

Hong Yul Cho

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RESEARCH EXPERIENCE

Postdoc (Chemistry) Ulsan National Institute of Science and Technology, Ulsan, Korea	2016 -
Postdoc (Pharmacy) University of Illinois at Chicago, Chicago, IL, USA	2015 - 2016
Research Assistant (Chemistry) Carnegie Mellon University, Pittsburgh, PA, USA	2011 - 2014
Visiting Scholar (Chemistry and Chemical Biology) Cornell University, Ithaca, NY, USA	2006 - 2007

EDUCATION

Ph.D. (Chemistry) Carnegie Mellon University, Pittsburgh, PA, USA	2014
Thesis: Synthesis of Multifunctional Star Polymers for Potential siRNA Delivery	
Advisor: Prof. Krzysztof Matyjaszewski	
M.S. (Polymer Science and Engineering) Pusan National University, Busan, Korea	2008
Advisor: Prof. Hyun-jong Paik	
B.S. (Polymer Science and Engineering) Pusan National University, Busan, Korea	2005

HONORS & AWARDS

- Best Poster Award, 2006 IUPAC International Symposium on Advanced Polymer for Emerging Technologies Commemorating the 30th Anniversary of the Polymer Society of Korea
- Best Poster Award, 2005 Pusan-Kyeongnam / Kyushu-Seibu Joint Symposium on High Polymers (12th) and Fibers (10th)
- University Scholarship for graduate school, Pusan National University (2005)
- University Scholarship, Pusan National University (1998, 2003, 2004)

RESEARCH SKILLS

- Polymer Synthesis (ATRP) and Characterization Techniques (GPC with RI or MALLS, GC, HPLC, FT-IR, NMR, DLS, Zeta-Potential, DSC, TGA, TEM, and SEM)
- Polymer Encapsulation of Nanoparticles
- Bioconjugation (Peptide-Polymer and Protein-Polymer)
- Biological Skills (Polyplex, Cell Handling and Imaging)

RESEARCH INTERESTS

- Controlled Polymerization and Polymer Chemistry
- Multifunctional Polymers with Controlled Architectures
- Mechanochemical Polymerization

TEACHING EXPERIENCE

- Teaching Assistant for Lab and Courses: Organic Chemistry, Modern Chemistry, and Introduce to Modern Chemistry at Carnegie Mellon University **2008 – 2011, 2013 - 2014**
- Lab Teaching Assistant: Polymer Synthesis and Polymer Analysis at Pusan National University **2004 - 2005**

PUBLICATIONS (<https://scholar.google.com/citations?user=xkzBeHsAAAAJ&hl=en>)

1. **H.Y. Cho**, P. Krys, K. Szczesniak, H. Schroeder, S. Park, S. Jurga, M. Buback, K. Matyjaszewski, Synthesis of Poly(OEOMA) Using Macromonomers via “Grafting-Through” ATRP, *Macromolecules* **2015**, 48, 6385-6395, DOI: 10.1021/acs.macromol.5b01592, ISSN: 0024-9297, published: 2015.09.09.
2. F. Snijkers, **H.Y. Cho**, A. Nese, W. Pyckhout-Hintzen, K. Matyjaszewski, D. Vlassopoulos, Effects of Core Microstructure on Structure and Dynamics of Star Polymer Melt: From Polymeric to Colloidal Response, *Macromolecules* **2014**, 15, 5347-5356, DOI: 10.1021/ma5008336, ISSN: 0024-9297, published: 2014.08.12.
3. E.W. Hsu, S. Liu, A.R. Shrivats, A.C.S. Watt, S. McBride, S.E. Averick, **H.Y. Cho**, K. Matyjaszewski, J.O. Hollinger, Cationic Nanostructured Polymers for siRNA Delivery in Murine Calvarial Pre-Osteoblasts, *Journal of Biomedical Nanotechnology* **2014**, 10, 1130-1136, DOI: dx.doi.org/10.1166/jbn.2014.1823, ISSN: 1550-7033, published: 2014.06.06.
4. S. Park, **H.Y. Cho**, K. Wegner, J. Burdynska, A.J.D. Magenau, H.-j. Paik, S. Jurga, K. Matyjaszewski, Star Synthesis Using Macroinitiators via Electrochemically Mediated Atom Transfer Radical Polymerization, *Macromolecules* **2013**, 46, 5856-5860, DOI: 10.1021/ma401308e, ISSN: 0024-9297, published: 2013.08.13.
5. M. Makrocka-Rydzik, A. Wypych, M. Dobies, M. Jancelewicz, S. Jurga, **H.Y. Cho**, H. Gao, K. Matyjaszewski, Molecular Dynamics in PBA/PEO Miktoarm Star Copolymers, *Polymer* **2013**, 54, 3341-3349, DOI: 10.1016/j.polymer.2013.04.004, ISSN: 0032-3861, published: 2013.06.07.
6. **H.Y. Cho**, S.E. Averick, E. Paredes, K. Wegner, A. Averick, S. Jurga, S.R. Das, L. Matyjaszewski, Star Polymers with a Cationic Core Prepared by ATRP for Cellular Nucleic Acids Delivery, *Biomacromolecules* **2013**, 14, 1262-1267, DOI: 10.1021/bm4003199, ISSN: 1525-7797, published: 2013.05.13.
7. S.E. Averick, E. Paredes, A. Irastorza, A.R. Shrivats, A. Srinivasan, D.J. Siegwart, A.J.D. Magenau, **H.Y. Cho**, E. Hsu, A. Averick, J. Kim, S. Liu, J.O. Hollinger, S.R. Das, K. Matyjaszewski, Preparation of Cationic Nanogels for Nucleic Acid Delivery, *Biomacromolecules* **2012**, 13, 3445-3449, DOI: 10.1021/bm301166s, ISSN: 1525-7797, published: 2012.11.12.
8. M. Makrocka-Rydzik, A. Wypych, K. Szpotkowski, M. Kozak, S. Jurga, H. Gao, **H.Y. Cho**, K. Matyjaszewski, Structural Studies of Poly(butyl acrylate)-Poly(ethylene oxide) Miktoarm Star Polymers,

- Polymer* **2011**, *52*, 5513-5520, DOI: 10.1016/j.polymer.2011.09.020, ISSN: 0032-3861, published: 2011.11.10.
9. **H.Y. Cho**, A. Srinivasan, J. Hong, E. Hsu, S. Liu, A. Shrivats, D. Kwak, A.K. Bohaty, H.-j. Paik, J.O. Hollinger, K. Matyjaszewski, Synthesis of Biocompatible PEG-Based Star Polymers with Cationic and Degradable Core for siRNA Delivery, *Biomacromolecules* **2011**, *12*, 3478-3486, DOI: 10.1021/bm2006455, ISSN: 1525-7797, published: 2011.10.10.
 10. **H.Y. Cho**, M.A. Kadir, B.-S. Kim, H.S. Han, S. Nagasundarapandian, Y.-R. Kim, S.B. Ko, S.-G. Lee, H.-j. Paik, Synthesis of Well-Defined (Nitrilotriacetic Acid)-End-Functionalized Polystyrenes and Their Bioconjugation with Histidine-Tagged Green Fluorescent Proteins, *Macromolecules* **2011**, *44*, 4672-4680, DOI: 10.1021/ma200480f, ISSN: 0024-9297, published: 2011.06.28.
 11. J. Burdynska, **H.Y. Cho**, L. Mueller, K. Matyjaszewski, Synthesis of Star Polymers Using ARGET ATRP, *Macromolecules* **2010**, *43*, 9227-9229, DOI: 10.1021/ma101971z, ISSN: 0024-9297, published: 2010.11.23.
 12. S. Park, **H.Y. Cho**, J. A. Yoon, Y. Kwak, A. Srinivasan, J. O. Hollinger, H.-j. Paik, K. Matyjaszewski, Photo-Cross-Linkable Thermoresponsive Star Polymers Designed for Control of Cell-Surface Interactions, *Biomacromolecules* **2010**, *11*, 2647-2652, DOI: 10.1021/bm100630f, ISSN: 1525-7797, published: 2010.10.11.
 13. **H.Y. Cho**, H. Gao, A. Srinivasan, J. Hong, S.A. Bencherif, D. J. Siegwart, H.-j. Paik, J. O. Hollinger, K. Matyjaszewski, Rapid Cellular Internalization of Multifunctional Star Polymers Prepared by Atom Transfer Radical Polymerization, *Biomacromolecules* **2010**, *11*, 2199-2203, DOI: 10.1021/bm1006272, ISSN: 1525-7797, published: 2010.09.13.
 14. **H.Y. Cho**, B.H. Han, I. Kim, H.-j. Paik, New Tridentate Ligands with Mixed Donor Atoms for Cu-based Atom Transfer Radical Polymerization, *Macromolecular Research* **2006**, *14*, 539-544, DOI: 10.1007/BF03218721, ISSN: 1598-5032, published: 2006.10.01.

PATENTS

1. H.-j. Paik, B.G. Kim, J.H. Choi, S.B. Oh, C.H. Park, M.J. Kim, T.H. Jung, J.H. Chang, **H.Y. Cho**, J.H. Han, S.K. Cho, Method for Modifying a Surface of Carbon Nanotube, **2006**, KR Pat. 0652861
2. H.-j. Paik, H.O. Yoo, J.A. Kim, S.-G. Lee, **H.Y. Cho**, H.K. Lee, S.J. Kim, H. Aleya, Y.J. Kim, (Nitrilotriacetic Acid)-end-functionalized Polymer, Synthesis Method Thereof and Analyzing, Separating or Purifying Method of Protein Using the Same. **2008**, KR Pat. 0842114
3. H.-j. Paik, S.-G. Lee, S.J. Kim, J.Y. Lee, E. Ryu, H.K. Lee, H.L. Kim, I.-s. Jo, **H.Y. Cho**, Multifunctional Microcarrier for Water Dispersive Nanoparticles and Encapsulation Method for the Same, **2010**, KR Pat. 0949398

BOOK CHAPTERS

1. **H.Y. Cho**, J. Bugno, S. Hong, Dendritic Nanocarrier Platforms for Gene and Drug Delivery Applications, in *Perspectives in Micro and Nanotechnology for Biomedical Applications*, Imperial College Press, UK, **2015**, In Press.
2. M.A. Kadir, **H.Y. Cho**, B.-S. Kim, Y.-R. Kim, S.-G. Lee, U. Jeong, H.-j. Paik, (Nitrilotriacetic Acid)-End-Functionalized Polystyrenes Synthesized by ATRP, in *ACS Symp. Ser.* **2012**, Vol. 1101, 303-314 (2012-03-20)

CONFERENCE PRESENTATIONS

1. Stars with a Multifunctional Core for siRNA Delivery, *CRP Consortium*, Oct. 2013, Pittsburgh, PA
2. Polymers Prepared by ATRP for Nucleic Acid Delivery, *CRP Consortium*, Apr. 2013, Pittsburgh, PA
3. Cationic Polymers for Nucleic Acid Delivery, *CRP Consortium*, Oct. 2012, Pittsburgh, PA
4. Designing of Polymeric Materials for Nucleic Acid Delivery, *CRP Consortium*, Apr. 2012, Pittsburgh, PA
5. Star Polymers for siRNA Delivery, *CRP Consortium*, Oct. 2011, Pittsburgh, PA
6. Poly(ethylene glycol) Star Polymers with Cationic Core for siRNA Delivery Prepared by Atom Transfer Radical Polymerization, *242nd ACS National Meeting*, 2011, Denver, CO
7. Well-defined (Nitrilotriacetic Acid)-end-functionalized Polystyrenes and Their Bioconjugation with Histidine Tagged Proteins, *242nd ACS National Meeting*, 2011, Denver, CO
8. Bioconjugation of ATRP for Biomedical Application, *CRP Consortium*, Apr. 2011, Pittsburgh, PA
9. PEG Star Polymers with Cationic Core for siRNA Delivery System, *CRP Consortium*, Oct. 2010, Pittsburgh, PA
10. PEO Containing Cationic Star Polymers for siRNA Delivery, *CRP Consortium*, Sep. 2009, Pittsburgh, PA
11. Synthesis and Characterization of (Nitrilotriacetic Acid)-End-Functionalized Polystyrene, *IUPAC International Symposium on Advanced Polymer for Emerging Technologies (PKS 30)*, Oct. 2006, Busan, Korea
12. Synthesis of Nitrilotriacetic Acid-end-functionalized Polystyrene Using Atom Transfer Radical Polymerization, *232nd ACS National Meeting*, 2006, San Francisco, CA
13. New Catalytic System for Atom Transfer Radical Polymerization, *3rd International Symposium on Advanced Materials in Asia-Pacific Rim*, May 2006, Ulsan, Korea
14. Development of New Catalysts for Atom Transfer Radical Polymerization, *Pusan-Kyeongnam / Kyushu-Seibu Joint Symposium on High Polymers (12th) and Fibers (10th)*, Nov. 2005, Kitakyusu Fukuoka, Japan