

Curriculum Vitae (Prof. Gu, Man Bock)

Prof. Dr. Man Bock Gu
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NATIONALITY: Republic of Korea (South Korea)

OCCUPATION: Professor of Department of Biotechnology at Korea University (since 2005)

EDUCATIONAL BACKGROUND:

- Aug. 1994 Ph.D (Biochemical Engineering), Department of Chemical Engineering, University of Colorado at Boulder, USA
- Feb. 1986 MS (Biochemical Engineering), Department of Chemical Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea S.
- Feb. 1984 B.Sc. (Chemical Engineering), Department of Chemical Engineering, Seoul National University, Korea S.

WORK EXPERIENCE (JOB HISTORY):

- 2005. 9 – present, Professor, Department of Biotechnology, Korea University
- 2013. 9 – present, Director, BK21 PLUS for Biotechnology, Korea University
- 2013. 9 – 2019. 1, Chair, Department of Biotechnology, Korea University
- 2008 – 2009, Vice Dean, College of Life Sciences and Biotechnology, Korea University
- 1996. 8 – 2005.8, Assistant, Associate, & Full Professor, Gwangju Institute of Science & Technology (GIST), Korea S.
- 2001. 7– 2005. 8 Principle Investigator (PI) of National Research Laboratory on Environmental Biotechnology supported by Korean Ministry of Science and Technology (MOST), GIST, Korea S.
- 2002. 5 - 2004. 4 Director of BK21 Program and Department Chair, Environmental Science and Engineering, GIST, Korea S.
- 2001.3 – 2002.2 Visiting Professor, an Alexander von Humboldt Research Fellow, TU Berlin, Germany
- 1994. 8 – 1996.8 Research Associate, Univ. of Delaware & Univ. of Colorado at Boulder, USA
- 1986.2 – 1990.2 Researcher, MOGAM Research Institute, Korea S.

MAJOR PROFESSIONAL ACTIVITIES:

- 2020 Asian Congress Chair, 2020 World Congress on Biosensors (Biosensors 2020, May 26-29, 2020), Busan, Rep. of Korea
- 2017 – present, Member, The National Academy of Engineering of Korea (NAEK)
- 2015 – present, Member, The Korean Academy of Science and Technology (KAST)
- 2012–present, Organizing Committee member appointed for World Congress on Biosensors
- 2014 President, Korean Biochip Society (KBC)
- 2012 – present, Co-Editor-in Chief, Biosensors and Bioelectronics (Elsevier Co., IF ~ 8.137),
- 2012 – present, Editor, Engineering in Life Sciences (Wiley Co.)

- 2012 – present, Associate Editor, BMC Biotechnology (Springer Co.)
- 2012 – present, Editorial Board member, Advances in Biochemical Engineering/ Biotechnology – Book Series (Wiley Co.)
- 2012 – present, Editorial Board Member, J. of Biological Engineering (IBE, USA)
- 2007 – present, Editorial Board Member, Enzyme and Microbial Technology (Elsevier Co.)
- 2003 – present, Editorial Board Member, Environmental Monitoring and Assessment (Springer Press, SCI)
- 1998 – present, Member, American Institute of Chemical Engineers (AIChE), American Chemical Society (ACS)
- 1996 – present, Korean Institute of Chemical Engineers (KIChE)
- 1996 – present, Member, The Korean Society for Biotechnology and Bioengineering
- 1994 – present, Member, Sigma XI, USA

AWARDS, HONORS, FELLOWSHIPS:

- 1990 Korea Government Scholarship for study abroad
- 2001-2002 Alexander von Humboldt Research Fellowship, Germany
- April 2003 Korea Prime Minister's Medal and Ribbon for Research Achievement
- October 2003 Young Scientist Research Award, Korean Society for Biotechnology and Bioengineering (KSBB)
- 2004 Best Education Award, Gwangju Institute of Science and Technology (GIST)
- 2005 Damyon Academic Research Award, KSBB
- 2006 Top 50 Research Achievement Award, Korean Ministry of Science and Technology & NRF
- 2007 Top 50 research paper award, Korean Ministry of Environment
- 2009 Outstanding Contribution Award, Korean Biochip Society
- 2011~2016 Best Teaching Award on "Introduction to Nanobiotechnology" & "Analytical Biotechnology", Korea University
- 2012. 04 Outstanding Contribution Award, KSBB
- 2012. 05 Plenary Speaker, 2012 World Congress on Biosensors (Biosensors 2012), Cancun, Mexico.
- 2012. 07 Award of 2011 Best Paper, The Korea Federation of Science and Technology Societies.
- 2012. 12 Invited Speaker, International Workshop on New and Synthetic Bioproduction System, Hamburg, Germany
- 2013, 2014 Outstanding (Suktop) Teaching Award on "Introduction to "Analytical Biotechnology", Korea University
- 2014. 04 Keynote Speaker, 2014 IUMRS-ICEM, Taipei, Taiwan
- 2014. 11 Keynote Speaker, 2014 The 13th China-Japan-Korea Joint Symposium on Enzyme Engineering, Jeju, Korea S.
- 2015. 07 Invited Speaker, 2015 ICAM, Taoyuan, Taiwan
- 2015. 09 Invited Speaker, Department of Chemical Engineering, NCKU, Tainan, Taiwan
- 2015. 09 Invited Speaker, The 76th JSAP Autumn Meeting, Nagoya, Japan
- 2015. 09 Invited Speaker, The 11th BBMEC, Regensburg, Germany
- 2015. 11 The Grand Academic Research Award, Korean Biochip Society (KBCS)
- 2016. 05 Plenary Speaker, 2016 ACST (Association for Chemical Sensors in Taiwan) Annual Meeting, Taijung, Taiwan
- 2016. 09 Invited Speaker, Biotechnology Spark: The Past & Future, Technical University of Hamburg-Harburg (TUHH), Germany
- 2017. 02 Invited Speaker, Batsheva de Rothschild Seminar on New Concepts in Biosensing, Dead Sea, Israel
- 2017. 11 Keynote Speaker, Select Biosciences Lab-on-a-Chip, Microfluidics and Point-of-Care Diagnostics Asia 2017, Taipei, Taiwan

- 2018. 02 Honor, The Article of the Year 2017, Journal of Biological Engineering, 2018 Spring meeting of the Institute of Biological Engineering

MAIN RESEARCH INTERESTS:

- Aptamer Science and Technology
- Aptamer-based (nano)Biosensors for Viurses, Biomarkers, Small Molecules, and Cells
- Whole Cell Biosensors & Cell Array Biochips for Prescreening of new drugs and Environmental Bio-monitoring
- Nanoclustered Enzymes

LIST OF MAJOR PUBLICATIONS IN REFEREED INTERNATIONAL JOURNALS:

(Google Scholar h-index 49, total citations: 7,946)

179. Bang Hyun Lee, Sang Hoon Kim, Youngkyung Ko, Joo Cheol Park, Suk Ji, **M.B. Gu** (2019), The sensitive detection of ODAM by using sandwich-type biosensors with a cognate pair of aptamers for the early diagnosis of periodontal disease, **Biosensors and Bioelectronics** (*in press*)

178. Sang Hoon Kim, On you Nam, Eon Seon Jin, **M.B. Gu** (2019), A new coccolith modified electrode-based biosensor using a cognate pair of aptamers with sandwich-type binding, **Biosensors and Bioelectronics** (*in press*), DOI: 10.1016/j.bios.2018.08.021

177. Sang Hoon Kim, Ee Tack Hwang, and **Man Bock Gu** (2018), Bio-hybrid Inorganic Microparticles derived from CO₂ for Highly Efficient and Selective Removal of Antibiotics, **Journal of Biological Engineering** (*in press*)

176. Van Thuan Nguyen, Young Seop Kwon, and **M.B. Gu** (2017), Aptamer-based Environmental Biosensors for Small Molecule Contaminants, **Current Opinion in Biotechnology**, 45, 15-23

175. Ho Bin Seo and **M.B. Gu** (2017), Aptamer-based sandwich-type biosensors, **Journal of Biological Engineering**, 11, 1-7*, *The paper of the year 2017 selected!*

174. N. H. Ahmad Raston, Van Thuan Nguyen, and **M.B. Gu** (2017), A new lateral flow strip assay (LFSA) using a pair of aptamers for the detection of Vaspin, **Biosensors & Bioelectronics**, 93, 21-25

173. Bang Hyun Lee, Van Thuan Nguyen and **M.B. Gu** (2016), Highly sensitive detection of 25-HydroxyvitaminD3 by using a target-induced displacement of aptamer, **Biosensors & Bioelectronics**, 88, 174-180

172. Jieun Park, Ee Taek Hwang, Bo-Kuk Seo, and **Man Bock Gu** (2016), Continuous Modular Biomimetic Utilization of Carbon Dioxide toward Multi- and Chemoenzymatic Systems, **ACS Catalysis**, 6(9), 6175-6181

171. Ee Taek Hwang, Bo-kuk Seo, **Man Bock Gu** and An-Ping Zeng (2016), Successful bi-enzyme stabilization for biomimetic cascade transformation of carbon dioxide, **Catalysis Science & Technology**, 6, 7267-7272

170. Van-Thuan Nguyen, Ho Bin Seo, Byoung Chan Kim, Sang Kyung Kim, Chang-Seon Song and **M.B. Gu** (2016), Highly sensitive sandwich-type SPR based detection of whole H5Nx viruses using a pair of aptamers, **Biosensors and Bioelectronics**, 85, 293-300
169. Van-Thuan Nguyen, Bang Hyun Lee, Sang Hoon Kim and **M.B. Gu** (2016), Aptamer-aptamer linkage based aptasensor for highly enhanced detection of small molecules, **Biotechnology Journal**, 11, 843-849
168. Ingrid Bazin, Ho Bin Seo, Carey M. Suehs, Marc Ramuz, Michel De Waard, and **M.B. Gu** (2016), Profiling the biological effects of wastewater samples via bioluminescent bacterial biosensors combined with estrogenic assays, **Environmental Science and Pollution Research**, 1-9
167. Y. S. Kim, N. H. Ahmad Raston and **M.B. Gu** (2016), Aptamer-based Nanobiosensors, **Biosensors and Bioelectronics**, 76, 2-19
166. Ho Bin Seo, Young Seop Kwon, Ji-eun Lee, David C Cullen, Hongseok (Moses) Noh and **M.B. Gu** (2015), A Novel Reflectance-based Aptasensor Using Gold Nanoparticles for the Detection of Oxytetracycline, **Analyst**, 140, 6671-6675
165. N. H. Ahmad Raston and **M.B. Gu** (2015), Highly amplified detection of visceral adipose tissue-derived serpin (vaspin) using a cognate aptamer duo, **Biosensors and Bioelectronics**, 70, 261-267. *Open Access*
164. Young Seop Kwon, Van-Thuan Nguyen, Je Gun Park, and **M.B. Gu** (2015), Detection of Iprobenfos and Edifenphos using a new Multi-aptasensor, **Analytica Chimica Acta**, 868, 60-66.
163. Tal Elad, Ho Bin Seo, Shimshon Belkin, and **M.B. Gu** (2015), High-throughput Prescreening of Pharmaceuticals using a Genome-wide Bacterial Bioreporter Array, **Biosensors and Bioelectronics**, 68, 699-704. *Open Access*
162. Van Thuan Nguyen, Young Seop Kwon, JaeHoon Kim, and **M.B. Gu** (2014), Multiple GO-SELEX for Efficient Screening of Flexible Aptamers, **Chemical Communications**, 139, 18, 4696-4701.
161. Insup Jung, Ho Bin Seo, Ji-eun Lee, Byoung Chan Kim, and **M.B. Gu** (2014), A dip-stick biosensor using bioluminescent bacteria encapsulated in color-coded alginate microbead for detection of water toxicity, **Analyst**, 50, 72, 10513-10516.
160. J. Chung, E.T. Hwang, J. H. Kim, B.C. Kim, and **M.B. Gu** (2014), Modular Multi-enzyme Cascade Process Using Highly Stabilized Enzyme Microbeads, **Green Chemistry**, 16 (3), 1163-1167
159. J.-W. Park, S. J. Lee, and **M.B. Gu** (2014), An Ultra-sensitive Detection of a Whole Virus using Dual Aptamers developed by Immobilization-free Screening, **Biosensors and Bioelectronics**, 51, 324-329, *most down-loaded and viewed article*.
158. Y. S. Kwon, N. H. Ahmad Raston and **M.B. Gu** (2014), An Ultra-sensitive Colorimetric Detection of Tetracyclines using the Shortest Aptamer with Highly Enhanced Affinity, **Chemical Communications**, 50, 1, 40-42 *Highlighted as a cover page article*

157. Kwang Suk Chang, Hancheol Joen, **M.B. Gu**, Seung Pil Pack and EonSeon Jin (2013), Conversion of carbon dioxide to oxaloacetate using integrated carbonic anhydrase and phosphoenolpyruvate carboxylase, **Bioprocess and Biosystems Engineering**, 36, 1923-1928*
156. A-P- Zeng and **M.B. Gu** (2013), Industrial biotechnology in Asia - recent advances in biofuels and biorefinery, **Engineering in Life Sciences**, 13, 419-420
155. Y. S. Kim, and **M.B. Gu** (2013), Advances in Aptamer screening and Small Molecule Aptasensors, **Advances in Biochemical Engineering/Biotechnology** (Book Series)- Aptamer and Enzyme Biosensors, 10, 2014, 225 (Book Chapter)
154. Ee Taek Hwang, Haemin Gang, and **M.B. Gu** (2013), CO₂ Bioconversion using Carbonic Anhydrase (CA): Effects of PEG Rigidity on the Structure of Bio-mineralized Crystal Composites, **Journal of Biotechnology**, 2, 168, 208-211.
153. Ji-eun Lee, Ji Hoon Kim, Sang Hwa Lee, Ji Young Kim, Shin Jee Mah and **M.B. Gu** (2013), In-situ on-fabric one-touch colorimetric detection using aptamer-conjugated gold nanoparticles, **BioChip Journal**, 7, 2: 180-187
152. E. T. Hwang, R. Tatavarty, J. Chung and **M.B. Gu** (2013), New Functional Amorphous Calcium Phosphate Nanocomposites by Enzyme-assisted Biomineralization, **ACS Applied Materials & Interfaces**, 5, 532-537
151. E.T. Hwang and **M.B. Gu** (2013), Enzyme Stabilization by Nano/ Micro-sized Hybrid Materials (Review), **Engineering in Life Science**, 13, 1, 49-61 *Highlighted as a cover page article*
150. S. J. Lee, Y.S. Kwon, J. Lee, E.-J. Choi, C.-H. Lee, J.-Y. Song. and **M.B. Gu** (2013), Detection of VR-2332 strain of Porcine Reproductive and Respiratory and Syndrome Virus Type II by Using an Aptamer-based Sandwich-Type Assay, **Analytical Chemistry**, 85, 66-74
149. J. Chung, E.T. Hwang, H. Gang and **M.B. Gu** (2013), Magnetic-separable Robust Microbeads Using a Branched Polymer for Stable Enzyme Immobilization, **Reactive and Functional Polymers**, 73, 39-45
148. J. Bang, L. R. Beuchat, H. Song, **M.B. Gu**, H.-I Chang, H. S. Kim, J.-H Ryu (2013), Development of a random genomic DNA microarray for the detection and identification of *Listeria monocytogenes* in milk, **International Journal of Food Microbiology**, 161, 134-141
147. Joo-Myung Ahn and **M.B. Gu** (2012), Geno-Tox: A Cell Array Biochip for Genotoxicity Monitoring and Classification, **Applied Biochemistry and Biotechnology**, 168, 4, 752-760
146. S.J. Lee, R. Tatavarty, **M.B. Gu** (2012), Electrospun Polystyrene-Poly(styrene-co-maleic anhydride) Nanofiber as a New Aptasensor Platform, **Biosensors and Bioelectronics**, 38, 302-307
145. J.-W. Park, S.S. Kallempudi, J.H. Niazi, Y. Gurbuz, B.-S. Youn, **M.B. Gu** (2012), Rapid and Sensitive Detection of Nampt (PBEF/Visfatin) in Human Serum using an ss DNA Aptamer-Based Capacitive Biosensor, **Biosensors and Bioelectronics**, 38, 233-238
144. E.T. Hwang, H. Gang, J. Chung, **M.B. Gu** (2012), Carbonic Anhydrase Assisted Calcium

Carbonate Crystalline Composites as a Biocatalyst, **Green Chemistry**, 14, 8, 2216-2220, *Highlighted as a cover page article*

143. E.T. Hwang, B. Lee, M. Zhang, S.-H Jun, J. Shim, J. Lee, J. Kim and **M.B. Gu** (2012), Immobilization and stabilization of subtilisin Carlsberg in magnetically separable mesoporous silica for the transesterification in an organic solvent, **Green Chemistry**, 14, 7, 1884-1887

142. S.J. Lee, J.-W.Park, I.-A. Kim, B.-S. Youn, **M.B. Gu** (2012) Sensitive Detection of Adipokines for early diagnosis of Type 2 Diabetes using Enzyme-linked Antibody-Aptamer Sandwich (ELAAS) assays, **Sensors and Actuators B: Chemical**, *In press*

141. C.H.Pharm, J.Yi, **M.B. Gu** (2012) Biomarker gene response in male Medaka (*Oryzias latipes*) chronically exposed to silver nanoparticle, **Ecotoxicology and Environmental Safety**, 78,239-245.

140. J.-W.Park, R.Tatavarty, D.W. Kim, H.-T. Jung and **M.B. Gu** (2012) Immobilization-free screening of aptamers assisted by graphene oxide, **Chemical Communications**, 48,15, 2071-2073, *Highlighted as a cover page article*

139. J.H. Kim, E.T. Hwang, K.-k. Kang, R. Tatavarty, **M.B. Gu** (2011) Aptamers-on-Nanofiber as a Novel Hybrid Capturing Moiety, **Journal of Materials Chemistry**, 21,19203-19206, *Highlighted as a back cover page article*

138. R.J. Mitchell, **M.B. Gu** (2011) Use of Protein Stability to Develop Dual Luciferase Toxicity Bioreporter Strains, **Biotechnology and Bioprocess Engineering**, 16, 1254-1261

137. C.H. Pham, K.S. Park, B.C. Kim, H.N. Kim, **M.B. Gu** (2011), Construction and characterization of Japanese medaka (*Oryzias latipes*) hepatic cDNA library and its implementation to biomarker screening in aquatic toxicology, **Aquatic Toxicology**, 105, 569-575

136. B.C. Kim, J. Lee, W. Um, J. Kim, J. Joo, J.H. Lee, J.H. Kwak, J.H. Kim, C. Lee, H. Lee, R.S. Addleman, T. Hyeon, **M.B.Gu** (2011), J. Kim, Magnetic mesoporous materials for removal of environmental wastes, **Journal of Hazardous Materials**, 192, 1140-1147

135. Y.S. Kim, J.H. Niazi, Y.J. Chae, U.Go, **M.B. Gu** (2011), Aptamers-in-liposome for selective and multiplexed capturing of small organic compounds, **MACROMOLECULAR RAPID COMMUNICATIONS**, 32, 1169-1173.

134. Y.S. Kim, J.H. Kim, I.A. Kim, S.J. Lee, **M.B. Gu** (2011), The Affinity Ratio - Its Pivotal Role in Gold Nanoparticle-based Competitive Colorimetric Aptasensor, **Biosensors and Bioelectronics**, 26, 4058-4063.

133.J.H. Niazi, B-I. Sang, Y.S. Kim, **M.B. Gu** (2011),Global gene response in *Saccharomyces cerevisiae* exposed to silver nanoparticles, **Applied Biochemistry and Biotechnology**, 164,1278-1291

132. J.H. Jang, S-J. Kim, B.H. Yoon, J-H. Ryu, **M.B. Gu** (2011), H-I. Chang, Detection of *Alicyclobacillus* species in fruit juice using a random genomic DNA microarray chip, **Journal of Food Protection**, 74, 6, 933-938

131. E.T. Hwang, H. Lee, J.H Kim, R. Tatavarty, **M.B. Gu** (2011), Highly-stable magnetically-

separable organic-inorganic hybrid microspheres for enzyme entrapment, **Journal of Materials Chemistry**, 21 (18), 6491 – 6493.

130. J.Y.Lee, B.C.Kim, K.J.Chang, J.M.Ahn, J.H.Ryu, H.I.Chang, **M.B.Gu** (2011), A Subtractively Optimized DNA Microarray Using Non-sequenced Genomic Probes for the Detection of Food-Borne Pathogens, **Applied Biochemistry and Biotechnology**, 164:183–193

129. E.T. Hwang, R.Tatavarty, H. Lee, Jb Kim, **M.B. Gu** (2011), Shape reformable polymeric nanofibers entrapped with QDs as a scaffold for enzyme stabilization. **Journal of Materials Chemistry**, 21, 5215-5218, *Selected on the cover page*

128. R.Tatavarty, E.T. Hwang, J.-W. Park, J-H. Kwak, J-O Lee, **M.B. Gu** (2011), Conductive quantum dot-encapsulated electrospun nanofibers from polystyrene and polystyrene-co-maleic anhydride copolymer blend as gas sensors. **Reactive and Functional Polymers**, 71,104–108

127. B.C.Kim, X. Zhao, H.-K. Ahn, J.H. Kim, H.-J, Lee, K.W Kim, S. Naire, E. Hsiao, H. Jia, M.-K. Oh, B.I. Sang, B.-S. Kim, S.H. Kim, Y.C. Kwon, S.H, **M.B.Gu** (2011), P. Wang, J.B. Kim, Highly stable enzyme precipitate coatings and their electrochemical applications, **Biosensors and Bioelectronics**, 26, 1980–1986

126. J. Bang, L.R. Beuchat, **M.B. Gu**, H.-I. Chang, J.-H. Ryu (2010), Identification of *Yersinia enterocolitica* using a random genomic DNA microarray chip. **Letters in Applied Microbiology**, 51(6), 665–670

125. Y.S. Kim, J.H. Kim, I. A. Kim, S.J. Lee, J.S. Jurng, **M.B. Gu** (2010), A novel colorimetric aptasensor using gold nanoparticle for a highly sensitive and specific detection of oxytetracycline. **Biosensors and Bioelectronics**, 26, 1644–1649

124. H.K. Ahn, B.C. Kim, S.H. Jun, M.S. Chang, D.Lopez-Ferrer, R.D. Smith, **M.B. Gu**, S.W. Lee, B.S. Kim, J.B. Kim (2010), Robust Trypsin Coating on Electrospun Polymer Nanofibers in Rigorous Conditions and Its Uses for Protein Digestion. **Biotechnology & Bioengineering**, 107(6), 917-923

123. K.S Kim, **M.B. Gu**, D.H. Kang, J.W. Park, I.H. Song, H.S. Jung, K.Y. Suh (2010) High-sensitivity detection of oxytetracycline using light scattering agglutination assay with aptasensor, **Electrophoresis**, 31, 1–6

122. B.C. Kim, J.H. Park, **M.B. Gu** (2010), Implementation of Random Bacterial Genomic DNA Microarray Chip(RBGDMC) for Screening of Dominant Bacteria in Complex Cultures. **Applied Biochemistry and Biotechnology**, 162, 2284–2293

121. J.M.Ahn, J.H. Kim, J.H. Kim, **M.B. Gu** (2010), Randomly Distributed Arrays of Optically Coded Functional Microbeads for Toxicity Screening and Monitoring. **Lab on a Chip**, 10, 2695-2071, *Selected and highlighted on the back cover page*

120. Y.S Kim, C.J. Hyun, I.A. Kim, **M.B. Gu** (2010), Isolation and Characterization of Enantioselective DNA aptamers for Ibuprofen. **Bioorganic & Medicinal Chemistry**, 18, 3467-3473

119. N.J. Oviedo, J. Morokuma, P.Walentek, I. P. Kema, **M.B. Gu**, J.M. Ahn, J.S. Hwang,

- T.Gojobori, M. Levin (2010), Long-range neural and gap junction protein-mediated cues control polarity during planarian regeneration. **Developmental Biology**, 339, 188-199
118. Y.J. Kim, Y.S. Kim, J.H. Niazi, **M.B. Gu** (2010), Electrochemical aptasensor for tetracycline detection. **Bioprocess and Biosystems engineering**, 33, 31-37
117. J. Kim, H.J. Park, J.H. Lee, J.S. Hahn, **M.B. Gu**, J. Yoon(2009), Differential effect of chlorine on the oxidative stress generation in dormant and active cells within colony biofilm. **Water research**, 43, 5252-5259
116. J.M. Ahn, E.T. Hwang, C.H. Youn, D.L. Banu, B.C. Kim, J.H. Niazi, **M.B. Gu** (2009), Prediction and classification of the modes of the genotoxic actions using bacterial biosensors specific for DNA damages. **Biosensors & Bioelectronics**, 25, 767-772
115. J.W. Lee, H.B. Na, B.C. Kim, J.H. Lee, B.S. Lee, J.H. Kwak, Y.S. Hwang, J.G. Park, **M.B. Gu**, J.Y. Kim, J. Joo, C.H. Shin, J.W. Grate, T.G. Hyeon, J.B. Kim(2009), Magnetically-Separable and Highly-Stable Enzyme System Based on Crosslinked Enzyme Aggregates Shipped in Magnetite-Coated Hierarchically-Ordered Mesocellular Mesoporous Silica. **Journal of Materials Chemistry**, 19, 7864-7870
114. Y.J. Chae, C.H. Pham, J.W. Lee, E.J. Bae, J.H. Yi, **M.B. Gu** (2009), Evaluation of the toxic impact of silver nanoparticles on Japanese medaka (*Oryzias latipes*). **Aquatic Toxicology**, 94, 320-327 *
113. C.B. Jeong, J.H. Niazi, S.J. Lee, **M.B. Gu** (2009). ssDNA Aptamers that recognize Diclofenac and 2-anilinophenylacetic acid. **Bioorganic & Medical Chemistry**, 17, 5380-5387.
112. J.S. Chang, **M.B. Gu**, and K.W. Kim (2009). Effect of Arsenic on p53 Mutation and Occurrence of Teratogenic Salamanders: Their Potential as Ecological Indicators for Arsenic Contamination. **Chemosphere**, 75(2009), 948-954*
111. J.E. Hong, J.M. Ahn, B.C. Kim, **M.B. Gu** (2009), Construction of a functional network for common DNA damage responses in *Escherichia coli*. **Genomics**, 93(2009),514-524, *Selected and highlighted on the cover page**
109. B.C. Kim, S.M. Lee, D. Lofez-Ferrer, H.K. Kim, S. Nair, S.H. Kim, B.S. Kim, K. Petritis, D.G. Camp, J.W. Grate, R.D. Smith, Y.M. Koo, J.B. Kim, **M.B. Gu** (2009), Highly stable trypsin-aggregate coatings on polymer nanofibers for repeated protein digestion, **Proteomics**, 9, 1893-1900, highlighted on the journal cover page.
108. H.J. Park, J.Y. Kim, J.E. Kim, J.H. Lee, J.S. Han, **M.B. Gu**, J.Y. Yoon (2009). Silver-ion-mediated reactive oxygen species generation affecting bactericidal activity. **Water research**, 43, 1027-1032
107. Y.S. Kim, J.H. Niazi, **M.B. Gu** (2009) Specific detection of oxytetracycline using DNA aptamer immobilized interdigitated array electrode chip, **Analytica Chimica Acta**, 634, 250-254
106. S.R. Lee, S.J. Sim, C.H. Park, **M.B. Gu**, U.Y. Hwang, J.H. Yi, B.K. Oh, J.W. Lee (2008), Development of Surface Plasmon Resonance Immunosensor through Metal Ion Affinity and Mixed Self-Assembled Monolayer, **Journal of Microbiology and Biotechnology**, 18(10), 1695-1700

105. Y.S. Kim, S.J. Lee and **M.B. Gu** (2008), Electrochemical Aptamer- based Biosensors. **Biochip Journal**, 2, 175-182
104. J.H. Niazi, B.C. Kim, J.M. Ahn, **M.B. Gu** (2008) "A novel bioluminescent bacterial biosensor using the highly-specific oxidative stress-inducible *pgi* gene", **Biosensors and Bioelectronics**, 24, 670-675.
103. J.H. Niazi, S.J. Lee, **M.B. Gu** (2008) "Single stranded DNA aptamers specific for antibiotics tetracyclines", **Bioorganic and Medicinal Chemistry**, 16, 7245-7253
102. E.T. Hwang, J.H. Lee, Y.J. Chae, Y.S. Kim, B.C. Kim, B.I. Sang, **M.B. Gu** (2008) "Analysis of the Toxic Mode of Action by Silver Nano-Particles Using Stress-Specific Bioluminescent Bacteria", **Small**, 4(6),746-750
101. S.J. Lee, B.S. Youn, J.W. Park, J.H. Niazi, Y.S. Kim, **M.B. Gu** (2008), "A ssDNA aptamer-based SPR biosensor for the detection of RBP4 for the early diagnosis of type 2 diabetes" **Analytical Chemistry**, 80, 2867-2873
100. E.T. Hwang, J.M.Ahn, B.C.Kim, **M.B. Gu** (2008), "Construction of a *nrdA::luxCDABE* Fusion and Its Use in *Escherichia coli* as a DNA Damage Biosensor", **Sensors**, 8,1297-1307
99. T. Elad, S. Belkin, J.H. Lee, **M.B. Gu** (2008), "Review - Microbial whole-cell arrays" (2008) **Microbial Biotechnology**, 1(2), 137-148.
98. J.H. Niazi, S.J. Lee, Y.S. Kim, **M.B. Gu** (2008) "ssDNA aptamers that selectively bind oxytetracycline" **Bioorganic & Medicinal Chemistry**, 16, 1254-1261.
97. B.S. Jeon, Y. S. Um, S.M. Lee, S.H. Lee, H.J. Kim, Y.H. Kim, **M.B. Gu**, and B.I. Sang (2008) "Performance analysis of PEMFC integrated with trickling bed bioreactor for biological high-rate hydrogen production", **Energy and fuels**, 22, 83-86
96. S.H. Kim, S. Nair, B.C. Kim, **M.B. Gu**, J. Kim (2008) "Sustainable biocatalytic nanofibers" **ACS symposium series**, 986, biomolecular catalysis, 129-143 [Book Chapter]
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