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EDUCATION

NIH Postdoctoral Associate, July 2001 to November 2001, Yale University
Advisor: Professor Scott A. Strobel

Jane Coffin Childs Postdoctoral Fellow, July 1998 to June 2001, Yale University,
Advisor: Professor Scott A. Strobel

Ph.D. Organic Chemistry, June 1998, Brown University.
Thesis Advisor: Professor John S. Oliver
Thesis Title: Abiotic Models for Ribosomal Polypeptide Biosynthesis.

B.Sc. Chemistry (Industrial Option), 1st Class Honors, 1992, University of Ibadan, Nigeria.

PROFESSIONAL EXPERIENCE

- Aug. 2005 – present:** Assistant Professor, Chemistry and Biochemistry
Georgia Institute of Technology, Atlanta
- Jan. 2004 – Aug. 2005:** Senior Research Scientist, Rib-X Pharmaceuticals, Inc.
- Nov. 2001 – Jan. 2004:** Research Scientist II, Rib-X Pharmaceuticals, Inc.
- July 1998 – Nov. 2001:** Postdoctoral Associate and Jane Coffin Childs Postdoctoral
Fellow, Dept. of Molecular Biophysics and Biochemistry,
Yale University, New Haven, Connecticut.
- Aug. 1993 -June 1998:** Teaching Assistant & Pre doctoral Fellow, Dept. of
Chemistry, Brown University, Providence, Rhode Island.
- Nov. 1992 - Aug. 1993:** Graduate Assistant, University of Uyo (Nigeria), through The
National Youth Service Corps.

PUBLICATIONS

1. **Oyelere, A. K.**; Chen, P. C.; Huang, X.; El-Sayed, I. H.; El-Sayed, M. A. Peptide-Conjugated Gold Nanorods for Nuclear Targeting. *Bioconj. Chem.* **2007**, 18, 1490-1497 (*one of the most-accessed articles published in Bioconjugate Chemistry in the 3rd quarter of 2007, Source: http://pubs.acs.org/journals/bcches/promo/most/most_accessed/index.html*).
2. Chen, P. C.; Emrich, R. E.; Patel, P. A.; **Oyelere, A. K.** Direct Diazo-Transfer Reaction on β -lactam: Synthesis and Preliminary Biological Activities of 6-Triazolypenicillanic Acids. *Bioorg. Med. Chem.* **2007**, 15, 7288-7300.

3. Canzoneri, J. C.; **Oyelere, A. K.** Interaction of Anthracyclines with Iron Responsive Element mRNAs. Under Review.
4. **Oyelere, A. K.**; Chen, P. C.; Yao, L. P.; Boguslavsky, N. Heterogeneous Diazo-transfer Reaction: A Facile Unmasking of Azide Groups on Amine Functionalized Insoluble Supports for Solid Phase Synthesis. *J. Org. Chem.* **2006**, *71*, 9791-9796.
5. Cho, H.D.; **Oyelere, A.K.**; Strobel, S.A; Weiner, A. M., Use of nucleotide analogs by the CCA-adding enzyme (tRNA nucleotidyltransferase): deciphering the basis for nucleotide selection *RNA* **2003**, *9*, 970-981.
6. Strobel, S.A; Jones, F.D.; **Oyelere, A.K.**; Ryder, S.P., Biochemical detection of adenosine and cytidine ionisation within RNA by interference analysis. *Nucleic Acids Res. Suppl.* **2003**, *3*, 229-230.
7. Basu, S.; **Oyelere, A.K.**, (2003), "The Role of Recombinant DNA Technology in Medicinal Chemistry and Drug Discovery", Burger's Medicinal Chemistry, Vol 2, Chapter 4, 82-113, D. Abraham (Ed.), John-Wiley.
8. **Oyelere, A. K.**; Kardon, J. R.; Strobel, S. A., pK_a Perturbation in Genomic Hepatitis Delta Virus Ribozyme Catalysis Evidenced by Nucleotide Analogue Interference Mapping *Biochemistry* **2002**, *41*, 3667-3675.
9. Ryder, S.P.; **Oyelere, A.K.**; Padilla, J.; Klostermeier, D.; Millar, D.P.; Strobel, S.A., A catalytically significant adenosine ionization within the hairpin ribozyme active site, *RNA* **2001**, *7*, 1454-1463.
10. **Oyelere, A.K.**; Strobel, S.A., Site Specific incorporation of 6-azauridine into the genomic HDV ribozyme active site, *Nucleosides & Nucleotides* **2001**, *20*, 1851-1858.
11. **Oyelere, A.K.**; Strobel, S.A., Biochemical detection of cytidine protonation within RNA. *J. Amer. Chem. Soc.* **2000**, *42*, 10259-10267.
12. Szewczak, A.A.; Ortoleva-Donnelly, L.; Zivarts, M.V.; **Oyelere, A.K.**; Katzantsev, A.V.; Strobel, S.A., An important Base Triple Anchors the Substrate Helix Recognition Surface within the Tetrahymena Ribozyme Active Site, *Proc. Natl. Acad. Sci. USA* **1999**, *96*, 11183-11188.
13. Oliver, J.S.; **Oyelere, A.K.**, Efficient Preparation of Dinucleoside Phosphates with N-FMOC Amino Acid Fluorides, *Tetrahedron Lett.* **1997**, *38*, 4005-4008.
14. Oliver, J.S.; **Oyelere, A.**, Aminoacylation of Nucleosides with FMOC Amino Acid Fluorides, *J. Org. Chem.* **1996**, *61*, 4168-4171.

Publications (Patent Applications): Over 24 applications on small molecule-RNA interaction (key examples are given below)

15. **Oyelere, A.K.**, Farmer, J.J., Bifunctional Macrolide Heterocyclic compounds and methods of making and using same. EP. **2006/1682563 A1**
16. **Oyelere, A.K.**, Goldberg, J.A., Orbin, A., Salvino, J.M., Zhou, J. Biaryl heterocyclic amines, amides and sulfur-containing compounds and methods of making and using the same. EP. **2006/1664001 A2**
17. Lou, R., Zhou, J., Bhattacharjee, A., Chen, S., Chen, Y., Farmer, J., Goldberg, J. A., Hanselmann, R., Orbin, A., **Oyelere, A. K.**, *et al* Biaryl heterocyclic compounds and methods of making and using the same. US **2005/6969726B2 (Issued Patent)**
18. Wang, D., Sutcliffe, J.A., **Oyelere, A.K.**, McConnell, T.S, Ippolito, J.A., Abelson, J.N., Springer, D.M. *et al* Bifunctional Heterocyclic compounds and methods of making and using same. US **2005/0197334 A1**
19. **Oyelere, A.K.**, Goldberg, J.A., Orbin, A., Salvino, J.M., Zhou, J. Biaryl heterocyclic amines, amides and sulfur-containing compounds and methods of making and using the

same. PCT WO 2005/012270 A2. (**One of the most requested chemistry and related science patent families by researchers using CAS electronic products in 3Q-2005, Source: <http://www.cas.org/spotlight/rlist3q05p/rlist3q05p.html>**)

20. Farmer, J.J., Goldberg, J.A., **Oyelere, A.K.**, Salvino, J.M., Springer, D.M., Tran, J., Bifunctional Macrolide Heterocyclic compounds and methods of making and using same. PCT WO. 2005/049632 A1
21. Chen S., Zhou, J., Wu, Y., Wang, D., Salvino, J.M., **Oyelere, A.K.**, Lou, R., Halogenated biaryl heterocyclic compounds and methods of making and using the same. PCT WO. 2005/061468 A1
22. Chen S., Zhou, J., Wu, Y., Wang, D., Salvino, J.M., **Oyelere, A.K.**, Lou, R., Bhattacharjee, A., Chen, Y., Halogenated biaryl heterocyclic compounds and methods of making and using the same. US. 2005/0153971 A1
23. Steitz, T.A., Moore, P.B., Sutcliffe, J.A., **Oyelere, A.K.**, Ippolito, J.A. Ribosome structure and protein synthesis inhibitors. U.S. 2005/0036997 A1.
24. Abelson, J.N., Lou, R., **Oyelere, A.K.**, Salvino, J.M. *et al* Bifunctional Heterocyclic compounds and methods of making and using same. CA 2004/2500158 A1
25. Steitz, T.A., Moore, P.B., Ban, N., Nissen, P., Hansen, J., Sutcliffe, J.A., **Oyelere, A.K.**, Ippolito, J.A. Structure of ribosome and inhibitor of protein synthesis. JP 2003/304882 A2.
26. Steitz, T.A., Moore, P.B., Ban, N., Nissen, P., Hansen, J., Sutcliffe, J.A., **Oyelere, A.K.**, Ippolito, J.A. Ribosome structure and protein synthesis inhibitors. EP 1308457 A1

Meetings, Symposia and Seminars (*presenting author is underlined*)

1. **Oyelere, A.** RNA Small Molecule Interaction: Recognition of Anthracyclines by IRE RNAs, presented at the 59th Southeast Regional Meeting of the ACS, Greenville, South Carolina, October 24-27, 2007. **Contributed Oral Presentation**
2. **Oyelere, A.K.**; Interaction of Anthracycline with Iron Responsive Elements (IREs) RNA Hairpins, Chemistry Department, Tennessee State University, October 18, 2007. **Invited Seminar**
3. **Guerrant, W. R.**; Chen, P. C.; Patel, V.; Green, P.; **Oyelere, A. K.** Synthesis and Structure-Activity Relationship of Histone Deacetylase (HDAC) Inhibitors with Triazole-linked Cap Groups, presented at the Georgia Life Sciences Summit, October 3, 2007, Atlanta, Georgia. **Poster Contribution**
4. **Canzoneri, J. C.**; **Oyelere, A. K.** Interaction of Anthracyclines with Iron Responsive Element mRNAs, presented at the Georgia Life Sciences Summit, October 3, 2007, Atlanta, Georgia. **Poster Contribution**
5. **Chen, P. C.**; Emrich, R. E.; Patel, P. A.; **Oyelere, A. K.** Synthesis and Preliminary Biological Activities of 6-Triazolylpenicillanic Acid: A New Class of β -lactam Antibiotics, presented at the Cambridge HealthTech Institute's Inaugural Conference on "The challenge of antibacterial drug development – Integrating Chemistry and Biology, March 21-22, 2007, San Diego, California. **Poster Contribution**
6. **Oyelere, A.K.**; Topoisomerase and Histone Deacetylase Inhibition in Cancer Therapy, Chemistry Department, Tuskegee University, March 21, 2007. **Invited Seminar**
7. Chen, P. C.; **Patel, P. A.**; **Oyelere, A. K.** Synthesis of 5-(4-pentnyl)-2'-deoxyuridine. Regional ACS Meeting, Morehouse College, Atlanta, Sept. 2006. **Poster Contribution**

8. **Oyelere, A.K.**; Ribozymes: Catalysts against all odds, Morehouse College, Chemistry Department, November 11, 2005. **Keynote lecture, Research Presentation Day**
9. **Oyelere, A.K.** A Chemical Perspective of RNA Catalysis, presented at the 61st Southwest and the 56th Southeast Joint Regional Meeting of the ACS, Memphis Tennessee, November 1 – 4, 2005. **Contributed Oral Presentation**
10. **Oyelere, A.**, Bhattacharjee, A., Wang, D., Lou, R., Tran, J., Wu, Y., Goldberg, J., Springer, D., Salvino, J., Zhou, J. Structure-Based Design and Synthesis of Novel Amino Acid Amide-Oxazolidinones. Poster F-1253, Presented at the 45th Interscience Conference on Antimicrobial Agents & Chemotherapy (ICAAC) Washington DC, USA .December 16-19, 2005. **Poster Contribution**
11. **Chen, S.**, Wu, Y., Lou, R., **Oyelere, A.**, Bhattacharjee, A., Wang, D., Zhou, J. Design at the Atomic Level: Synthesis of Biaryloxazolidinones as Potent, Orally Active Antibiotics. Poster F-1252, Presented at the 45th Interscience Conference on Antimicrobial Agents & Chemotherapy (ICAAC) Washington DC, USA .December 16-19, 2005. **Poster Contribution**
12. **Oyelere, A.K.**; A Chemical Approach to Probe Ribozyme Catalytic Mechanism, Center for Pharmacogenetic, University of Pittsburgh, July 9, 2001. **Invited Seminar**
13. **Ryder, S.P.**, **Oyelere, A.K.**, Strobel, S.A., An Adenosine in the Hairpin Ribozyme Active Site with a Functionally Relevant pK_a perturbation, presented at the RNA Society Meeting, Banff, Alberta, Canada, May 29th - June 3rd, 2001. **Poster Contribution**
14. **Oyelere, A.K.**; Nucleotide Analogs as Functional Probes in Understanding the Chemical Basis of RNA Catalysis, Merck Frosst, Montreal Canada, Jan. 16, 2001. **Invited Seminar**
15. **Strobel, S. A.**, **Oyelere, A. K.**, Basu, S., Szewczak. A. A. and Cocco, M., Protons and potassium?: involvement of base protonation and monovalent metal ions in RNA folding and Catalysis, NERM 2000, University of Connecticut. Storrs, CT. June 18-21, 2000. Connecticut Valley Section, American Chemical Society. **Invited Oral Presentation**
16. **Oyelere, A.K.**, Strobel, S.A., Detection of Cytidine Protonation in RNAs, presented at the RNA Society Meeting, Madison Wisconsin, May 30-4 June, 2000. **Poster Contribution**
17. **Oyelere, A.K.**, Strobel, S.A., Importance of pK_a Perturbation in RNA Catalysis, presented at the Jane Coffin Childs Symposium, Lakeville Connecticut, Oct. 1999. **Poster Contribution**
18. **Oyelere, A.K.**, Basu, S.; Strobel, S.A., Synthesis of 5'-O-(1-thio) pyrimidine Nucleoside Triphosphates for Nucleoside Analog Interference Mapping (NAIM), presented at the RNA Society Meeting, Edinburgh Scotland, 23-27 June 1999. **Poster Contribution**
19. **Oyelere, A.K.**, Oliver, J.S.; Efficient Synthesis of Aminoacylated Nucleosides and Dinucleoside Phosphates with N-FMOC Amino Acid Fluorides, presented at the American Chemical Society meeting, Rhode Island section, Jan. 1998. **Poster Contribution**

PAST RESEARCH SUPPORTS

1. R43 AI056774-01 (SBIR Phase I), 7/01/03-12/31/03 Novel antibacterial targeting the 50S ribosomal subunit. The overall goal of this work is to identify new chemical entities for the treatment of antibiotic-resistant bacterial infections. **Role: Co-investigator**
2. Jane Coffin Childs Postdoctoral Fellowship for Biomedical Research, 07/01/98 - 06/30/00 Nucleotide Analog Interference Mapping: Defining Structural Recognition Features of tRNA and AA-tRNA by AA-tRNA Synthetase and Elongation Factor. **Role: Principal Investigator**

Honors, Awards, and Recognitions:

1. 2007 Blanchard Assistant Professorship (Georgia Institute of Technology).
2. 1998 Jane Coffin Childs Postdoctoral Fellowship for Medical Research.
3. 1998 Sigma Xi Award for Outstanding Graduate Student with Potential for further Contribution to Science, Brown University.
4. 1998 Admitted as a Graduate Member of The Royal Society of Chemistry.
5. 1997 Richardson Fellowship for Outstanding Graduate Student, Brown University.
6. 1995 Elected to Sigma Xi, The Scientific **Research** Society.
7. 1993 Faculty Prize for the Best Final Year Student in the Faculty of Science, University of Ibadan (Nigeria).
8. 1993 The Lever Brothers (Nigeria) Prize for the Best Honors Degree Student in Chemistry.
9. 1993 The Nigerian Breweries Prize in Chemistry and Biochemistry for the Best Graduating Student in Biochemistry and Chemistry

Membership in Professional and Honor Societies:

1. American Association for the Advancement of Science
2. Member (GRSC), The Royal Society of Chemistry (1998-2000).
3. Member, Sigma Xi, The Scientific Research Society
4. Member, American Chemical Society.