

## **Publications Related to the AIC Mass Spectrometry Facility**

**2001–2005**

### **2005**

1. Witte, R.P. and W.Y.J. Kao, *Keratinocyte-fibroblast paracrine interaction: the effects of substrate and culture condition*. *Biomaterials*, 2005. **26**(17): p. 3673–3682.
2. Shen, B., *Targeted carrier fusions for delivery of chemotherapeutic agents*. 2005, (Wisconsin Alumni Research Foundation, USA). Application: WO WO. p. 109 pp.
3. Liu, W., et al., *The Neocarzinostatin Biosynthetic Gene Cluster from Streptomyces carzinostaticus ATCC 15944 Involving Two Iterative Type I Polyketide Synthases*. *Chemistry & Biology*, 2005. **12**(3): p. 293–302.
4. Ju, J., et al., *Migrastatin and dorrigocins are shunt metabolites of iso-migrastatin*. *Journal of the American Chemical Society*, 2005. **127**(6): p. 1622–1623.
5. Haug, B.E., M. Brewer, and D.H. Rich, *Facile degradative lactonization of Gln-Arg and Gln-Phe hydroxyethylene dipeptide derivatives*. *Journal of Peptide Research*, 2005. **65**(1): p. 77–83.
6. Comstock Lindsay, R. and R. Rajska Scott, *Conversion of DNA methyltransferases into azidonucleosidyl transferases via synthetic cofactors*. *Nucleic acids research*, 2005. **33**(5): p. 1644–52.

### **2004**

1. Yang, J., L. Liu, and J.S. Thorson, *Structure-based enhancement of the first anomeric glucokinase*. *ChemBiochem*, 2004. **5**(7): p. 992–6.
2. Witte, R.P., et al., *Analysis of poly(ethylene glycol)-diacrylate macromer polymerization within a multicomponent semi-interpenetrating polymer network system*. *J Biomed Mater Res*, 2004. **71A**(3): p. 508–18.
3. Weller, R.L. and S.R. Rajska, *Aziridination of g,d-dibromoethyl-2-pentenoate with primary amines: extension of the Gabriel-Cromwell reaction*. *Tetrahedron Letters*, 2004. **45**(30): p. 5807–5810.
4. Tang, G.-L., Y.-Q. Cheng, and B. Shen, *Leinamycin biosynthesis revealing unprecedented architectural complexity for a hybrid polyketide synthase and nonribosomal peptide synthetase*. *Chemistry & Biology*, 2004. **11**(1): p. 33–45.
5. Sukonpan, C., et al., *Synthesis of substrates and inhibitors of botulinum neurotoxin type A metalloprotease*. *Journal of Peptide Research*, 2004. **63**(2): p. 181–193.

6. Shen, B. and H.-J. Kwon, *Use of type II polyketide synthases to catalyze C-O bond formation*. 2004, (Wisconsin Alumni Research Foundation, USA). Application: US US. p. 50 pp.
7. Kutz, K.K., J.J. Schmidt, and L. Li, *In situ tissue analysis of neuropeptides by MALDI FTMS in-cell accumulation*. Anal Chem, 2004. **76**(19): p. 5630–40.
8. Ju, J., et al., *Conversion of (2S)-arginine to (2S,3R)-capreomycin by VioC and VioD from the viomycin biosynthetic pathway of Streptomyces sp. strain ATCC11861*. ChemBiochem, 2004. **5**(9): p. 1281–5.
9. Hoffmeister, D. and J.S. Thorson, *Mechanistic implications of Escherichia coli galactokinase structure-based engineering*. ChemBiochem, 2004. **5**(7): p. 989–92.
10. Haug, B.E. and D.H. Rich, *Synthesis of a Gln-Phe Hydroxy-ethylene Dipeptide Isostere*. Organic Letters, 2004. **6**(25): p. 4783–4786.
11. Ding, X., et al., *Oral absorption enhancement of cromolyn sodium through noncovalent complexation*. Pharmaceutical Research, 2004. **21**(12): p. 2196–2206.
12. Comstock, L.R. and S.R. Rajski, *Efficient Synthesis of Azide-Bearing Cofactor Mimics*. Journal of Organic Chemistry, 2004. **69**(4): p. 1425–1428.
13. Brewer, M., C.A. James, and D.H. Rich, *Synthesis of a tripeptide derivative containing the gln-arg hydroxyethylene dipeptide isostere*. Organic Letters, 2004. **6**(25): p. 4779–82.
14. Bililign, T., et al., *The hedamycin locus implicates a novel aromatic PKS priming mechanism*. Chem Biol, 2004. **11**(7): p. 959–69.

## **2003**

1. Zazopoulos, E., et al., *A genomics-guided approach for discovering and expressing cryptic metabolic pathways*. Nature Biotechnology, 2003. **21**(2): p. 187–190.
2. Yang, J., et al., *Studies on the substrate specificity of Escherichia coli galactokinase*. Org Lett, 2003. **5**(13): p. 2223–6.
3. Shen, B. and W. Liu, *The Streptomyces globisporus gene cluster for biosynthesis of the enediyne antitumor antibiotic C-1027 and the generation of novel variants*. 2003, (Wisconsin Alumni Research Foundation, USA). Application: US US. p. 119 pp, Cont -in-part of U S Ser No 159,257.
4. Shen, B., Y.-q. Cheng, and G.-l. Tang, *The leinamycin biosynthetic enzymes of Streptomyces atroolivaceus using independent acyltransferase module and the gene cluster encoding them and their uses*. 2003, (Wisconsin Alumni Research Foundation, USA). Application: US. p. 247 pp, Cont -in-part of Appl No PCT/US02/08937.

5. Restituyo Jose, A., et al., *Conversion of aryl azides to O-alkyl imidates via modified Staudinger ligation*. *Organic letters*, 2003. **5**(23): p. 4357–60.
6. Rajski, S.R., L.R. Comstock, and S.G. Petersen, *Progress on the synthesis of functionally diverse aziridine-based cofactor mimetics*. American Association of Colleges of Pharmacy Annual Meeting, 2003. **104**(JUL): p. NIL\_0270.
7. Liu, W., et al., *Rapid PCR amplification of minimal enediyne polyketide synthase cassettes leads to a predictive familial classification model*. *Proceedings of the National Academy of Sciences of the United States of America*, 2003. **100**(21): p. 11959–63.
8. Li, J. and W.J. Kao, *Synthesis of polyethylene glycol (PEG) derivatives and PEGylated-peptide biopolymer conjugates*. *Biomacromolecules*, 2003. **4**(4): p. 1055–67.
9. Hyun, C.G., et al., *The biosynthesis of indolocarbazoles in a heterologous E. coli host*. *ChemBiochem*, 2003. **4**(1): p. 114–7.
10. Hoffmeister, D., et al., *Creation of the first anomeric D/L-sugar kinase by means of directed evolution*. *Proc Natl Acad Sci U S A*, 2003. **100**(23): p. 13184–9.
11. Fu, X., et al., *Antibiotic optimization via in vitro glycorandomization*. *Nat Biotechnol*, 2003. **21**(12): p. 1467–9.
12. Cheng, Y.-Q., G.-L. Tang, and B. Shen, *Type I polyketide synthase requiring a discrete acyltransferase for polyketide biosynthesis*. *Proceedings of the National Academy of Sciences of the United States of America*, 2003. **100**(6): p. 3149–54.
13. Burmania, J.A., G.J. Martinez-Diaz, and W.J. Kao, *Synthesis and physicochemical analysis of interpenetrating networks containing modified gelatin and poly(ethylene glycol) diacrylate*. *J Biomed Mater Res A*, 2003. **67**(1): p. 224–34.
14. Biggins, J.B., K.C. Onwueme, and J.S. Thorson, *Resistance to enediyne antitumor antibiotics by CalC self-sacrifice*. *Science*, 2003. **301**(5639): p. 1537–41.
15. Albermann, C., et al., *Substrate specificity of NovM: implications for novobiocin biosynthesis and glycorandomization*. *Org Lett*, 2003. **5**(6): p. 933–6.

## **2002**

1. Shen, B., Y.-Q. Cheng, and G.-L. Tang, *Leinamycin biosynthesis gene cluster of Streptomyces atroolivaceus and its use in the development of leinamycin analogs*. 2002, (The Regents of the University of California, USA; Kyowa Hakko Kogyo Co., Ltd.). Application: WO WO. p. 185 pp.
2. Rich, D.H., M.G. Bursavich, and M.A. Estiarte, *Discovery of nonpeptide, peptidomimetic peptidase inhibitors that target alternate enzyme active site conformations*. *Biopolymers*, 2002. **66**(2): p. 115–25.

3. Park, Y., et al., *Effects of conjugated linoleic acid (CLA) metabolites and cognates in heparin-releasable lipoprotein lipase activity in 3T3-L1 adipocytes*. *Faseb Journal*, 2002. **16**(4): p. A224–A224.
4. Liu, W., et al., *Biosynthesis of the enediyne antitumor antibiotic C-1027*. *Science*, 2002. **297**(5584): p. 1170–3.
5. Kwon, H.J., et al., *C-O bond formation by polyketide synthases*. *Science*, 2002. **297**(5585): p. 1327–30.
6. Kao, W.J., J. Li, and D. Lok, *Bifunctional-modified hydrogels containing polyethylene glycol derivatives*. 2002, (Wisconsin Alumni Research Foundation, USA). Application: WO WO. p. 82 pp.
7. Comstock, L.R. and S.R. Rajski, *Expedient synthesis of aziridine-based cofactor mimics*. *Tetrahedron*, 2002. **58**(30): p. 6019–6026.
8. Cheng, Y.-Q., G.-L. Tang, and B. Shen, *Identification and localization of the gene cluster encoding biosynthesis of the antitumor macrolactam leinamycin in Streptomyces atroolivaceus S-140*. *Journal of bacteriology*, 2002. **184**(24): p. 7013–24.
9. Bursavich, M.G. and D.H. Rich, *Designing Non-Peptide Peptidomimetics in the 21st Century: Inhibitors Targeting Conformational Ensembles*. *Journal of Medicinal Chemistry*, 2002. **45**(3): p. 541–558.
10. Brewer, M. and D.H. Rich, *Sequencing hydroxyethylamine-containing peptides via Edman degradation*. *Organic Letters*, 2002. **4**(20): p. 3469–72.
11. Bililign, T., et al., *On the origin of deoxypentoses: evidence to support a glucose progenitor in the biosynthesis of calicheamicin*. *Chembiochem*, 2002. **3**(11): p. 1143–6.
12. Ahlert, J., et al., *The calicheamicin gene cluster and its iterative type I enediyne PKS*. *Science*, 2002. **297**(5584): p. 1173–6.

## **2001**

1. West, C.W., M.A. Estiarte, and D.H. Rich, *New Methods for Side-Chain Protection of Cysteine*. *Organic Letters*, 2001. **3**(8): p. 1205–1208.
2. Travins, J.M., et al., *Aspartic Protease Inhibitors: Expedient Synthesis of 2-Substituted Statins*. *Organic Letters*, 2001. **3**(17): p. 2725–2728.
3. Sok, D.E. and C.J. Sih, *Difference in susceptibility of tyrosine residue to oxidative iodination between a thioredoxin box region and a hormonogenic region*. *Archives of Pharmacal Research*, 2001. **24**(5): p. 446–454.

4. Ripka, A.S., et al., *Aspartic Protease Inhibitors Designed from Computer-Generated Templates Bind As Predicted*. *Organic Letters*, 2001. **3**(15): p. 2309–2312.
5. Rich, D.H., et al., *Merging Rational Drug Design with Combinatorial Chemistry: Reasonable and Unreasonable Expectations*. *Medicinal Chemistry into the Millennium*, ed. M.M. Campbell. 2001: I.S. Blagbrough Royal Society of Chemistry. 16–24.
6. Oost, T.K., C. Sukonpan, and D.H. Rich, *Design and synthesis of substrate based inhibitors of botulinum neurotoxin type B metalloprotease*. *Peptides 2000, Proceedings of the European Peptide Symposium, 26th, Montpellier, France, Sept. 10–15, 2000*, 2001: p. 23–25.
7. Kao, W.J., D. Lok, and J. Li, *Preparation of heterodifunctional polyethyleneglycols: network formation, characterization, and cell culture analysis*. *J Biomater Sci Polym Ed*, 2001. **12**(6): p. 599–611.
8. Estiarte, M.A., A.M. Elder, and D.H. Rich, *Synthetic progress towards a TMC-95 analog as a potential proteasome inhibitor*. *Peptides: The Wave of the Future, Proceedings of the Second International and the Seventeenth American Peptide Symposium, San Diego, CA, United States, June 9–14, 2001*, 2001: p. 532–533.
9. Dales, N.A., et al., *Design and Synthesis of Unsymmetrical Peptidyl Urea Inhibitors of Aspartic Peptidases*. *Organic Letters*, 2001. **3**(15): p. 2313–2316.
10. Bursavich, M.G., C.W. West, and D.H. Rich, *From Peptides to Non-Peptide Peptidomimetics: Design and Synthesis of New Piperidine Inhibitors of Aspartic Peptidases*. *Organic Letters*, 2001. **3**(15): p. 2317–2320.
11. Bursavich, M.G. and D.H. Rich, *Solid-Phase Synthesis of Aspartic Peptidase Inhibitors: 3-Alkoxy-4-Aryl Piperidines*. *Organic Letters*, 2001. **3**(17): p. 2625–2628.
12. Bursavich, M.G. and D.H. Rich, *Solution and solid phase synthesis of non-peptide peptidomimetic aspartic peptidase inhibitors*. *Peptides: The Wave of the Future, Proceedings of the Second International and the Seventeenth American Peptide Symposium, San Diego, CA, United States, June 9–14, 2001*, 2001: p. 537–538.
13. Brewer, M. and D.H. Rich, *Synthesis of a Tripeptide Derivative Containing the Phe-Arg Hydroxyethylene Dipeptide Isostere*. *Organic Letters*, 2001. **3**(6): p. 945–948.
14. Brewer, M. and D.H. Rich, *One-pot conversion of azides to protected guanidines via the Staudinger reduction; synthesis and utilization of the Phe-Arg hydroxyethylene dipeptide isostere*. *Peptides: The Wave of the Future, Proceedings of the Second International and the Seventeenth American Peptide Symposium, San Diego, CA, United States, June 9–14, 2001*, 2001: p. 40–41.