Nanomedicines ALLIANCE

NanoMed Digest

Nanomedicines Alliance Newsletter
March 2015

Please consider joining the Nanomedicines Alliance. If you are interested, please contact us at info@nanomedicines-alliance.org.

Regulatory and Legislative Developments

NNI Workshop Report

The National Nanotechnology Initiative (NNI) has released a report on its September 2013 "Stakeholder Perspectives on Perception, Assessment, and Management of the Potential Risks of Nanotechnology" workshop. The report captures stakeholder discussion on potential risk assessment, management, and communication for nanomaterials and nanotechnology products. The analysis of discussion emphasizes the need for communication resources, decision-making tools, data resources, and standards and guidances. The report also includes a summary of the roundtable moderated by members of the Nanomedicines Alliance (pp. 47 – 8).
http://www.nano.gov/sites/default/files/pub_resource/2013_nni_r3_workshop_report.pdf

EPA Proposal for Nanomaterial Reporting

The US Environmental Protection Agency (EPA) issued a proposal for one-time reporting and record-keeping on nanomaterials. Companies that manufacture products or process chemical substances as nanoscale materials would be required to report to EPA on available health and safety data, specific chemical identity, production volume, and manufacturing and processing methodology. Public comments on the proposal will be accepted within 90 days of publication.
http://yosemite.epa.gov/opa/admpress.nsf/21b8983ffa5d0e4685257dd4006b85e2/36465ec76a3b4efd85257e13004e8c95!OpenDocument

Reviews and Other Publications of Interest

In situ conversion of porphyrin microbubbles to nanoparticles for multimodality imaging. Nature Nanotecnology, March 2015. Elizabeth Huynh, Ben Y. C. Leung, Brandon L. Helfield, Mojdeh Shakiba, Julie-Anne Gandier, Cheng S. Jin, Emma R. Master, Brian C. Wilson, David E. Goertz, Gang Zheng.
http://www.nature.com/nnano/journal/vaop/ncurrent/full/nnano.2015.25.html

Microsecond scale vibrational spectroscopic imaging by multiplex stimulated Raman scattering microscopy. Light: Science & Applications, Vol. 4, March 2015. Chien-Sheng Liao, Mikhail N Slipchenko, Ping Wang, Junjie Li, Seung-Young Lee, Robert A Oglesbee, Ji-Xin Cheng.
http://www.nature.com/lsa/journal/v4/n3/full/lsa201538a.html

Lung Tumors. ACS Nano, Vol. 9, Issue 3, pp. 2377 – 2389, 2015. Sabine H. van Rijt, Deniz A. Bölükbas, Christian Argyo, Stefan Datz, Michael Lindner, Oliver Eickelberg, Melanie Königshoff, Thomas Bein, Silke Meiners.
http://pubs.acs.org/doi/abs/10.1021/nn5070343

Use of a Lipid-Coated Mesoporous Silica Nanoparticle Platform for Synergistic Gemcitabine and Paclitaxel Delivery to Human Pancreatic Cancer in Mice. ACS Nano, March 2015. Huan Meng, Meiying Wang, Huiyu Liu, Xiangsheng Liu, Allen Situ, Bobby Wu, Zhaoxia Ji, Chong Hyun Chang, Andre E. Nel.
http://pubs.acs.org/doi/abs/10.1021/acsnano.5b00510

Remote control of the permeability of the blood–brain barrier by magnetic heating of nanoparticles: A proof of concept for brain drug delivery. Journal of Controlled Release, Vol. 206, pp. 49 – 57, 2015. Seyed Nasrollah Tabatabaei, Hélène Girouard, Anne-Sophie Carret, Sylvain Martel.
http://www.sciencedirect.com/science/article/pii/S0168365915001376

Tumor Cell Targeting by Iron Oxide Nanoparticles Is Dominated by Different Factors In Vitro versus In Vivo. PLOS One, 2015. Christian NDong, Jennifer A. Tate, Warren C. Kett, Jaya Batra, Eugene Demidenko, Lionel

D. Lewis, P. Jack Hoopes, Tillman U. Gerngross, Karl E. Griswold.
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0115636

Ultrasonic delivery of silica–gold nanoshells for photothermolysis of sebaceous glands in humans: Nanotechnology from the bench to clinic. Journal of Controlled Release, Vol. 206, pp. 30 – 36, 2015. Dilip Paithankar, Byeong Hee Hwang, Girish Munavalli, Arielle Kauvar, Jenifer Lloyd, Richard Blomgren, Linda Faupel, Todd Meyer, Samir Mitragotri.
http://www.sciencedirect.com/science/article/pii/S0168365915001510

Bioactive Nanoengineered Hydrogels for Bone Tissue Engineering: A Growth-Factor-Free Approach. ACS Nano, Vol. 3, Issue 9, pp. 3109 – 3118, February 2015. Janet R. Xavier, Teena Thakur, Prachi Desai, Manish K. Jaiswal, Nick Sears, Elizabeth Cosgriff-Hernandez, Roland Kaunas, Akhilesh K. Gaharwar.
http://pubs.acs.org/doi/abs/10.1021/nn507488s

Immunomodulatory spherical nucleic acids. Proceedings of the National Academy of Sciences, Vol. 112, No. 13, March 2015. Aleksandar F. Radovic-Moreno, Natalia Chernyak, Christopher C. Mader, Subbarao Nallagatla, Richard S. Kang, Liangliang Hao, David A. Walker, Tiffany L. Halo, Timothy J. Merkel, Clayton H. Rische, Sagar Anantatmula, Merideth Burkhart, Chad A. Mirkin, Sergei M. Gryaznov.
http://www.pnas.org/content/112/13/3892

Molecular ruler determines needle length for the Salmonella Spi-1 injectisome. Proceedings of the National Academy of Sciences, Vol. 112, No. 13, March 2015. Daniel H. Wee and Kelly T. Hughes.
http://www.pnas.org/content/112/13/4098

Magnetic nanoparticles with high specific absorption rate of electromagnetic energy at low field strength for hyperthermia therapy. Journal of Applied Physics, Vol. 117, March 2015. Fridon Shubitidze, Katsiaryna Kekalo, Robert Stigliano, Ian Baker.
http://scitation.aip.org/content/aip/journal/jap/117/9/10.1063/1.4907915

Implantable hydrogel embedded dark-gold nanoswitch as a theranostic probe to sense and overcome cancer multidrug resistance. Proceedings of the National Academy of Sciences, Vol. 112, No. 11, March 2015. João Conde, Nuria Oliva, Natalie Artzi.
http://www.pnas.org/content/112/11/E1278

Protease-Mediated Release of Chemotherapeutics from Mesoporous Silica Nanoparticles to *ex Vivo* Human and Mouse Label-free *in vivo* molecular imaging of underglycosylated mucin-1 expression in tumour cells. Nature Communications, Vol. 6, No. 6719, March 2015. Xiaolei Song, Raag D. Airan, Dian R. Arifin, Amnon Bar-Shir, Deepak K. Kadayakkara, Guanshu Liu, Assaf A. Gilad, Peter C. M. van Zijl, Michael T. McMahon, Jeff W. M. Bulte.
http://www.nature.com/ncomms/2015/150327/ncomms7719/full/ncomms7719.html

Continuous precipitation of IgG from CHO cell culture supernatant in a tubular reactor. Biotechnology Journal, March 2015. Nikolaus Hammerschmidt, Beate Hintersteiner, Nico Lingg, Alois Jungbauer.
http://onlinelibrary.wiley.com/doi/10.1002/biot.201400608/abstract

Protein unfolding allows use of commercial antibodies in an apolipoprotein M sandwich ELISA. The Journal of Lipid Research, Vol. 56, pp. 754 – 759, March 2015. Markus Høybye Bosteen, Björn Dahlbäck, Lars Bo Nielsen, Christina Christoffersen.
http://www.jlr.org/content/56/3/754

Tuning Cytokine Receptor Signaling by Re-orienting Dimer Geometry with Surrogate Ligands. Cell, Vol. 160, Issue 6, pp. 1196–1208, March 2015. Ignacio Moraga, Gerlinde Wernig, Stephan Wilmes, Vitalina Gryshkova, Christian P. Richter, Wan-Jen Hong, Rahul Sinha, Feng Guo, Hyna Fabionar, Tom S. Wehrman, Peter Krutzik, Samuel Demharter, Isabelle Plo, Irving L. Weissman, Peter Minary, Ravindra Majeti, Stefan N. Constantinescu, Jacob Piehler, K. Christopher Garcia.
http://www.cell.com/cell/abstract/S0092-8674%2815%2900176-2?_returnURL=http%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0092867415001762%3Fshowall%3Dtrue

Targeting bacteria via iminoboronate chemistry of amine-presenting lipids. Nature Communications, Vol. 6, No. 6561, March 2015. Anupam Bandyopadhyay, Kelly A. McCarthy, Michael A. Kelly, Jianmin Gao.
http://www.nature.com/ncomms/2015/150312/ncomms7561/full/ncomms7561.html

Conferences and Workshops

Nanotechnologies in Drug Delivery Congress, 27 – 28 April 2015, London, UK
Nanoscale fabrication
Drug delivery platforms
siRNA
Personalized medicine
Imaging
http://www.mnmconferences.com/nanotechnologies.html

Future of Drug Delivery: Novel Approaches to Targeted Therapies, 7 May 2015, Waltham, MA
Delivery Systems
http://www.nesba.net/meetings.html

EuroNanoForum 2015, 10 – 12 June 2015, Riga, Latvia
Nanomanufacturing
Advanced Materials
http://euronanoforum2015.eu/

NNI/CPSC Workshop on Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products, 7 – 8 July 2015, Arlington, VA
Toxicology
http://www.nano.gov/node/1327

International Society for Biomedical Polymers and Polymeric Biomaterials, 8 – 10 July 2015, Orlando, FL
Nanocomposites
Drug delivery systems
Controlled release systems
Biomedical pharmaceutical polymers
http://isbppb.org/conferences-workshops/

International Conference on Biomedical Engineering and Systems, 13 – 14 July 2015, Barcelona, Spain.
Biomedical devices
Biomaterials
Drug design
Nanotechnology for biomedical applications
http://icbes.net/papers/

International Conference on Advanced Nanomaterials, 20 – 22 July 2015, Aveiro, Portugal
Nanomedicine
Grpahene Technology
http://www.anm2015.com/

Reference Section

Nanobio- and Nanomedicine Companies

Listed alphabetically:
http://www.nanowerk.com/nanotechnology/nanomaterial/nanobiomedicine_a.php

Nano Organizations

National Center for Toxicological Research (NCTR):
http://www.fda.gov/AboutFDA/CentersOffices/NCTR/default.htm

National Nanotechnology Initiative (NNI):
http://www.nano.gov/

Nano Science and Technology Consortium (NSTC): http://www.nstc.in/

Nano Science and Technology Institute (NSTI):
http://www.nsti.org/

The Nanotechnology Institute (NTI):
http://nanotechinstitute.org/

Nano Journals

American Chemical Society -- Nano Letters:
http://pubs.acs.org/journal/nalefd

Institute of Physics – Nanotechnology:
http://iopscience.iop.org/0957-4484/

Journal of Nanoscience and Nanotechnology:
http://www.aspbs.com/jnn/

NanoTrends - A Journal of Nanotechnology and its Applications: http://www.nstc.in/journal/default.aspx

BCC Research -- Nanotechnology Reports:
http://www.bccresearch.com/index/category/code/nanotechnology

Nanomedicine: Nanotechnology, Biology, and Medicine: http://www.nanomedjournal.com/home0

Nanomedicine:
http://www.futuremedicine.com/page/about.jsp

Nature Nanotechnology:
http://www.nature.com/nnano/focus/highlights/index.html?WT.mc_id=NM1110CT01

For further information, or if you have any questions about the Nanomedicines Alliance, please contact the Nanomedicines Alliance Secretariat at 1-202-230-5653.

CONTACT

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