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Personal Information

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International Researcher IDs

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Education Information

Doctorate, University of Florida, College Of Liberal Arts And Sciences, Chemistry, United States Of America 2007 - 2012

Postgraduate, Hacettepe University, Fen Bilimleri Enstitüsü, Kimya , Turkey 2004 - 2007

Undergraduate, Hacettepe University, Fen Fakültesi, Kimya, Turkey 1999 - 2004

Dissertations

Doctorate, Aptamer based affinity methods for mass spectrometry, University Of Florida, Chemistry, 2012

Postgraduate, Investigation of noncovalent protein-protein interactions by matrix-assisted laser desorption/ionization mass spectrometry, Hacettepe Üniversitesi, Fen Bilimleri Enstitüsü, Kimya (YI) (Tezli), 2007

Research Areas

Life Sciences, Biochemistry, Metabolism, Chemistry, Analytical Chemistry, Bioanalytical Methods, Chromatographic Analysis, Mass Spectroscopy, Physical Chemistry, nanocomposites, Natural Sciences

Academic Titles / Tasks

Associate Professor, Hacettepe University, Çocuk Sağlığı Enstitüsü, Pediatrik Temel Bilimler Anabilim Dalı, 2014 - Continues

Lecturer PhD, Eidgenössische Technische Hochschule, ETHZ (The Federal Institute of Technology, Zürich), Chemistry And Applied Biosciences, Chemistry And Applied Biosciences, 2012 - 2014

Research Assistant, University of Florida, Liberal Arts And Sciences, Chemistry, 2007 - 2012

Research Assistant, Hacettepe University, Fen Fakültesi, Kimya Bölümü, 2005 - 2007

Courses

Kalıtsal metabolik hastalıklarda proteomik ve metabolomik, Doctorate, 2020 - 2021

- I. **An investigation of different intracellular parameters for Inborn Errors of Metabolism: Cellular stress, antioxidant response and autophagy**
Vardar Acar N., DURSUN A., Aygün D., Gürses Cila H. E., LAY İ., GÜLBAKAN B., ÖZGÜL R. K.
Free Radical Biology and Medicine, vol.179, pp.190-199, 2022 (SCI-Expanded)
- II. **Biallelic mutations in ELFN1 gene associated with developmental and epileptic encephalopathy and joint laxity**
DURSUN A., YALNIZOĞLU D., Yilmaz D. Y., Oguz K. K., GÜLBAKAN B., KOŞUKCU C., AKAR H. T., Kahraman A. B., Acar N. V., GÜNBEY C., et al.
EUROPEAN JOURNAL OF MEDICAL GENETICS, vol.64, no.11, 2021 (SCI-Expanded)
- III. **Native Electrospray Ionization Mass Spectrometry Reveals Multiple Facets of Aptamer-Ligand Interactions: From Mechanism to Binding Constants**
Gulbakan B., Barylyuk K., Schneider P., Pillong M., Schneider G., Zenobi R.
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol.140, no.24, pp.7486-7497, 2018 (SCI-Expanded)
- IV. **Discovery of biomarkers in rare diseases: innovative approaches by predictive and personalized medicine**
GÜLBAKAN B., ÖZGÜL R. K., YÜZBAŞIOĞLU A., Kohl M., Daigner H., ÖZGÜÇ M.
EPMA JOURNAL, vol.7, 2016 (SCI-Expanded)
- V. **Generation of Fluorogen-Activating Designed Ankyrin Repeat Proteins (FADAs) as Versatile Sensor Tools**
Schutz M., Batyuk A., Klenk C., Kummer L., de Picciotto S., Gulbakan B., Wu Y., Newby G. A., Zosel F., Schoppel J., et al.
JOURNAL OF MOLECULAR BIOLOGY, vol.428, no.6, pp.1272-1289, 2016 (SCI-Expanded)
- VI. **Applying mass spectrometry to study non-covalent biomolecule complexes**
Chen F., GÜLBAKAN B., Weidmann S., Fagerer S. R., Ibanez A. J., Zenobi R.
MASS SPECTROMETRY REVIEWS, vol.35, no.1, pp.48-70, 2016 (SCI-Expanded)
- VII. **Influence of Ammonium Acetate Concentration on Receptor Ligand Binding Affinities Measured by Native Nano ESI-MS: A Systematic Study**
Gavrilidou A. F. M., GÜLBAKAN B., Zenobi R.
ANALYTICAL CHEMISTRY, vol.87, no.20, pp.10378-10384, 2015 (SCI-Expanded)
- VIII. **Determination of thermodynamic and kinetic properties of biomolecules by mass spectrometry**
Gulbakan B., BARYLYUK K., ZENOBI R.
CURRENT OPINION IN BIOTECHNOLOGY, vol.31, pp.65-72, 2015 (SCI-Expanded)
- IX. **Oligonucleotide aptamers: emerging affinity probes for bioanalytical mass spectrometry and biomarker discovery**
Gulbakan B.
ANALYTICAL METHODS, vol.7, no.18, pp.7416-7430, 2015 (SCI-Expanded)
- X. **Post-Genomics Nanotechnology Is Gaining Momentum: Nanoproteomics and Applications in Life Sciences**
KOBESSY F. H., Gulbakan B., ALAWIEH A., KARAM P., ZHANG Z., GUINGAB-CAGMAT J. D., MONDELLO S., TAN W., ANAGLI J., WANG K.
OMICS-A JOURNAL OF INTEGRATIVE BIOLOGY, vol.18, no.2, pp.111-131, 2014 (SCI-Expanded)
- XI. **DNA Oligonucleotides: A Model System with Tunable Binding Strength to Study Monomer-Dimer Equilibria with Electrospray Ionization-Mass Spectrometry**
BARYLYUK K., Gulbakan B., Xie X., ZENOBI R.
ANALYTICAL CHEMISTRY, vol.85, no.24, pp.11902-11912, 2013 (SCI-Expanded)
- XII. **DNA-Guided Metal-Nanoparticle Formation on Graphene Oxide Surface**
OCSOY I., Gulbakan B., CHEN T., ZHU G., CHEN Z., SARI M. M., PENG L., XIONG X., FANG X., TAN W.
ADVANCED MATERIALS, vol.25, no.16, pp.2319-2325, 2013 (SCI-Expanded)
- XIII. **Aptamer-Conjugated Multifunctional Nanoflowers as a Platform for Targeting, Capture, and Detection in Laser Desorption Ionization Mass Spectrometry**
OCSOY I., Gulbakan B., SHUKOOR M. I., XIONG X., CHEN T., POWELL D. H., TAN W.
ACS NANO, vol.7, no.1, pp.417-427, 2013 (SCI-Expanded)

- XIV. **Direct access to aptamer-protein complexes via MALDI-MS**
CHEN F., Guelbakan B., ZENOBI R.
CHEMICAL SCIENCE, vol.4, no.10, pp.4071-4078, 2013 (SCI-Expanded)
- XV. **A Logical Molecular Circuit for Programmable and Autonomous Regulation of Protein Activity Using DNA Aptamer-Protein Interactions**
HAN D., ZHU Z., WU C., PENG L., ZHOU L., Gulbakan B., ZHU G., WILLIAMS K. R., TAN W.
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol.134, no.51, pp.20797-20804, 2012 (SCI-Expanded)
- XVI. **Enrichment and Detection of Rare Proteins with Aptamer-Conjugated Gold Nanorods**
YASUN E., Gulbakan B., OCSOY I., YUAN Q., SHUKOOR M. I., LI C., TAN W.
ANALYTICAL CHEMISTRY, vol.84, no.14, pp.6008-6015, 2012 (SCI-Expanded)
- XVII. **Aptamers: turning the spotlight on cells**
LOPEZ-COLON D., JIMENEZ E., YOU M., Gulbakan B., TAN W.
WILEY INTERDISCIPLINARY REVIEWS-NANOMEDICINE AND NANOBIOTECHNOLOGY, vol.3, no.3, pp.328-340, 2011 (SCI-Expanded)
- XVIII. **In Vitro Selection of DNA Aptamers to Glioblastoma Multiforme**
BAYRAC A. T., SEFAH K., PAREKH P., BAYRAC C., Gulbakan B., ÖKTEM H. A., TAN W.
ACS CHEMICAL NEUROSCIENCE, vol.2, no.3, pp.175-181, 2011 (SCI-Expanded)
- XIX. **Aptamer-conjugated nanomaterials for bioanalysis and biotechnology applications**
CHEN T., SHUKOOR M. I., CHEN Y., YUAN Q., ZHU Z., ZHAO Z., Gulbakan B., TAN W.
NANOSCALE, vol.3, no.2, pp.546-556, 2011 (SCI-Expanded)
- XX. **A Dual Platform for Selective Analyte Enrichment and Ionization in Mass Spectrometry Using Aptamer-Conjugated Graphene Oxide**
Gulbakan B., YASUN E., SHUKOOR M. I., ZHU Z., YOU M., Tan X., Sanchez H., Powell D. H., Dai H., TAN W.
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol.132, no.49, pp.17408-17410, 2010 (SCI-Expanded)
- XXI. **Pyrene-Assisted Efficient Photolysis of Disulfide Bonds in DNA-Based Molecular Engineering**
YOU M., ZHU Z., LIU H., Gulbakan B., HAN D., WANG R., WILLIAMS K. R., TAN W.
ACS APPLIED MATERIALS & INTERFACES, vol.2, no.12, pp.3601-3605, 2010 (SCI-Expanded)
- XXII. **Preconcentration and matrix elimination for the determination of Pb(II), Cd(II), Ni(II), and Co(II) by 8-hydroxyquinoline anchored poly(styrene-divinylbenzene) microbeads**
ASKUN H., GÜLBAKAN B., ÇELİKBIÇAK Ö., UZUN C., GUVEN G., SALİH B.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.107, no.4, pp.2714-2722, 2008 (SCI-Expanded)
- XXIII. **Solid phase extraction of organochlorine pesticides with modified poly (styrene-divinylbenzene) microbeads using home-made solid phase extraction syringes**
Guelbakan B., UZUN C., CELIKBICAK O., GUEVEN G., SALİH B.
REACTIVE & FUNCTIONAL POLYMERS, vol.68, no.2, pp.580-593, 2008 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **Niş benzeri Kokültür sistemi ile AML lösemik kök hücrelerinin tanımlanması ve karakterizasyonu.**
alkan b., cevher i., GÜLBAKAN B., AYTAÇ EYÜPOĞLU Ş. S., uçkan çetinkaya f. d.
45. ulusal hematoloji kongresi, Turkey, 30 October - 02 November 2019
- II. **Niş benzeri kokültür sistemi ile AML lösemik kök hücrelerin tanımlanması ve karakterizasyonu**
Alkan B., Cevher I., GÜLBAKAN B., AYTAÇ Ş. S., CETINKAYA D., OKUR F. V.
45. Ulusal Hematoloji Kongresi, Antalya, Turkey, 30 October - 02 November 2019
- III. **KOVALENT OLMAYAN RESEPTÖR-LİGAND ETKİLEŞİMLERİNİN ANALİZİNDE BİYOANALİTİK KÜTLE SPEKTROMETRİ TEKNİKLERİNİN KULLANIMI**
GÜLBAKAN B.
ULUSAL KİMYA KONGRESİ, Turkey, 10 - 14 September 2017
- IV. **APTAMERLER VE BIYOMEDİKAL UYGULAMALARI**
GÜLBAKAN B.

'xxUygulamalı Biyokimya'xxda Güncel Konular'xx YAZ OKULU, Turkey, 12 - 14 July 2017

- V. **Klinik Uygulamalarda Metabolomik**
GÜLBAKAN B.
14. Ulusal Metabolik Hastalıklar ve Beslenme Kongresi, Turkey, 26 - 30 April 2017
- VI. **METABOLİK NÖROMETABOLİK HASTALIKLARDA BİYOBELİRTEÇLER**
GÜLBAKAN B.
III. NÖROMETABOLİK DİSMORFOLOJİ SEMPOZYUMU, Turkey, 10 - 12 March 2016
- VII. **Oligonucleotide aptamers emerging affinity probes for bioanalytical mass spectrometry and biomarker discovery**
GÜLBAKAN B.
GPSS 2015, 12 - 15 November 2015
- VIII. **Aptamer conjugated nanostructures for affinity mass spectrometry**
GÜLBAKAN B., ÖÇSOY İ.
NanoTr 2015, 22 - 25 June 2015
- IX. **Aptamer based affinity mass spectrometry**
GÜLBAKAN B.
2nd International Congress on Biosensors, 10 - 12 June 2015
- X. **soft ionization mass spectrometry studies of aptamer ligand complexes**
GÜLBAKAN B., Barylyuk K., chen f., zenobi r.
4th Symposium on Structural Proteomics, 27 - 28 November 2014
- XI. **Native nano ESI mass spectrometry studies of aptamer ligand complexes**
GÜLBAKAN B., Barylyuk K., zenobi r.
IMSC 2014, 24 - 29 August 2014
- XII. **Effect of Buffer Concentration on Protein Ligand Binding Affinities Measured by Native ESI MS**
Gavrilidou A. F. M., GÜLBAKAN B., Zenobi R.
IMSC 2014, 24 - 29 August 2014
- XIII. **probing aptamer ligand interactions by soft ionization mass spectrometry methods**
GÜLBAKAN B., barylyuk k., chen f., zenobi r.
61th ASMS Annual Conference, 9 - 13 June 2013
- XIV. **Pyrene 1 Boronic Acid Conjugated Magnetic Graphene Oxide a New Material for Glycoprotein Capturing**
ÖÇSOY İ., GÜLBAKAN B., GÖKTÜRK E., ERDAL H., sena c., öçsoy m., tan w.
5th NanoFlorida Conference, 29 - 30 September 2012
- XV. **Surface Modification of Aptamer Conjugated Gold Silver Nanorods for Rare Protein Detection**
yasun e., GÜLBAKAN B., tan w.
The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, 11 - 15 March 2012
- XVI. **Photochemical Protein Scissors DNA Aptamer for Target Selective and Site Specific Cleavage of PDGF**
you m., cansız s., odonoughe m., GÜLBAKAN B., tan w.
The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, 11 - 15 March 2012
- XVII. **Hybrid Nanoflowers Single Platform For Targeting Metabolite Sensing and Analysis**
ÖÇSOY İ., GÜLBAKAN B., shukoor m. i., xiong x., yasun e., tan w.
The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, 11 - 15 March 2012
- XVIII. **Aptamer conjugated Gold Silver Nanorods for Rare Protein Enrichment and Detection**
yasun e., GÜLBAKAN B., shukoor m. i., ÖÇSOY İ.
4th NanoFlorida Conference, 30 September - 01 October 2011
- XIX. **A Dual Mass Spectrometry Platform Based on Aptamer Conjugated Graphene Oxide**
GÜLBAKAN B., yasun e., shukoor m. i., powell d. h., tan w.
59th ASMS Annual Conference, 5 - 09 June 2011
- XX. **Graphene oxide aptamer Conjugates as MALDI MS Matrix for Biomolecule Analysis**
yasun e., GÜLBAKAN B., tan w.
"The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, 13 - 18 March 2011

- XXI. **Raman Active Au FePt Hybrid Nanoparticles for Rare Protein Isolation and Quantification**
ÖÇSOY İ., shukoor m. i., GÜLBAKAN B., tan w.
The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, 13 - 18 March 2011
- XXII. **Direct Analysis in Real Time Mass Spectrometry of High Molecular Weight Organometallic Porphyrins**
GÜLBAKAN B., sommers j., rummel j., schanze k., powell d. h., tan w.
58th ASMS Annual Conference, 23 - 27 May 2010
- XXIII. **Aptamer Based Affinity Capture Arrays**
GÜLBAKAN B., BAYRAÇ A. T., kim y., philips j. a., tan w.
The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, 28 February - 04 March 2010
- XXIV. **laser desorption ionization on silicon nanowell arrays prepared by argon plasma etching using a nanoporous alumina mask**
GÜLBAKAN B., park d., KEÇECİ K., martin c. R., powell d. h., tan w.
57th ASMS Annual Conference, 31 May - 05 June 2009
- XXV. **MALDI MS probing of non covalent protein complexes related to Alzheimer s disease**
GÜLBAKAN B., SALİH B.
57th ASMS Annual Conference, 31 May - 05 June 2009
- XXVI. **INVESTIGATION OF NONCOVALENT PROTEIN PROTEIN INTERACTIONS BY MATRIX ASSISTED LASER DESORPTION IONIZATION MASS SPECTROMETRY**
SALİH B., GÜLBAKAN B., demirel ö.
INTERNATIONAL SYMPOSIUM on DRUG RESEARCH and DEVELOPMENT“From Chemistry to Medicine”, Turkey, 17 - 20 May 2007
- XXVII. **DEVELOPMENT AND OPTIMIZATION OF A SURFACE AIDED ENZYMATIC DIGESTION SYSTEM TO USE IN PROTEOMICS STUDIES**
GÜLBAKAN B., öztürk çal a., YALÇIN T., SALİH B.
INTERNATIONAL SYMPOSIUM on DRUG RESEARCH and DEVELOPMENT“From Chemistry to Medicine”, 17 - 20 May 2007
- XXVIII. **POLİ STİREN DİVİNİLBENZEN MİKROKÜRELERİNİN 8HQ İLE MODİFİKASYONUyla Cd II Pb II Ni II Co II METALLERİNİN UZAKLAŞTIRILMASI VE ZENGİNLEŞTİRİLMESİ**
aşkun h., GÜLBAKAN B., UZUN C., ÇELİKBIÇAK Ö., SALİH B., güven o.
XIX. Ulusal Kimya Kongresi, Ege Üniversitesi, Turkey, 30 September - 04 October 2005
- XXIX. **POLİ STİREN DİVİNİLBENZEN MİKROKÜRELERİNİN NH2 8HQ VE COOH İLE MODİFİKASYONU VE AĞIR METALLERİN KATI FAZ EKSTRAKSİYONU İÇİN KULLANIMI**
GÜLBAKAN B., UZUN C., ÇELİKBIÇAK Ö., güven o., SALİH B.
XIX. Ulusal Kimya Kongresi, Turkey, 30 September - 04 October 2005

Supported Projects

DURSUN A., Özaydın E., GÜLBAKAN B., ÖZGÜL R. K., Project Supported by Higher Education Institutions, Galaktozemi ve Akçağaç Şurubu Hastalarında İnflamasyon İlişkisinin Hedefsiz Metabolomik İle Araştırılması, 2019 - 2022

GÜLBAKAN B., Project Supported by Higher Education Institutions, From Single to Multiomics Applications and Challenges in Data Integration EMBO toplantısına Bilimsel Başarı Desteği ile katılım, 2017 - 2018

GÜLBAKAN B., Project Supported by Higher Education Institutions, Society of Inborn Errors of Metabolism Toplantısına katılım için Bilimsel Başarı Desteği Başvurusu, 2016 - 2017

GÜLBAKAN B., Project Supported by Higher Education Institutions, APTAMER-PROTEIN ETKİLEŞİMLERİNİN NATİVE MS İLE İNCELENMESİ, 2016 - 2016

GÜLBAKAN B., Project Supported by Higher Education Institutions, Oligonükleotid aptamerler Biyoanalitik kütle spektrometrisi ve biyobelirteç keşfinde kullanılan affinite problemleri, 2015 - 2016

Metrics

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