

# GAMZE VARAN

## ASST. PROF.

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: AAA-8410-2020

ScopusID: 57191221798

Yoksis Researcher ID: 336024

### Education

Doctorate 2013 - 2018	Hacettepe University, Fen Bilimleri Enstitüsü, Nanoteknoloji ve Nanotıp A.B.D., Turkey
Postgraduate 2010 - 2013	Hacettepe University, Fen Bilimleri Enstitüsü, Nanoteknoloji ve Nanotıp A.B.D., Turkey
Undergraduate 2005 - 2010	Hacettepe University, Fen Fakültesi, Biyoloji Bölümü, Turkey

### Academic Titles / Tasks

Assistant Professor 2021 - Continues	Hacettepe University, Vaccine Institute
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### Supported Projects

- ÇETİNKAYA F. D., OKUR F. V., BİLENSOY E., ALPDÜNDAR BULUT E., VARAN G., SOYDAM S., Project Supported by Higher Education Institutions, Kök Hücre, Hücre-Gen Tedavilerine Yönelik Ar-Ge ve Üretim Alt Yapısı Oluşturulması Amacıyla Kök Hücre Araştırma ve Uygulama Merkezinde Güncel Standartlara Uygun Düzenlemeler Yapılması, 2024 - Continues
- ÜNAL S., Türegün Atasoy B., VARAN G., AYDIN S., DURUSU TANRIÖVER M., Project Supported by Higher Education Institutions, Dang Hummasına Karşı Rekombinant Tetravalan Nanopartiküler Aşı Formülasyonu Geliştirilmesi ve in vitro/ in vivo Etkinliğinin Değerlendirilmesi, 2024 - Continues
- VARAN G., Rezvankhah A., Project Supported by Higher Education Institutions, EpsteinBarr Virüsüne Karşı Nanopartikül Temelli Alt Birim Aşı Formülasyonu Geliştirilmesi ve in vitro Değerlendirilmesi, 2024 - Continues
- VARAN G., AYDIN S., ÜNAL S., Project Supported by Higher Education Institutions, Nanopartikül Temelli Evrensel İnfluenza Aşısı Geliştirme Çalışmaları, 2023 - Continues
- ÜNAL S., AYDIN S., VARAN G., ESENDAĞLI G., Türegün Atasoy B., Project Supported by Higher Education Institutions, Tüberküloza karşı rekombinant protein temelli booster aşı adayı geliştirilmesi ve immünojenite çalışmaları, 2023 - Continues

6. DURUSU TANRIÖVER M., SOYDAM S., VARAN G., Project Supported by Higher Education Institutions, Dış membran veziküllerinin kullanıldığı yeni nesil meningokok aşısının geliştirilmesi, 2022 - Continues
7. BİLENSOY E., VARAN G., VARAN C., Demirtürk N., H2020 Project, Breaking down barriers to foster new Cyclodextrin-based applications for healthcare by implementing sustainable design principles, 2023 - 2027
8. Varan G., Bilensoy E., Olğaç A., Canpınar H., Teksin Z. Ş., TUBITAK Project, Böbrek kanseri tedavisi için moleküler dinamik simülasyonlar kullanılarak rekombinant insan interlökin-2 içeren oral nano ilaç taşıyıcı sistemlerin geliştirilmesi ve in vitro - in vivo değerlendirilmesi, 2023 - 2026
9. Aydın S., Ünal S., Tatar Yılmaz G., Özçubukçu S., Özkul A., Esendağlı G., Varan G., Research Project of the Presidency of Turkey Health Institutes (TÜSEB), Covid 19'a Karşı Multiepitop (Wuhan, Delta, Omicron B.A/5 ) Sentetik Peptit Aşısı Araştırma Geliştirme Çalışması, 2023 - 2025
10. Varan C., Bilensoy E., İskit A. B., Varan G., Kaplan O., Esendağlı G., Çelebier M., TUBITAK Project, Preparation and in vitro-in vivo evaluation of sorafenib delivery systems based on exosomes and liposomes for hepatocellular carcinoma treatment, 2022 - 2025
11. Aydın S., Varan G., Ünal S., Research Project of the Presidency of Turkey Health Institutes (TÜSEB), Alt Birim Monkeypox Aşısı Araştırma ve Geliştirme Çalışması, 2023 - 2024
12. Varan G., Ünal S., Soydam S., Emergency R&D Project of Group A, Alt Birim Maymun Çiçeği Aşısı Araştırma ve Geliştirme Çalışması, 2023 - 2024
13. Varan G., TUBITAK Project, Eksemestan Yüklü Kendiliğinden Emülsifiye İlaç Taşıyıcı Sistemlerin İn vitro - İn situ Değerlendirilmesi, 2023 - 2024
14. BİLENSOY E., VARAN G., VARAN A., BARIŞTA İ., TUBITAK Project, Non-Hodgkin Lenfoma Tedavisinde İlaç Direncini Yenmek Amacıyla Aktif Hedeflendirilmiş, Çoklu İlaç Yüklü Nanopartiküllerin Geliştirilmesi ve İn vitro- İn vivo Etkinlik ve Güvenliliğinin Değerlendirilmesi, 2021 - 2024
15. ÜNAL S., ÇALIŞKAN Z., ERKEKOĞLU Ü. P., NEMUTLU E., VARAN G., AYDIN S., AKIN L., Project Supported by Higher Education Institutions, Yerli Aşı Çalışmaları Mükemmeliyet Merkezi, 2021 - 2023
16. Varan G., Bilensoy E., Esendağlı G., Öztürk S. C., Project Supported by Other Official Institutions, Aktif Hedeflendirilmiş, Gemsitabin ve Paklitaksel yüklü Siklodekstrin Nanopartiküllerin Pankreas Kanseriindeki Etkinliğinin in vitro ve in vivo Değerlendirilmesi, 2021 - 2023
17. ÜNAL S., VARAN G., AYDIN S., ERKEKOĞLU Ü. P., İNKAYA A. Ç., ERGÜNAY K., AKIN L., Project Supported by Other Official Institutions, COVID-19'a karşı Peptit Temelli Aşı Araştırma ve Geliştirme Çalışmaları, 2020 - 2021

## Published journal articles indexed by SCI, SSCI, and AHCI

1. **Optimization and characterization of Rituximab targeted multidrug loaded cyclodextrin nanoparticles against Non-Hodgkin Lymphoma**  
Demirturk N., VARAN G., KAĞA S., Malanga M., BİLENSOY E.  
INTERNATIONAL JOURNAL OF PHARMACEUTICS, vol.662, 2024 (SCI-Expanded)
2. **Folate Receptor  $\beta$  (FR $\beta$ ) Expression on Myeloid Cells and the Impact of Reticuloendothelial System on Folate-Functionalized Nanoparticles' Biodistribution in Cancer**  
Goksen S., Varan G., Bilensoy E., Esendagli G.  
MOLECULAR PHARMACEUTICS, no.9, pp.4688-4699, 2024 (SCI-Expanded)
3. **In vitro and ex vivo evaluation of chitosan gel containing metformin-loaded polymeric nanoparticles for topical treatment of melanoma**  
Eke Z., Orgul D., VARAN G., ERDOĞDU N.  
DRUG DEVELOPMENT AND INDUSTRIAL PHARMACY, no.7, pp.593-604, 2024 (SCI-Expanded)
4. **Synergistic Antitumor Potency of a Self-Assembling Cyclodextrin Nanoplex for the Co-Delivery of 5-Fluorouracil and Interleukin-2 in the Treatment of Colorectal Cancer**  
Akkin S., Varan G., Işık A., Gökşen S., Karakoç E., Malanga M., Esendağlı G., Korkusuz P., Bilensoy E.  
PHARMACEUTICS, vol.15, no.2, pp.1-23, 2023 (SCI-Expanded)
5. **Insight into oral amphiphilic cyclodextrin nanoparticles for colorectal cancer: comprehensive mathematical model of drug release kinetic studies and antitumoral efficacy in 3D spheroid colon**

## tumors

ÜNAL S., VARAN G., Benito J. M., AKTAŞ Y., BİLENSOY E.

Beilstein Journal of Organic Chemistry, vol.19, pp.139-157, 2023 (SCI-Expanded)

6. **A different approach to immunochemotherapy for colon Cancer: Development of nanoplexes of cyclodextrins and Interleukin-2 loaded with 5-FU**  
Akkin S., VARAN G., AKSÜT D., Malanga M., ERCAN A., ŞEN M., BİLENSOY E.  
INTERNATIONAL JOURNAL OF PHARMACEUTICS, vol.623, 2022 (SCI-Expanded)
7. **A Review on Cancer Immunotherapy and Applications of Nanotechnology to Chemoimmunotherapy of Different Cancers**  
Akkin S., VARAN G., BİLENSOY E.  
MOLECULES, vol.26, no.11, 2021 (SCI-Expanded)
8. **Polycationic cyclodextrin nanoparticles induce apoptosis and affect antitumoral activity in HepG2 cell line: An evaluation at the molecular level**  
ERCAN A., ÇELEBİER M., ÖNCÜL S., VARAN G., KOÇAK E., Benito J. M., BİLENSOY E.  
International Journal of Pharmaceutics, vol.598, 2021 (SCI-Expanded)
9. **Erlotinib entrapped in cholesterol-depleting cyclodextrin nanoparticles shows improved antitumoral efficacy in 3D spheroid tumors of the lung and the liver**  
Varan G., Demirturk N., Benito J. M., BİLENSOY E.  
Journal of Drug Targeting, vol.29, no.4, pp.439-453, 2021 (SCI-Expanded)
10. **Therapeutic efficacy and biodistribution of paclitaxel-bound amphiphilic cyclodextrin nanoparticles: Analyses in 3D tumor culture and tumor-bearing animals in vivo**  
Varan G., Varan C., Öztürk S. C., Benito J. M., Esendağlı G., Bilensoy E.  
Nanomaterials, vol.11, no.2, pp.1-18, 2021 (SCI-Expanded)
11. **Erlotinib complexation with randomly methylated beta-cyclodextrin improves drug solubility, intestinal permeability, and therapeutic efficacy in non-small cell lung cancer**  
Erdogar N., Akkin S., VARAN G., BİLENSOY E.  
PHARMACEUTICAL DEVELOPMENT AND TECHNOLOGY, vol.26, pp.797-806, 2021 (SCI-Expanded)
12. **Cyclodextrin-Based Nanosystems: Current Status and Future Prospects**  
VARAN C., Varan G., Erdogar N., BİLENSOY E.  
DRUG DELIVERY NANOSYSTEMS: FROM BIOINSPIRATION AND BIOMIMETICS TO CLINICAL APPLICATIONS, pp.29-58, 2019 (SCI-Expanded)
13. **Plant-Based Natural Polymeric Nanoparticles as Promising Carriers for Anticancer Therapeutics**  
Varan G., VARAN C., BİLENSOY E.  
POLYMERIC NANOPARTICLES AS A PROMISING TOOL FOR ANTI-CANCER THERAPEUTICS, pp.293-318, 2019 (SCI-Expanded)
14. **Global omics strategies to investigate the effect of cyclodextrin nanoparticles on MCF-7 breast cancer cells**  
ERCAN A., ÇELEBİER M., VARAN G., ÖNCÜL S., Nenni M., KAPLAN O., BİLENSOY E.  
European Journal of Pharmaceutical Sciences, vol.123, pp.377-386, 2018 (SCI-Expanded)
15. **Cellular interaction and tumoral penetration properties of cyclodextrin nanoparticles on 3D breast tumor model**  
Varan G., Patrulea V., Borchard G., BİLENSOY E.  
Nanomaterials, vol.8, no.2, 2018 (SCI-Expanded)
16. **Cyclodextrin-based polymeric nanosystems**  
Erdogar N., Varan G., VARAN C., BİLENSOY E.  
DRUG TARGETING AND STIMULI SENSITIVE DRUG DELIVERY SYSTEMS, pp.715-748, 2018 (SCI-Expanded)
17. **Amphiphilic cyclodextrin nanoparticles**  
VARAN G., VARAN C., ERDOĞAR N., Hincal A. A., BİLENSOY E.  
International Journal of Pharmaceutics, vol.531, no.2, pp.457-469, 2017 (SCI-Expanded)
18. **Amphiphilic cyclodextrin derivatives for targeted drug delivery to tumors**  
ERDOĞAR N., VARAN G., BİLENSOY E.

- Current Topics in Medicinal Chemistry, vol.17, no.13, pp.1521-1528, 2017 (SCI-Expanded)
19. **Development of polycationic amphiphilic cyclodextrin nanoparticles for anticancer drug delivery**  
Varan G., Benito J. M., Mellet C. O., BİLENSOY E.  
Beilstein Journal of Nanotechnology, vol.8, no.1, pp.1457-1468, 2017 (SCI-Expanded)
  20. **Cholesterol-Targeted Anticancer and Apoptotic Effects of Anionic and Polycationic Amphiphilic Cyclodextrin Nanoparticles**  
VARAN G., ÖNCÜL S., ERCAN A., BENITO J. M., MELLET C. O., BİLENSOY E.  
Journal of Pharmaceutical Sciences, vol.105, no.10, pp.3172-3182, 2016 (SCI-Expanded)
  21. **Cationic polymer nanoparticles for drug and gene delivery**  
BİLENSOY E., IŞIK G., VARAN C.  
RSC Polymer Chemistry Series, no.13, pp.268-295, 2015 (SCI-Expanded)

## Articles Published in Other Journals

1. **Influenza/B Yamagata Strain and Influenza Vaccines**  
SOYDAM S., VARAN G., ÜNAL S.  
FLORA INFEKSIYON HASTALIKLARI VE KLINIK MIKROBIYOLOJİ DERGİSİ, vol.29, no.2, pp.165-171, 2024 (ESCI)
2. **Cyclodextrin in Vaccines: Enhancing Efficacy and Stability**  
VARAN G.  
FUTURE PHARMACOLOGY, no.3, pp.597-611, 2023 (ESCI)
3. **Three-Dimensional Cell Culture Methods in Infectious Diseases and Vaccine Research**  
Varan G., Unal S.  
Future Pharmacology, vol.3, no.1, pp.48-60, 2023 (Peer-Reviewed Journal)
4. **Peptide Based Vaccine Strategies**  
AYDIN S., VARAN G., ÜNAL S.  
FLORA INFEKSIYON HASTALIKLARI VE KLINIK MIKROBIYOLOJİ DERGİSİ, vol.27, no.2, pp.189-195, 2022 (ESCI)
5. **COVID-19 Vaccine Development Studies and Nanotechnology Approaches**  
VARAN G., AYDIN DİLSİZ S., ÜNAL S.  
FLORA INFEKSIYON HASTALIKLARI VE KLINIK MIKROBIYOLOJİ DERGİSİ, no.4, pp.519-526, 2022 (ESCI)

## Books

1. **Folate receptor-mediated targeted breast cancer nanomedicine**  
Varan G., Varan C., Erdoğan N., Bilensoy E.  
in: Targeted Nanomedicine for Breast Cancer Therapy, Shivani Rai Paliwal, Rishi Paliwal, Editor, Academic Press, London, pp.153-169, 2022
2. **Biodistribution of polymeric, polysaccharide and metallic nanoparticles**  
Erdoğan N., Varan G., Varan C., Bilensoy E.  
in: Characterization of Pharmaceutical Nano- and Microsystems, Peltonen Leena, Douroumis Dennis, Fahr Alfred, Siepmann Jürgen, Snowden Martin J., Editor, John Wiley & Sons, West Sussex, UK, Cambridge, pp.275-290, 2020
3. **Cyclodextrin Based Nano-Systems: Current Status and Future Prospects**  
VARAN C., VARAN G., ERDOĞAR N., BİLENSOY E.  
in: Drug Delivery Nanosystems: From Bioinspiration and Biomimetics to Clinical Applications, Pippa Natassa, Demetzos Costas, Pispas Stergios, Editor, Pan Stanford, pp.29-49, 2019
4. **Plant based natural polymer (Guar gum, pectin, starch, cellulose, cyclodextrins) nanoparticles as promising tool for anticancer therapeutics**  
VARAN G., VARAN C., BİLENSOY E.  
in: Polymeric Nanoparticles as a Promising Tool for Anti-cancer Therapeutics, Prashant Kesharwani, Kishore M.

Paknikar, Virendra Gajbhiye, Editor, Academic Press, 2019

5. **Cyclodextrin-based polymeric nanosystems**

ERDOĞAR N., VARAN G., VARAN C., BİLENSOY E.

in: Drug Targeting and Stimuli Sensitive Drug Delivery Systems, Alina M. Holban, Editor, William Andrew, pp.715-748, 2018

## Papers Published in Refereed Scientific Meetings

1. **Development and Characterization of Erlotinib-Randomly Methylated- $\beta$ -cyclodextrin Complex for the Treatment of Non-small Lung Cancer**

ERDOĞDU N., Akkın S., VARAN G., BİLENSOY E.

13th International symposium of Pharmaceutical Science, Ankara, Turkey, 22 - 25 June 2021

2. **A Metabolomic Study to Investigate the Effect of Folate Conjugated Nanoparticles on Triple Negative Breast Cancer Cells**

ERCAN A., ÇELEBİER M., varol ı., KAPLAN O., Varan G., ÖNCÜL S., KOÇAK E., BİLENSOY E.

EUFEPS Annual Meeting 2019 PERSONALIZED MEDICINES, TARGETED THERAPIES, PRECISION DRUG DELIVERY, 6 - 08 March 2019

3. **The effect of polycationic amphiphilic cyclodextrin nanoparticles on mda-mb cancer cells: A metabolomic approach to understand the mechanism**

ÇELEBİER M., KAPLAN O., VARAN G., ÖNCÜL S., KOÇAK E., ERCAN A., BİLENSOY E.

12 th International symposium on pharmaceutical sciences, 26 June 2018

4. **GENOMIC AND METABOLOMIC STUDIES OF POLYCATIONIC AMPHIPHILIC CYCLODEXTRIN NANOPARTICLES ON HEPG2 CELL LINE**

ERCAN A., ÇELEBİER M., Varan G., ÖNCÜL S., KOÇAK E., KAPLAN O., BİLENSOY E.

EUFEPS Annual Meeting 2018 Crossing Barriers for Future Medicines, 24 - 26 May 2018

5. **Evaluation of Cholesterol-Targeted Amphiphilic Cyclodextrin Nanoparticles for Cancer Therapy**

VARAN G., ÖNCÜL S., ERCAN A., BENİTO J., MELLET C. O., BİLENSOY E.

Innovation in Medicine Meetings III Congress, 11 - 13 May 2017

## Metrics

Publication: 36

Citation (WoS): 203

Citation (Scopus): 229

H-Index (WoS): 7

H-Index (Scopus): 8

## Research Areas

Health Sciences

## Non Academic Experience

Cenevre Üniversitesi, Biyofarmasötik Bilimler Bölümü, Doktora Sırası Araştırmacı