colloids Surf B Biointerfaces*. 2014;121:299-306. doi: 10.1016/j.colsurfb.2014.05.026. PMID: 25009101
- Debelec-Butuner B, Alapinar C, Ertunc N, Gonen-Korkmaz C, Yörükoğlu K, Korkmaz KS. TNF α -mediated loss of β -catenin/E-cadherin association and subsequent increase in cell migration is partially restored by NKX3.1 expression in prostate cells. *PLoS One*. 2014;9(10):e109868. doi: 10.1371/journal.pone.0109868. PMID: 25360740
- Şalva E, Turan SÖ, Eren F, Akbuğa J. The enhancement of gene silencing efficiency

with chitosan-coated liposome formulations of siRNAs targeting HIF-1 α and VEGF. *Int J Pharm.* 2015;478(1):147-154. doi: 10.1016/j.ijpharm.2014.10.065. PMID: 25445537

- Akgemci EG, Saf AO, Tasdemir HU, Türkkkan E, Bingol H, Turan SO, Akkiprik M. Spectrophotometric, voltammetric and cytotoxicity studies of 2-hydroxy-5-methoxyacetophenone thiosemicarbazone and its N(4)-substituted derivatives: a combined experimental-computational study. *Spectrochim Acta A Mol Biomol Spectrosc.* 2015;136 Pt B:719-725. doi: 10.1016/j.saa.2014.09.087. PMID: 25448971
- Debelec-Butuner B, Ertunc N, Korkmaz KS. Inflammation contributes to NKX3.1 loss and augments DNA damage but does not alter the DNA damage response via increased SIRT1 expression. *J Inflamm (Lond).* 2015;12:12. doi: 10.1186/s12950-015-0057-4. PMID: 25705129
- Zupkó I, Jaeger W, Topcu Z, Wu CC. Anticancer Properties of Natural Products. *Biomed Res Int.* 2015;2015:242070. doi: 10.1155/2015/242070. PMID: 26078939
- Manda G, Isvoranu G, Comanescu MV, Manea A, Debelec Butuner B, Korkmaz KS. The redox biology network in cancer pathophysiology and therapeutics. *Redox Biol.* 2015;5:347-57. doi: 10.1016/j.redox.2015.06.014. PMID: 26122399
- Şalva E, Turan SÖ, Ekentok C, Akbuğa J. Generation of stable cell line by using chitosan as gene delivery system. *Cytotechnology.* 2016;68(4):1033-1038. doi: 10.1007/s10616-015-9859-8. PMID: 26134852
- Sezer AD, Kazak Sarılmışer H, Rayaman E, Çevikbaş A, Öner ET, Akbuğa J. Development and characterization of vancomycin-loaded levan-based microparticulate system for drug delivery. *Pharm Dev Technol.* 2015;25:1-8. doi:10.3109/10837450.2015.1116564. PMID:26607946
- Vann KR, Ekiz G, Zencir S, Bedir E, Topcu Z, Osheroff N. Effects of Secondary Metabolites from the Fungus *Septofusidium berolinense* on DNA Cleavage Mediated by Human Topoisomerase II α . *Chem Res Toxicol.* 2016;29(3):415-420. doi: 10.1021/acs.chemrestox.6b00009. PMID: 26894873
- Vann KR, Ergün Y, Zencir S, Oncuoglu S, Osheroff N, Topcu Z. Inhibition of human DNA topoisomerase II α by two novel ellipticine derivatives. *Bioorg Med Chem Lett.* 2016;26(7):1809-1812. doi: 10.1016/j.bmcl.2016.02.034. PMID: 26906637
- Debelec-Butuner B, Bostancı A, Heiserich L, Eberle C, Ozcan F, Aslan M, Roggenbuck D, Korkmaz KS. Automated Cell-Based Quantitation of 8-OHdG Damage. *Methods Mol Biol.* 2016;1516:299-308. doi: 10.1007/7651_2016_344. PMID: 27044043
- Kotmakçı M, Akbaba H, Erel G, Ertan G, Kantarcı G. Improved Method for Solid Lipid Nanoparticle Preparation Based on Hot Microemulsions: Preparation, Characterization, Cytotoxicity, and Hemocompatibility Evaluation. *AAPS PharmSciTech.* 2016; pp 1-11. doi:10.1208/s12249-016-0606-z. PMID: 27502405
- Salva E, Turan SÖ, Akbuğa J. Inhibition of Glomerular Mesangial Cell Proliferation by siPDGF-B- and siPDGFR- β -Containing Chitosan Nanoplexes. *AAPS PharmSciTech.* 2016; pp 1-12. doi:10.1208/s12249-016-0687-8. PMID: 27975193