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The University of Mississippi

**SCHOOL OF PHARMACY
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TO: All School of Pharmacy and USDA Personnel
FROM: Charles D. Hufford, Associate Dean for Research and Graduate Programs
DATE: May 14, 2009
SUBJECT: Research News (#1)

The following **GRANTS/CONTRACTS** have recently been awarded:

1. **Dr. Mahmoud ElSohly** (P.I.-NCNPR) and **Dr. Ikhlas Khan** (Co-P.I.-NCNPR). Production, Analysis and Distribution of Cannabis, Marijuana Cigarettes and Related Materials (Mod. No. 10) (National Institute on Drug Abuse), \$257,963, March 16, 2005-March 15, 2010.
2. **Dr. Mahmoud ElSohly** (P.I.-NCNPR) and **Dr. Ikhlas Khan** (Co-P.I.-NCNPR). Production, Analysis and Distribution of Cannabis, Marijuana Cigarettes and Related Materials (Mod. No. 11) (National Institute on Drug Abuse), \$163,614, March 16, 2005-March 15, 2010.
3. **Dr. Mark Hamann** (P.I.-Pharmacognosy). Determining the Phytochemistry of Sweet Extracts from Plant X2 (Kraft Foods, Inc.), \$100,000, January 1, 2009-December 31, 2009.
4. **Dr. Erin Holmes** (P.I.-Pharmacy Administration/RIPS/CPMM) and **Dr. Benjamin Banahan** (Co-P.I.-Pharmacy Administration/RIPS/CPMM). RxSync Service© Implementation and Evaluation Project (Cardinal Health), \$125,000, January 5, 2009-December 31, 2010.
5. **Dr. Melissa Jacob** (P.I.-NCNPR) and **Dr. Khalid Ashfaq** (Co-P.I.-NCNPR). Development of New Agents Against Cryptococcal Infections (Florida Agricultural and Mechanical University/National Institutes of Health) \$12,500, June 1, 2008-May 31, 2009.
6. **Dr. Seongbong Jo** (P.I.-Pharmaceutics). *In Vitro* Drug Release from Aliphatically Modified Biodegradable Block Copolymer-Based Thermogel”, \$39,000, May 15, 2009-November 15, 2009.
7. **Dr. Ikhlas Khan** (P.I.-NCNPR) and **Dr. Troy Smillie** (Co-P.I.-NCNPR). Isolation and Identification of Marker Compound from *Labisia pumila* (Holista Biotech), \$60,000, July 1, 2008-June 30, 2009.
8. **Dr. Christopher McCurdy** (P.I.-Medicinal Chemistry). Novel Pharmacologic Interventions for Drugs of Abuse (Year 3) (National Institutes of Health), \$349,075, April 1, 2009-March 31, 2010.

9. **Dr. John Rimoldi** (P.I.-Medicinal Chemistry). Synthesis of Carbon Monoxide Donors and Heme Oxygenase Inhibitors (University of Mississippi Medical Center/National Institutes of Health/National Heart, Lung and Blood Institute), \$28,800, September 1, 2008-July 31, 2009.
10. **Dr. Leigh Ann Ross** (P.I.-Pharmacy Practice). Mississippi State Hospital and UM School of Pharmacy Agreement - 2009/2010 (Mississippi State Hospital), \$24,000, May 1, 2009-April 30, 2010.
11. **Dr. Troy Smillie** (P.I.-NCNPR). Analysis of Plant Samples or Dietary Supplements for the Presence of *Hoodia gordonii* (Federal Trade Commission), \$4,000, January 8, 2009-September 30, 2009.
12. **Dr. Larry Walker** (P.I.-NCNPR), **Dr. Dhammika Nanayakkara** (Co-P.I.-NCNPR), and **Dr. Babu Tekwani** (Co-P.I.-NCNPR). Development of Safer Drugs for Malaria and Leishmaniasis (Years 2-3) (U.S. Army Medical Research and Materiel Command), \$2,884,909, April 1, 2009-May 1, 2011.
13. **Dr. Larry Walker** (P.I.-NCNPR), **Dr. Babu Tekwani** (Co-P.I.-NCNPR), and **Dr. Dhammika Nanayakkara** (Co-P.I.-NCNPR). Primaquine Revisited Part IV – Safety and Efficacy of Primaquine Isomers (Bill and Melinda Gates Foundation), \$100,000, May 1, 2009-April 30, 2010.
14. **Dr. Barbara Wells** (P.I.- Pharmacy Dean's Office). Walgreens Diversity Scholarship (Walgreens), \$10,000, September 1, 2008-August 31, 2011.
15. **Dr. Kristie Willett** (P.I.-Pharmacology). Distribution, Bioaccumulation and Toxicity of Nanosilver Particles in Medaka (*Oryzias latipes*)-Year 1 (U.S. Army Engineering Research and Development Center), \$139,114, February 27, 2009-February 27, 2010.

The following **PUBLICATIONS** have appeared:

1. T.G. Barros, **John Williamson**, O.A.C. Antunes, and E.M.F. Muri, "Hydroxamic Acids Designed as Inhibitors of Urease", *Letters in Drug Design & Discovery*, 6, 186-192 (2009).
2. T.G. Barros, S. Pinheiro, **John Williamson**, A. Tanuri, H.S. Pereira, R.M. Brindeiro, J.B.A. Neto, O.A.C. Antunes, and E.M.F. Muri, "Novel Peptide Mimetic Inhibitors of Hepatitis C Serine Protease Derived from Isomannide", *Synthesis*, 4, 620-626 (2009).
3. T.G. Barros, S. Pinheiro, **John Williamson**, A. Tanuri, M. Gomes, H.S. Pereira, R.M. Brindeiro, J.B.A. Neto, O.A.C. Antunes, and E.M.F. Muri, "Pseudo-peptides derived from isomannide: inhibitors of serine proteases", *Amino Acids* (2009).
4. **Ronald Borne**, M.S. Levi, M.O.F. Khan, and N.H. Wilson, "Solution-Phase Parallel Synthesis of *N*-Arylisoquinuclidines", *Letters in Drug Design & Discovery*, 6, 78-81 (2009).
5. E.G. Boyce, J.S. Burkiewicz, M.R. Haase, E.J. MacLaughlin, A.R. Segal, P. Eunice, E.P. Chung, L.N. Chan, R.M. Rospond, J.A. Barone, S.W. Durst, and **Barbara Wells**, "Essential Components of a Faculty Development Program for Pharmacy Practice Faculty (2006 Educational Affairs Committee B of the American College of Clinical Pharmacy), *Pharmacotherapy*, 28, 245e-268e (2009); *Pharmacotherapy*, 29, 127 (2009).
6. **Eman Habib**, F. Leon, J.D. Bauer, R.A. Hill, **Paula Carvalho**, Horace Cutler, and **Stephen Cutler**, "Mycophenolic Derivatives from *Eupenicillium parvum*", *Journal of Natural Products*, 71, 1915-1918 (2008).
7. V.T. Karamyan, and **Robert Speth**, "Distribution of the Non-AT1, Non-AT2 Angiotensin-Binding Site in the Rat Brain: Preliminary Characterization", *Neuroendocrinology*, 88, 256-265 (2008).
8. S. Kelsen, B.J. Patel, L.B. Parker, T. Vera, **John Rimoldi**, **Rama Gadepalli**, H.A. Drummond, and D.E. Stec, "Heme oxygenase attenuates angiotensin II-mediated superoxide

- production in cultured mouse thick ascending loop of Henle cells”, *Am. J. Physiol. Renal Physiol.*, 295, 1158-1165 (2008).
9. **Jin-Ki Kim**, J. Anderson, H.W. Jun, **Michael Repka**, and **Seongbong Jo**, “Self-assembling peptide amphiphile-based nanofiber gel for bioresponsive cisplatin delivery”, *Molecular Pharmaceutics* (2009).
 10. R. Lavado, **John Rimoldi**, and D. Schlenk, “Mechanisms of fenthion activation in rainbow trout (*Oncorhynchus mykiss*) acclimated to hypersaline environments”, *Toxicology and Applied Pharmacology*, 235, 143-152 (2009).
 11. Y. Liu, C.K. Veena, **Brian Morgan**, K.A. Mohammed, M.B. Jekabsons, **Dale Nagle**, and **Yu-Dong Zhou**, “Methylalpinumisoflavone Inhibits Hypoxia-inducible Factor-1 (HIF-1) Activation by Simultaneously Targeting Multiple Pathways”, *The Journal of Biological Chemistry*, 284, 5859-5868 (2009).
 12. Y. Liu, R. Liu, S.C. Mao, **Brian Morgan**, M.B. Jekabsons, **Yu-Dong Zhou**, and **Dale Nagle**, “Molecular-Targeted Antitumor Agents. 19. Furospingolide from a Marine *Lendenfeldia* sp. Sponge Inhibits Hypoxia-Inducible Factor-1 Activation in Breast Tumor Cells”, *Journal of Natural Products*, 71, 1854-1860 (2008).
 13. **Guoyi Ma**, **Nurhayat Tabanca**, K.H.C. Baser, N. Kirimer, **David Pasco**, **Ikhlas Khan**, and **Shabana Khan**, “Inhibition of NF- κ B-mediated transcription and induction of apoptosis in human breast cancer cells by epoxypseudoisoeugenol-2-methyl butyrate”, *Cancer Chemother Pharmacol*, 63, 673-680 (2009).
 14. **Soumyajit Majumdar**, and **Ramesh Srirangam**, “Solubility, Stability, Physicochemical Characteristics and *In Vitro* Ocular Tissue Permeability of Hesperidin: A Natural Bioflavonoid”, *Pharmaceutical Research* (2008).
 15. **Soumyajit Majumdar**, T. Hingorani, **Ramesh Srirangam**, **Rama Gadepallai**, **John Rimoldi**, and **Michael Repka**, “Transcorneal Permeation of L- and D-Aspartate Ester Prodrugs of Acyclovir: Delineation of Passive Diffusion *Versus* Transporter Involvement”, *Pharmaceutical Research*, 26, 1261-1269 (2009).
 16. **S. Narasimha Murthy**, and **Siva Ram K. Vaka**, “Irontophoresis™: Transdermal Delivery of Iron by Iontophoresis”, *Journal of Pharmaceutical Sciences* (2008).
 17. **S. Srinivasa Murthy**, **V. Siva Ram Kiran**, S.K. Mathur, and **S. Narasimha Murthy**, “Noninvasive Transcutaneous Sampling of Glucose by Electroporation”, *Journal of Diabetes Science and Technology*, 2, 250-254 (2008).
 18. **S. Narasimha Murthy**, **Srinivasa Sammeta**, and **Siva Ram K. Vaka**, “OcuDrain-E™—A Noninvasive technique for reduction of intraocular pressure”, *International Journal of Pharmaceutics*, 369, 92-95 (2009).
 19. **S. Narasimha Murthy**, **Siva Ram K. Vaka**, **Srinivasa Sammeta**, and **Anroop Nair**, “TransScreen-N™: Method for Rapid Screening of Trans-Ungual Drug Delivery Enhancers”, *Journal of Pharmaceutical Sciences* (2009).
 20. **Anroop Nair**, **Srinivasa Sammeta**, **Siva Ram K. Vaka**, and **S. Narasimha Murthy**, “A study on the effect of inorganic salts in transungual drug delivery of terbinafine”, *Journal of Pharmacy and Pharmacology*, 61, 431-437 (2009).
 21. **Anroop Nair**, **Siva Ram K. Vaka**, **Srinivasa Sammeta**, H.D. Kim, P.M. Friden, B. Chakraborty, and **S. Narasimha Murthy**, “Trans-Ungual Iontophoretic Delivery of Terbinafine”, *Journal of Pharmaceutical Sciences* (2008).
 22. **Anroop Nair**, H.D. Kim, B. Chakraborty, J. Singh, M. Zaman, A. Gupta, P.M. Friden, and **S. Narasimha Murthy**, “Ungual and Trans-Ungual Iontophoretic Delivery of Terbinafine for the Treatment of Onychomycosis”, *Journal of Pharmaceutical Sciences* (2009).

23. **Michael Repka, Soumyajit Majumdar, Sunil Kumar Battu, Ramesh Srirangam, and Sampada Upadhye**, “Applications of hot-melt extrusion for drug delivery”, *Expert Opin. Drug Deliv.*, 5, 1357-1376 (2008).
24. **Srinivasa Sammeta, Siva Ram K. Vaka, and S. Narasimha Murthy**, “Dermal Drug Levels of Antibiotic (Cephalexin) Determined by Electroporation and Transcutaneous Sampling (ETS) Technique”, *Journal of Pharmaceutical Sciences* (2009).
25. **Srinivasa Sammeta, Siva Ram K. Vaka, and S. Narasimha Murthy**, “Transcutaneous sampling of ciprofloxacin and 8-methoxypsoralen by electroporation (ETS technique)”, *International Journal of Pharmaceutics*, 369, 24-29 (2009).
26. **Srinivasa Sammeta, Siva Ram K. Vaka, and S. Narasimha Murthy**, “Transdermal drug delivery enhanced by low voltage electropulsation (LVE)”, *Pharmaceutical Development and Technology* (2008).
27. **Volodymyr Samoylenko, D.C. Dunbar, M.A. Gafur, Shabana Khan, Samir Ross, J.S. Mossa, F.S. El-Feraly, Babu Tekwani, J. Bosselaers, and Ilias Muhammad**, “Antiparasitic, Nematicidal and Antifouling Constituents from *Juniperus* Berries”, *Phytother. Res.*, 22, 1570-1576 (2008).
28. **Volodymyr Samoylenko, Shabana Khan, Melissa Jacob, Babu Tekwani, Larry Walker, Charles Hufford, and Ilias Muhammad**, “Bioactive (+)-Manzamine A and (+)-8-Hydroxymanzamine A Tertiary Bases and Salts from *Acanathostrongylophora ingens* and their Preparations”, *Natural Product Communications*, 4 (2009).
29. **Volodymyr Samoylenko, Mohammad Ashfaq, Melissa Jacob, Babu Tekwani, Shabana Khan, Susan Manly, Vaishali Joshi, Larry Walker, and Ilias Muhammad**, “Indolizidine, Antiinfective and Antiparasitic Compounds from *Prosopis glandulosa* var. *glandulosa*”, *Journal of Natural Products*, 72, 92-98 (2009).
30. **K.J. Sufka, J.E. Warnick, C.N. Pulaski, Stephen Slauson, Y.B. Kim and John Rimoldi**, “Antidepressant efficacy screening of novel targets in the chick anxiety-depression model”, *Behavioural Pharmacology*, 20, 146-154 (2009).
31. **Nurhayat Tabanca, David Wedge, Xiaoning Wang, B. Demirci, K.H.C. Baser, L. Zhou, and Stephen Cutler**, “Chemical Composition and Antifungal Activity of *Angelica sinensis* Essential Oil Against Three *Colletotrichum* species”, *Natural Products Communications*, 3, 1073-1078 (2008).
32. **S. Thumma, and Michael Repka**, “Compatibility studies of promethazine hydrochloride with tablet excipients by means of thermal and non-thermal methods”, *Pharmazie*, 64 (2009).
33. **S. Thumma, Soumyajit Majumdar, Mahmoud ElSohly, Waseem Gul, and Michael Repka**, “Preformulation Studies of a Prodrug of Δ^9 -Tetrahydrocannabinol”, *AAPS PharmSciTech*, 9, 982-990 (2008).
34. **Siva Ram K. Vaka, Srinivasa Sammeta, L.B. Day, and S. Narasimha Murthy**, “Delivery of Nerve Growth Factor to Brain Via Intranasal Administration and Enhancement of Brain Uptake”, *Journal of Pharmaceutical Sciences* (2009).
35. **Siva Ram K. Vaka, Srinivasa Sammeta, L.B. Day, and S. Narasimha Murthy**, “Transcorneal Iontophoresis for Delivery of Ciprofloxacin Hydrochloride”, *Current Eye Research*, 33, 661-667 (2008).
36. **Xiaoning Wang, David Wedge, Nurhayat Tabanca, Robert Johnson, Stephen Cutler, Patrick Pace, B.J. Smith, and L. Zhou** “Development of a Miniaturized 24-well Strawberry Leaf Disk Bioassay for Evaluating Natural Fungicides”, *Natural Products Communications*, 3, 1079-1084 (2008).

37. **Barbara Wells**, D.E. Beck, J.R. Draugalis, R.A. Kerr, L.L. Maine, D.M. Plaza, and M.K. Speedie, "What Future Awaits Beyond Pharmaceutical Care: Report of the 2007-2008 Argus Commission", *Am. J. Pharm. Ed.*, 72: Article S8 (2008).
38. **John Williamson**, "And the Rockets Red Glare", *Phi Kappa Phi Forum* (Summer 2009).
39. **John Williamson**, "Facing Down Malaria: Taking on a global child killer", *Phi Kappa Phi Forum*, 28-29 (Fall 2008).
40. L.P. Willis, **Shiqian Zhu**, **Kristine Willett**, and R.T. DiGiulio, "Effect of CYP1A inhibition on the biotransformation of benzo[*a*]pyrene in two populations of *Fundulus heteroclitus* with different exposure histories", *Aquatic Toxicology*, 92, 195-201 (2009).
41. **Shuang-Qing Zhang**, **Ziyaur Rahman**, **Sridhar Thumma**, **Michael Repka**, G.H. Chen, and S.M. Li, "Development and Evaluation of a pH-Dependent Sustained Release Tablet for Irritable Bowel Syndrome", *Drug Development and Industrial Pharmacy*, 35, 57-64 (2009).

TECHNOLOGY TRANSFER transactions:

(In the interest of protecting confidential information, the names and titles associated with School of Pharmacy invention disclosures and patent applications will no longer be published until after a patent has issued.)

Research Disclosures Filed in FY 2008-09: 0

US Patents Pending: 29

Recent US Patents Granted: *Novel Antigiardial Agents and Methods of Use Thereof*.

Avery, Walker, and Telang. US Patent #7,468,445 Issued 12/23/2008.

The following **SPECIAL ANNOUNCEMENTS** are also listed:

- **Dr. Ikhlas Khan** (NCNPR) was presented with the Norman R. Fransworth Excellence in Botanical Research Award. The presentation was made to Dr. Khan during the Oxford International Conference on the Science of Botanicals, held in April 2009.
- **Ms. Monica Love** (Medicinal Chemistry) was awarded a Dissertation Fellowship by the Graduate School for the Spring 2009 semester.
- **Mr. Stephen Slauson** (Medicinal Chemistry) was awarded a Dissertation Fellowship by the Graduate School for the Spring 2009 semester.
- **Ms. Suvapun Bunniran** (Pharmacy Administration) and **Mr. Pankaj Daga** (Medicinal Chemistry) received the Graduation Student Achievement awards for 2008-2009.

Please continue to send me important research and graduate information so that I might share it with your faculty colleagues.

cc: Dean Barbara G. Wells
 Ms. Dabney Weems
 Dr. Robin Buchannon, Office of Research