

Chayanon Ngambenjawong

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Education

University of Washington, Seattle, WA

September 2012 – Present

Graduate student, Doctor of Philosophy in Bioengineering (GPA 3.86/4.00)

PhD candidacy granted on December 2015

Advisor: Robert F. Rushmer Prof. Suzie H. Pun

Chulalongkorn University, Thailand

August 2007 – May 2011

Bachelor of Engineering in Nanoengineering (GPA 3.99/4.00)

Highest Honors

Research Experience/Employment

Graduate Student in Pun Laboratory

September 2012 – Present

Department of Bioengineering, University of Washington, Seattle

Advisor: Robert F. Rushmer Prof. Suzie H. Pun

- Development of tumor-associated macrophage (TAM)-targeting therapeutics
 - Synthesize and evaluate multivalent M2 macrophage-targeting peptide (M2pep) constructs to improve binding avidity to M2 macrophages and TAMs
 - Evaluate serum stability of M2pep and investigate strategies to improve its serum stability
 - Investigate alternative therapeutic cargos for M2pep-based drug delivery system to selectively deplete TAMs

Research Assistant in BioNEDD Laboratory

May 2011 – August 2012

Department of Biomedical Engineering, Mahidol University, Thailand

Advisor: Assoc. Prof. Norased Nasongkla

- Development of antibacterial catheter

Undergraduate Research Assistant in Nanomedicine Laboratory

October 2011 – March 2012

Department of Anatomy, School of Medicine, Chulalongkorn University, Thailand

Advisor: Assist. Prof. Amornpun Sereemaspun, MD

- Analyzing cytotoxic effect of gold nanoparticles and *Colocasia gigantea* extract on A375 melanoma cell line

Summer Intern in Hilton Research Group

June 2010 – July 2010

School of Pharmacy, University of London, UK

Advisor: Dr. Stephen Hilton

- Novel synthesis of hymenialdisine

Summer Intern at the Center of Excellence in Nanotechnology

June 2009 – July 2009

Asian Institute of Technology, Thailand

Advisor: Prof. Joydeep Dutta

- Optimization of layer-by-layer nanoparticles coating on glass slide

Teaching Experience

Teaching assistant, University of Washington

March 2015 – June 2015

Bioengineering 215: Introduction to Bioengineering Problem Solving

Course instructor: Dr. Dianne Hendricks

- Led 83 undergraduate students through discussion sections related to 1) engineering design process, 2) literature critics, and 3) creative problem solving techniques
- Partially designed and graded student assignments, prepared grading rubrics, and provided feedback on students' performance on assignments

Publications

Ngambenjawong C, Cieslewicz M, Schellinger JG, Pun SH, "Synthesis and evaluation of multivalent M2pep peptides for targeting alternatively activated M2 macrophages." *J Control Release*. (Accepted)

Chu DS, Bocek MJ, Shi J, Ta A, **Ngambenjawong C**, Rostomily RC, Pun SH, "Multivalent display of pendant pro-apoptotic peptides increases cytotoxic activity." *J Control Release* 2015; 205: 155-61.

Kitsomboonloha R, **Ngambenjawong C**, Mohammed WS, Hornyak GL and Dutta J, "Plasmon resonance tuning of gold and silver nanoparticle-insulator multilayered composite structures for optical filters." *Micro & Nano Letters* 2011; 6(6): 342-344.

Udomthongsuk N, Sereemasapun A, Korkiatsakul V, **Ngambenjawong C**, Supaphol P, "Optimization of influencing parameters for fabrication of gold-nanoparticle-based nucleic acid lateral flow strip test." *International Proceedings of Chemical, Biological & Environmental Engineering (IPCBBE)* 2010; 11: 65-69.

Presentations

Ngambenjawong C, Cieslewicz M, Schellinger JG, Pun SH. Multivalent M2pep for improving selective toxicity to M2-like tumor associated macrophages. 13th International Nanomedicine & Drug Delivery Symposium (NanoDDS), Seattle, WA, September 2015. Poster presentation.

Ngambenjawong C, Cieslewicz M, Schellinger JG, Pun SH. Investigation of multivalent M2pep for M2 macrophage targeting and cytotoxicity. Drug Delivery Conference, Tucson, AZ, September 2015. Poster presentation. 2nd prize poster award

Ngambenjawong C, Cieslewicz M, Schellinger JG, Chu DS, Pun SH. Optimization of M2 Macrophage-binding Peptide (M2pep) for Targeted Drug Delivery to Tumor-associated Macrophages (TAMs). 12th International Nanomedicine & Drug Delivery Symposium (NanoDDS), Chapel Hill, NC, October 2014. Poster presentation.

Laboratory Skills

Chemistry: Synthesis of small molecules, peptides, polymers (ATRP, RAFT polymerization), and nanoparticles

Bioconjugation techniques

Analytical techniques: HPLC, GPC, ESI-MS, MALDI-TOF MS, NMR, FTIR

Biology: Tissue culture techniques, general bioassays, flow cytometry, confocal/light microscopy

Animal handling (mouse): tumor inoculation, retro-orbital injection, perfusion and organ harvest, mouse bone marrow harvest

Awards

Anandamahidol Foundation Fellowship (Full tuition support)	2011 – Present
Gold medal for academic excellence, Chulalongkorn University	2011
ISE100 Scholarship, Chulalongkorn University (Full tuition support)	2009 – 2010

Extracurricular/Outreach Activities

- Organized fun activities and lunch treat for children in a rural school in Nakhon Ratchasima province, Thailand on Children's day (2011)
- Volunteered in the Voluntary Engineering Student Camp (constructed a bridge in a rural area of Loei province, Thailand) (2009)
- Appointed a field trip head organizing an on-campus lab visit as well as an off-campus visit to Thailand Science Park as a part of freshmen orientation (2008)
- Appointed an academic head organizing a student-led pre-physics summer course for freshmen (2008)
- Organized a recreation camp for Singapore underprivileged children (2006)