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Research Interests:

RNA Imaging Probes, Live-cell Imaging, RNA-Protein Interactions, Virus-Host Interactions, Super-resolution Imaging, Molecular and Nanomedicine.

Education

2004-2008,	Ph.D.; University of Pennsylvania	(in Bioengineering)
2000-2002,	M.S.; University of California, San Diego	(in Bioengineering)
1996-2000,	B.S.; University of California, San Diego	(in Bioengineering)

Major Professional Experiences

2013-Present, Assistant Professor, Department of Biomedical Engineering, College of Engineering, Peking University
2010-2013, Postdoctoral Researcher; National Institutes of Health; Jennifer Lippincott-Schwartz's lab
2010-2012, Postdoctoral Researcher; National Institute of Standards and Technology; Anne L. Plant's lab
2009/2010, Postdoctoral Researcher; University of Pennsylvania; Andrew Tsourkas' lab

Selected Honors

1000 Young Talent Program, China (2012)
The US. National Research Council (NRC) Research Associate Fellowship (2010-2012)
Solomon R. Pollack Award for Excellence in Graduate Bioengineering Research (Best Ph.D. Thesis) (2009)

Major Publications

1. **Chen, A.K.**, Sengupta, P., Waki, K., Van Engelenburg, S., Ochiya, T., Ablan, S.D., Freed, E.O. and Lippincott-Schwartz, J. MicroRNA binding to the HIV-1 Gag protein inhibits Gag assembly and virus production. *Proc. Natl. Acad. Sci. U S A.*, 2014; 111(26):E2676-83.
2. Chung, K.H., **Chen, A.K.**, Anderton, C.R., Bhadriraju, K., Plant, A.L., Bush, B.G., Cook, R.F. and Frank F. Frictional properties of native and functionalized type I collagen thin films. *Appl. Phys. Lett.* 103 (14), 143703-143703-5.
3. **Chen, A.K.*** Delrio, F., Peterson, A.W., Chung, K.H., Bhadriraju, K, and Plant, A.L. Cell spreading and proliferation in response to the composition and mechanics of engineered fibrillar extracellular matrices. *Corresponding Author. *Biotechnol Bioeng.* 2013; 110: 2731-2741.
4. **Chen, A.K.*** and Tsourkas A. Developing Molecular-Beacon Constructs for Improved Live-Cell Analysis and Imaging of RNA. *Corresponding Author. *Am. Biotech. Lab.* 2010; 28 (7): 10-13. (Review).
5. **Chen, A.K.**, Davydenko, O., Behlke, M., and Tsourkas A.* Ratiometric Bi-Molecular Beacons: Ratiometric Bimolecular Beacons for the Sensitive Detection of RNA in Single Living Cells. *Nucleic Acids Res.* 2010; 38 (14): e148.
6. Cheng, Z., **Chen, A.K.**, Lee H-Y., and Tsourkas, A.* Examination of Folate-Targeted Liposomes with Encapsulated Poly(2-

Propylacrylic acid) as a pH-responsive Nanoplatform for Cytosolic Drug Delivery. *Small*. 2010; 6 (13): 1398-401.

7. **Chen, A.K.**, Behlke, M., and Tsourkas, A.* Subcellular Trafficking and Functionality of 2'-O-methyl and 2'-O-methylphosphorothioate Molecular Beacons. *Nucleic Acids Res*. 2009; 37 (22): e149.

8. **Chen, A.K.** and Tsourkas, A.* Imaging RNA in Living Cells with Molecular Beacons: Current Perspectives and Challenges. *J. Innov. Opt. Health Sc*. 2009; 2 (4): 315-324. (Review)

9. **Chen, A.K.**, Cheng, Z., Behlke, M., and Tsourkas, A.* "Assessing the Sensitivity of Commercially Available Fluorophores to the Intracellular Environment". *Anal Chem*. 2008; 80 (19): 7437-44.

10. **Chen, A.K.**, Behlke, M., and Tsourkas, A.* "Efficient Cytosolic Delivery of Molecular Beacon Conjugates and Flow Cytometric Analysis of Target RNA". *Nucleic Acids Res*. 2008; 36 (12): e69.

11. Elias, D.R., Thorek, D.L., **Chen, A.K.**, Czupryna, J., and Tsourkas, A.* "In vivo Imaging of Cancer Biomarkers Using Activatable Molecular Probes". *Cancer Biomarkers*. 2008; 4 (6): 287-305. (Review).

12. **Chen, A.K.**, Behlke, M., and Tsourkas, A.* "Avoiding False-Positive Signals with Nuclease-Vulnerable Molecular Beacons in Single Living Cells". *Nucleic Acids Res*. 2007; 35 (16): e105.

13. **Chen, A.K.**, Latz, M.I., Sobolewski, P., and Frangos, J.A.* "Evidence for the Role of G-Proteins in Flow Stimulation of Dinoflagellate Bioluminescence." *Am J Physiol Regul Integr Comp Physiol*. 2007; 292(5): R2020-7.

14. Thorek, D.L.J., **Chen, A.K.**, Czupryna, J., and Tsourkas, A.* "Superparamagnetic Iron Oxide Nanoparticle Probes for Molecular Imaging." *Ann Biomed Eng*. 2006; Jan;34(1):23-38 (Review).

15. **Chen, A.K.**, Latz, M.I., and Frangos, J.A.* The Use of Dinoflagellate Bioluminescence to Characterize Cell Stimulation in Bioreactors." *Biotechnol Bioeng*. 2003; 83(1): 93-103.

Book Chapters

1. **Chen, A.K.**, Rhee, W.J., Bao G. and Tsourkas A.* (2011) Delivery of Molecular Beacons for Live-cell Imaging and Analysis of RNA, RNA Detection and Visualization, Jeffrey E. Gerst, Humana Press, pp 159-174.

2. Crayton, S.H., **Chen, A.K.**, Cheng, Z., **Tsourkas, A.*** (2010) Molecular Imaging In *Comprehensive Biomaterials*, edited by Ducheyne, P., Healy, K., Hutmacher, D., Kirkpatrick, J., Elsevier Inc.

3. Thorek, D.L.J., Czupryna, J., **Chen, A.K.**, Tsourkas, A.* (2006) Molecular Imaging of Cancer with Superparamagnetic Iron Oxide Nanoparticles. In *Cancer Imaging*, edited by M.A. Hayat. Elsevier Science/Academic Press.

Patent Applications

1. Andrew Tsourkas and **Antony Chen**. Quantitative Molecular Probes, 2007. US Application Number: 12/282.612; International Application Number: PCT/US07/064099.

2. Andrew Tsourkas and **Antony Chen**. Novel Molecular Beacons. 2009. US Application Number: 61/244,378; International Application Number: PCT/US10/49301.