

**YOUNGHA RYU, Ph.D.**  
Texas Christian University  
Department of Chemistry, Box 298860  
Fort Worth, TX 76129  
1-817-257-6199  
E-mail: y.ryu@tcu.edu

### **EDUCATION AND TRAINING**

**Postdoc.** The Scripps Research Institute, La Jolla, California, 2004-2007  
Research advisor: Professor Peter G. Schultz

**Ph.D.** Chemistry, Texas A&M University, College Station, Texas, 2004  
Advisor: Professor A. Ian Scott

**M.S.** Bioorganic Chemistry, Pohang University of Science and Technology (POSTECH),  
Pohang, South Korea, 1993  
Advisor: Professor Sung-Kee Chung

**B.S.** Chemistry, POSTECH, South Korea, 1991

### **PROFESSIONAL APPOINTMENT**

**Assistant Professor**, Texas Christian University, 2007 - Present

**Research Associate**, The Scripps Research Institute, 2004 -2007

**Research Scientist**, Hanhyo Institute of Technology, Hanil Synthetic Fiber Inc., Taejon,  
South Korea, 1993-1998

### **HONORS AND AWARDS**

- *A. E. Martell Travel Award*, 2004
- *Moojin Science and Technology Foundation Graduate Research Fellowship*, South Korea March 1991- February 1993
- *Highest Honors in Chemistry, magna cum laude*, POSTECH, Korea, 1991
- The Second Prize in the National Undergraduate Research Contest of Korea, 1990

### **MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

- American Chemical Society
- Korean-American Scientists Engineers Association (KSEA)

### **PUBLICATIONS**

18. Cellitti, S. E.; Jones, D. H.; Lagpacan, L.; Hao, X.; Zhang, Q.; Hu, H.; Brittain, S. M.; Brinker, A.; Caldwell, J.; Bursulaya, B.; Spraggon, G.; Brock, A.; Ryu, Y.; Uno, T.; Schultz, P. G.; Geierstanger, B. H. "In vivo Incorporation of Unnatural Amino Acids to Probe Structure, Dynamics, and Ligand Binding in a Large Protein by Nuclear Magnetic Resonance Spectroscopy", *J. Am. Chem. Soc.* **2008**, *130*, 9268.

17. Schultz, K. C.; Supekova, L.; Ryu, Y.; Xie, J.; Perera, R.; Schultz, P.G. "A genetically encoded infrared probe", *J. Am. Chem. Soc.* **2006**, *128*, 13984.
16. Ryu, Y.; Schultz, P. G. "Efficient incorporation of unnatural amino acids into proteins in *Escherichia coli*", *Nat. Methods* **2006**, *3*, 263.
15. Deiters, A., Groff, D., Ryu, Y., Xie, J., Schultz, P.G. "A genetically encoded photocaged tyrosine" *Angew. Chem. Int. Ed.* **2006**, *45*, 2728.
14. Taso, M.-L.; Summerer, D.; Ryu, Y.; Schultz, P.G. "The genetic incorporation of a distance probe into proteins in *Escherichia coli*", *J. Am. Chem. Soc.* **2006**, *128*, 4572.
13. Ryu, Y.; Kim, K.-J.; Roessner, C. A.; Scott, A. I. "Decarboxylative Claisen condensation catalyzed by *in vitro* selected ribozymes", *Chem. Commun.* **2006**, 1439.
12. Ryu, Y.; Scott, A. I. "Efficient one step syntheses of isoprenoid conjugates of nucleoside 5'-diphosphate", *Org. Lett.* **2003**, *5*, 4713.
11. Ryu, Y.; Scott, A. I. "Self-condensation of activated malonic acid half esters: a model for the decarboxylative Claisen condensation in polyketide biosynthesis" *Tetrahedron Lett.* **2003**, *44*, 7499.
10. Chung, S. K.; Zhao, L. M.; Ryu, Y. "Synthesis of DL-6-O-(2-aminoethyl-1-phosphono)-*myo*-inositol-1,3,4,5-tetrakisphosphate as a precursor of affinity material for I(1,3,4,5)P<sub>4</sub> binding proteins" *Bull. Korean. Chem. Soc.* **1999**, *20*, 846.
9. Kim, G.; Kang, S.; Ryu, Y., Geum, G.; Seo, M. J. "A Pd-catalyzed double coupling reaction to 4, 5-disubstituted imidazole alkynes" *Synth. Comm.* **1999**, *29*, 507.
8. Kim, G.; Ryu, Y. "A new route to a key chiral intermediate of thienamycin from *trans*-ethyl crotonate" *Bull. Korean Chem. Soc.* **1996**, *17*, 493.
7. Chung, S. K.; Chang, Y. T.; Ryu, Y. "A divergent approach toward synthesis of *myo*-inositol phosphates: acyl migration and regioselectivity" *Pure Appl. Chem.* **1996**, *68*, 931.
6. Lee, S. J.; Cho, S. J.; Oh, K. S.; Cui, C.; Ryu, Y.; Chang, Y. T.; Kim, K. S.; Chung, S. K. "*Ab initio* conformational study of 1,2:4,5-Di-O-isopropylidene-*myo*-inositol" *J. Phys. Chem.* **1996**, *100*, 10111.
5. Ryu, Y.; Kim, G. "A practical and divergent way to trihydroxylated pyrrolidine derivatives as potential glycosidase inhibitors via stereoselective intermolecular *cis*-amidoalkylations" *J. Org. Chem.* **1995**, *60*, 103.
4. Chung, S. K.; Ryu, Y. "Regioselective functionalizations and conformational studies of the di-O-isopropylidene-*myo*-inositol derivatives" *Carbohydr. Res.* **1994**, *258*, 145.
3. Chung, S. K.; Ryu, Y.; Chang, Y. T.; Whang, D.; Kim, K. "Crystal structures of 1,2:4,5-di-O-isopropylidene-*myo*-inositol and 1,2:5,6-di-O-isopropylidene-*myo*-inositol: a conformational analysis" *Carbohydr. Res.* **1994**, *253*, 13.
2. Chung, S. K.; Moon, S. H.; Ryu, Y. "Synthesis of D-Mannose-1,4,6-trisphosphate as an analogue of L-*myo*-inositol-1,4,5-trisphosphate" *Kor. J. Med. Chem.* **1992**, *2*, 131.
1. Chung, S. K.; Ryu, Y.; Chang, Y. T.; Moon, S. H. "Synthesis of *myo*-inositol-1,4,5-trisphosphate and *myo*-inositol-1,4-bisphosphate" *Kor. J. Med. Chem.* **1992**, *2*, 33.

## PATENTS

2. Cellitti, S. E.; Jone, D.; Ryu, Y.; Schultz, P.G.; Geierstanger, B. H. "Methods and compositions for the site-selective incorporation of fluorinated amino acids into polypeptides" Provisional US Patent Application: P1315US00; PCT International Patent Application: PCT/US2008/079603.
1. Ryu, Y.; Schultz, P.G. "Systems for the expression of orthogonal translation components in eubacterial host cells" US Patent Application: 54-0017100US and follow-up patent applications in many other countries including European Union, Japan, Korea, India, and China.