

# Prof. NÜLÜFER TÜLÜN GÜRAY

## Personal Information

**Office Phone:** [+90 312 210 5199](tel:+903122105199)

**Email:** [guray@metu.edu.tr](mailto:guray@metu.edu.tr)

**Web:** <https://avesis.metu.edu.tr/guray>

**Address:** Biyolojik Bilimler Bölümü, ODTÜ, Dumlupınar Bulvarı, Üniversiteler Mah., No:1 06800-Çankaya-Ankara

## Education Information

Doctorate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biochemistry, Turkey  
1983 - 1989

Post Graduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Turkey 1981 - 1983

Under Graduate, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Biology, Turkey 1977 -  
1981

## Dissertations

Doctorate, Purification and spectral and catalytic characterization of NADH-cytochrome b5 reductase from lung  
microsomes, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biochemistry, 1989

Post Graduate, Partial purification of insulin from beef pancreas, Middle East Technical University, Graduate School Of  
Natural And Applied Sciences, 1983

## Research Areas

Natural Sciences

## Academic Titles / Tasks

Professor, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Biology, 1999 - Continues

Associate Professor, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Biology, 1994 - 1999

Research Assistant, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Biology, 1983 - 1992

## Professional Experience

Vice Dean, Middle East Technical University, Faculty of Arts and Sciences, 2009 - 2012

## Advising Theses

VOLKAN M., GÜRAY N. T. , Investigation of in vitro cytotoxic effects of heparin coated iron oxide nanoparticles combined  
with TPP-DCA on human hepatocellular carcinoma cell line HEPG2, Post Graduate, B.EZGİ(Student), 2018

GÜRAY N. T. , AYDIN SON Y., Investigation of the in vitro cytotoxic effects of boron on human hepatocellular carcinoma  
cell line, HepG2, Post Graduate, H.ÇÖPOĞLU(Student), 2017

GÜRAY N. T. , Drug metabolism and apoptosis in HEPG2 cell line, Post Graduate, S.RUSTAM(Student), 2017  
VOLKAN M., GÜRAY N. T. , Heparin coated and 2-deoxy-D-glucose conjugated iron oxide nanoparticles for biologic applications, Doctorate, Y.AKPINAR(Student), 2017  
GÜRAY N. T. , Antioxidant properties of salvia absconditiflora extracts and their effects on phase I and phase II gene expressions in HepG2 cell line, Doctorate, D.İRTEM(Student), 2015  
VOLKAN M., GÜRAY N. T. , Applications of the multifunctional magnetic nanoparticles for development of molecular therapies for the breast cancer, Doctorate, E.AŞIK(Student), 2015  
GÜRAY N. T. , Studies on the molecular mechanism of the drug metabolism in prostate cancer, PC3 cell lines, Doctorate, D.DİLEK(Student), 2014  
GÜRAY N. T. , Effect of emodin on doxorubicin induced cytotoxicity and apoptosis in MCF-7 and MCF-10A cells, Post Graduate, B.KAYA(Student), 2014  
GÜRAY N. T. , The effect of Salvia absconditiflora extract on the gene expressions of GSTO1 and GSTZ1 in MCF-7 and MDA-MB-231 cells, Post Graduate, N.DENİZ(Student), 2013

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- **In vitro effects of boric acid on human liver hepatoma cell line (HepG2) at the half-maximal inhibitory concentration**  
Tombuloğlu A., Çöpoğlu H., Aydın Son Y., Güray N. T.  
Journal Of Trace Elements In Medicine And Biology, vol.62, pp.126-130, 2020 (Journal Indexed in SCI Expanded)
- **EF2-kinase targeted cobalt-ferrite siRNA-nanotherapy suppresses BRCA1-mutated breast cancer**  
Asik E., Akpinar Y., Caner A., Kahraman N., GÜRAY N. T. , Volkan M., Albarracins C., Pataer A., Arun B., Ozpolat B.  
NANOMEDICINE, vol.14, pp.2315-2338, 2019 (Journal Indexed in SCI)
- **Differential expressions and functions of phosphodiesterase enzymes in different regions of the rat heart**  
DERİCİ M. K. , SADİ G., Cenik B., Guray T., DEMİREL YILMAZ E.  
EUROPEAN JOURNAL OF PHARMACOLOGY, vol.844, pp.118-129, 2019 (Journal Indexed in SCI)
- **Cellular uptake and apoptotic potential of rhenium labeled magnetic protein cages in MDA-MB-231 cells**  
Asik E., Aslan T. N. , GÜRAY N. T. , VOLKAN M.  
ENVIRONMENTAL TOXICOLOGY AND PHARMACOLOGY, vol.63, pp.127-134, 2018 (Journal Indexed in SCI)
- **MODULATION OF CYTOCHROME P450s AND ANTIOXIDANT ENZYMES BY CAFFEIC ACID, p-COUMARIC ACID AND QUERCETIN-RICH ANATOLIAN PROPOLIS IN HUMAN ADENOCARCINOMA HT-29 CELLS**  
ALTAY A., İrtem Kartal D., Sagdicoglu-Celep G., Guray T., Bozoglu F.  
FRESENIUS ENVIRONMENTAL BULLETIN, vol.27, pp.336-345, 2018 (Journal Indexed in SCI)
- **Modulation of mRNA expression and activities of xenobiotic metabolizing enzymes, CYP1A1, CYP1A2, CYP2E1, GPx and GSTP1 by the Salicornia freitagii extract in HT-29 human colon cancer cells**  
ALTAY A., İrtem Kartal D., SADİ G., Guray T., YAPRAK A. E.  
ARCHIVES OF BIOLOGICAL SCIENCES, vol.69, pp.439-448, 2017 (Journal Indexed in SCI)
- **2-Amino-2-deoxy-glucose conjugated cobalt ferrite magnetic nanoparticle (2DG-MNP) as a targeting agent for breast cancer cells**  
Asik E., Aslan T. N. , VOLKAN M., GÜRAY N. T.  
ENVIRONMENTAL TOXICOLOGY AND PHARMACOLOGY, vol.41, pp.272-278, 2016 (Journal Indexed in SCI)
- **Cellular uptake, genotoxicity and cytotoxicity of cobalt ferrite magnetic nanoparticles in human breast cells**  
Asik E., Akpinar Y., Guray T., Iscan M., ÇAKMAK DEMİRCİGİL G., VOLKAN M.  
TOXICOLOGY RESEARCH, vol.5, pp.1649-1662, 2016 (Journal Indexed in SCI)
- **Regulation of Glutathione S-Transferase Mu with type 1 diabetes and its regulation with antioxidants**  
SADİ G., Kartal D. I. , Guray T.  
TURKISH JOURNAL OF BIOCHEMISTRY-TURK BIYOKIMYA DERGISI, vol.38, pp.92-100, 2013 (Journal Indexed in

SCI)

● **Changes in expression profiles of antioxidant enzymes in diabetic rat kidneys**

SADI G., ERYILMAZ N., TUTUNCUOGLU E., CINGIR S., GURAY T.

DIABETES-METABOLISM RESEARCH AND REVIEWS, vol.28, pp.228-235, 2012 (Journal Indexed in SCI)

● **Gene expressions of Mn-SOD and GPx-1 in streptozotocin-induced diabetes: effect of antioxidants**

Sadi G., Guray T.

MOLECULAR AND CELLULAR BIOCHEMISTRY, vol.327, pp.127-134, 2009 (Journal Indexed in SCI)

● **Effect of vitamin C and lipoic acid on streptozotocin-induced diabetes gene expression: mRNA and protein expressions of Cu-ZnSOD and catalase**

Sadi G., Yilmaz O., Guray T.

MOLECULAR AND CELLULAR BIOCHEMISTRY, vol.309, pp.109-116, 2008 (Journal Indexed in SCI)

● **Determination of airborne lead contamination in Cichorium intybus L In an urban environment**

Yakupoğlu D., GÜRAY N. T. , Sarıca D. Y. , KAYA Z.

Turkish Journal of Botany, vol.32, pp.319-324, 2008 (Journal Indexed in SCI Expanded)

● **Comparison of NAT1, NAT2 & GSTT2-2 activities in normal and neoplastic human breast tissues**

Geylan-SU Y., Işgor B., Coban T., Kapucuoglu N., Aydıntug S., İscan M., İscan M., Guray T.

NEOPLASMA, vol.53, pp.73-78, 2006 (Journal Indexed in SCI)

● **Rapid monitoring of diabetes-induced lipid peroxidation by Fourier transform infrared spectroscopy: Evidence from rat liver microsomal membranes**

Severcan F., Gorgulu G., Gorgulu S., Guray T.

ANALYTICAL BIOCHEMISTRY, vol.339, pp.36-40, 2005 (Journal Indexed in SCI)

● **Arylamine N-acetyltransferase activities in human breast cancer tissues**

Geylan Y., Sak S., Guray T.

NEOPLASMA, vol.48, pp.108-111, 2001 (Journal Indexed in SCI)

● **Production, purification and characterization of chitosanase from Penicillium spinulosum**

Ak O., Bakir U., Guray T.

BIOCHEMICAL ARCHIVES, vol.14, pp.221-225, 1998 (Journal Indexed in SCI)

● **Characterization of extracellular beta-lactamases from penicillin G-resistant cells of Streptococcus thermophilus**

Chirica L., Guray T., Gurakan G. C. , Bozoglu F.

JOURNAL OF FOOD PROTECTION, vol.61, pp.896-898, 1998 (Journal Indexed in SCI)

● **Sheep tissue acetyl coenzyme A-dependent arylamine N-acetyltransferases**

Guray T., Guvenc T.

COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY C-PHARMACOLOGY TOXICOLOGY & ENDOCRINOLOGY, vol.118, pp.305-310, 1997 (Journal Indexed in SCI)

● **Characterization of sheep liver N-acetyltransferase**

Guray T., Guvenc T.

BIOCHEMICAL ARCHIVES, vol.13, pp.107-111, 1997 (Journal Indexed in SCI)

● **PRODUCTION OF SUPEROXIDE RADICALS BY SHEEP LIVER NITROFURANTOIN REDUCTASE - IN-VITRO EFFECTS OF NITROFURANTOIN METABOLITES ON DNA**

İSCAN M., MODARESI M., GURAY T.

TOXICOLOGY IN VITRO, vol.9, pp.743-742, 1995 (Journal Indexed in SCI)

● **INTERINDIVIDUAL VARIABILITY OF COUMARIN 7-HYDROXYLATION IN A TURKISH POPULATION**

İSCAN M., ROSTAMI H., İSCAN M., GURAY T., PELKONEN O., RAUTIO A.

EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY, vol.47, pp.315-318, 1994 (Journal Indexed in SCI)

● **PURIFICATION AND CHARACTERIZATION OF 2 FORMS OF SOLUBLE NADH CYTOCHROME-B5 REDUCTASES FROM HUMAN ERYTHROCYTES**

ARINC E., GURAY T., SAPLAKOGLU U., ADALI O.

COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY B-BIOCHEMISTRY & MOLECULAR BIOLOGY, vol.101, pp.235-242, 1992 (Journal Indexed in SCI)

● **KINETIC-PROPERTIES OF PURIFIED SHEEP LUNG MICROSOMAL NADH-CYTOCHROME B5 REDUCTASE**

GURAY T., ARINC E.

INTERNATIONAL JOURNAL OF BIOCHEMISTRY, vol.23, pp.1315-1320, 1991 (Journal Indexed in SCI)

● **STIMULATORY EFFECTS OF BENZENE ON RABBIT LIVER AND KIDNEY MICROSOMAL CYTOCHROME-P-450 DEPENDENT DRUG-METABOLIZING-ENZYMES**

ARINC E., ADALI O., ISCAN M., GURAY T.

ARCHIVES OF TOXICOLOGY, vol.65, pp.186-190, 1991 (Journal Indexed in SCI)

● **PURIFICATION OF NADH-CYTOCHROME-B5 REDUCTASE FROM SHEEP LUNG AND ITS ELECTROPHORETIC, SPECTRAL AND SOME OTHER PROPERTIES**

GURAY T., ARINC E.

INTERNATIONAL JOURNAL OF BIOCHEMISTRY, vol.22, pp.1029, 1990 (Journal Indexed in SCI)

## Refereed Congress / Symposium Publications in Proceedings

● **Network models for understanding boron-induced transcriptomics changes within HepG2 cell line**

Tombuloğlu A., Çöpoğlu H., Güray N. T. , Son Aydın Y.

HIBIT2018 11th International Symposium on Health Informatics and Bioinformatics, Antalya, Turkey, 25 - 27

October 2018, pp.83-84

● **Genetic control of 4 coumarate coenzyme A ligase (4CL9 enzymes involved in lignin biosynthesis of European black poplar (Populus nigra L.)**

TAŞKIRAN B., GÜRAY N. T. , KAYA Z.

XXVI Plant and Animal Genome Meeting, San Diego, United States Of America, 13 - 17 January 2018

● **Eucaryotic elongation factor 2kinaze is a novel therapeutic target in BRCA1 mutated breast cancer**

VOLKAN M., GÜRAY N. T. , Asik E., Lopez-Berestein G., Ozpolat B., Kahraman N.

AACR, 1 - 05 April 2017, vol.77, pp.1125

● **Changes in gene profile of human hepatocellular carcinoma cell line (HepG2) induced by boric acid at half mazimal inhibitory concentration (IC50).**

TOMBULOĞLU A., ÇÖPOĞLU H., GÜRAY N. T. , AYDIN SON Y.

HIBIT 2017, Güzelyurt, Cyprus (Kktc), 28 - 30 June 2017

● **Expressions and functions of phosphodiesterase enzymes are different in different region of the rat heart**

Derici M. K. , SADİ G., Cenik B., GÜRAY N. T. , DEMİREL YILMAZ E.

7th European Congress of Pharmacology, 26 - 30 June 2016

● **Effect of the bioactive components of salvia absconditiflora on gene expressions of HepG2 cell line**

İRTEM KARTAL D., SADİ G., GÜRAY N. T.

FEBS, 4 - 09 September 2015, vol.282, pp.265-266

● **antioxidant activities of salvia fructosa and its effects on HT 29 cell line**

ALTAY A., İRTEM KARTAL D., SAĞDIÇOĞLU CELEP A. G. , GÜRAY N. T. , BOZOĞLU T. F.

FEBS, 4 - 09 September 2015, vol.282, pp.269-270

● **Antioxidant activitis of Salvia fruticosa and its effects on HT-29 cell line**

Altay A., Kartal D. I. , Celep G. S. , GÜRAY N. T. , Bozoglu F. T.

40th Congress of the Federation-of-European-Biochemical-Societies (FEBS) - The Biochemical Basis of Life, Berlin,

Germany, 4 - 09 July 2015, vol.282, pp.269-270

● **Effect of the bioactive components of Salvia absconditiflora on gene expressions of HepG2 cell line**

Kartal D. I. , SADİ G., GÜRAY N. T.

40th Congress of the Federation-of-European-Biochemical-Societies (FEBS) - The Biochemical Basis of Life, Berlin,

Germany, 4 - 09 July 2015, vol.282, pp.265-266

● **Effect of phytoestrogen emodin on doxorubicin-induced cytotoxicity and apoptosis on tumorigenic MCF-7 and non-tumorigenic MCF-10A human breast cells**

UYAR P., KAYA B., Guray T. N.

FEBS EMBO 2014 Conference, Paris, France, 30 August - 04 September 2014, vol.281, pp.458-459

- **The effects of *Salvia absconditiflora* water extract on HepG2 liver cell line**  
Kartal D. I. , Sadi G., Guray T. N.  
FEBS EMBO 2014 Conference, Paris, France, 30 August - 04 September 2014, vol.281, pp.606
- **Effect of antioxidants on hepatic cytochrome P450 gene expressions in streptozotocin induced diabetes**  
Sadi G., Guray T.  
34th Congress of the Federation-of-European-Biochemical-Societies, Prague, Czech Republic, 4 - 09 July 2009, vol.276, pp.387
- **The effects of streptozotocin induced diabetes on some oxidative biomarkers of rat liver**  
Sadi G., Gorgulu G., Guray T.  
31st Congress of the Federation-of-European-Biochemical-Societies (FEBS), İstanbul, Turkey, 24 - 29 June 2006, vol.273, pp.171
- **N-acetyl transferase (NAT1&NAT2) and glutathione-S transferase (GSTM1&GSTT1) polymorphisms in breast cancer**  
Guray T., Atalay A., Su Y. S. , Altinbas M., Atalay M. A.  
31st Congress of the Federation-of-European-Biochemical-Societies (FEBS), İstanbul, Turkey, 24 - 29 June 2006, vol.273, pp.326-327
- **Isolation of a chitosan degrading fungus, *Penicillium spinulosum*, and chitosanase production by the isolate**  
Ak O., Bakir U., Guray T.  
International Symposium on New Frontiers in Screening for Microbial Biocatalysts, Ede, Netherlands, 15 - 18 December 1996, vol.53, pp.265-268
- **COUMARIN 7-HYDROXYLATION (CYP2A6) POLYMORPHISM IN A TURKISH POPULATION**  
ISCAN M., ROSTAMI H., ISCAN M., GURAY T., RAUTIO A., PELKONEN O.  
8th International Conference on Cytochrome P450: Biochemistry, Biophysics and Molecular Biology, Lisbon, Portugal, 24 - 28 October 1993, pp.745-747

## Supported Projects

- GÜRAY N. T. , EDA AKYILDIZ Z., Project Supported by Higher Education Institutions, AMP-AKTİVE EDİCİ PROTEİN KİNAZ YOLAĞININ MEME KANSERİNDEKİ (MCF-7 HÜCRELERİNDEKİ) ROLÜ, 2018 - 2019
- ADALI O., AKKULAK M., DURUKAN Ö., EVİN E., GÜRAY N. T. , Project Supported by Higher Education Institutions, Hezkokinaz II proteininin prostat kanseri hücre hatlarındaki ekspresyonunun antidiyabet ve antikanser ilaç kombinasyonlarına bağlı değişimi, 2018 - 2019
- Güray N. T. , TUBITAK Project, Emodin Uygulanan Meme Kanseri Hücre Hatlarının MikroRNA İfade Profili, 2017 - 2018
- GÜRAY N. T. , ADALI O., SARAÇ B. E. , ÇÖPOĞLU H., EVİN E., Project Supported by Higher Education Institutions, Bor'un toksik etki mekanizmalarının in vitro düzeyinde araştırılması, 2017 - 2017
- GÜRAY N. T. , Project Supported by Higher Education Institutions, FERRİTİN KAFES İÇİNE YERLEŞTİRİLMİŞ GADOLİNYUM OKSİT NANOPARÇACIKLARIN SİTOTOKSİSİTESİ, 2017 - 2017
- GÜRAY N. T. , Project Supported by Higher Education Institutions, EMODİNİN MEME HÜCRE HATLARINDAKİ ENTEGRE ANALİZİ, 2017 - 2017
- GÜRAY N. T. , Project Supported by Higher Education Institutions, BOR'UN SİTOTOKSİK ETKİLERİNİN İN VİTRO OLARAK İNSAN HEPATOSİT KARSİNOMA HÜCRE HATTI HEPG2'LERDE ARAŞTIRILMASI, 2017 - 2017
- GÜRAY N. T. , ADALI O., Project Supported by Higher Education Institutions, ODTÜ Kampüsü'nde bulunan endemik bir tür olan *Salvia absconditiflora* (adaçayı) bitkisinin antimikrobiyal, antioksidan ve sitotoksik etkilerinin incelenmesi, 2016 - 2016
- GÜRAY N. T. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2016
- GÜRAY N. T. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2016

GÜRAY N. T. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJES, 2014 - 2016

ADALI O., ÇULCU T., Şen A., GÜRAY N. T. , Project Supported by Higher Education Institutions, Yerel tıbbi bitki *Viscum album L.*'un safra asit sentez ve metabolizmasından sorumlu sitokrom P450 7A1 ve 27A1 enzimlerine etkilerinin moleküler düzeyde incelenmesi, 2015 - 2015

GÜRAY N. T. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2015

ADALI O., GÜRAY N. T. , Project Supported by Higher Education Institutions, Doğal olarak bulunan ellajik asit, kuersetin, naringenin, resveratrol, rutin ve hesperidin gibi polifenolik bileşiklerin ilaç metabolizmasında rol oynayan Glutatyon S-Transferaz ve NAD(P):Kuinon Oksidoredüktaz 1 enzim aktiviteleri üzerine etkileri, 2013 - 2014

## Scientific Refereeing

TUBITAK Project, 1002 - Quick Support Program, Middle East Technical University, Turkey, May 2018

## Citations

Total Citations (WOS):370

h-index (WOS):9