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### Graphical Abstracts/Journal of Controlled Release 260 (2017) e1-e7

Cover Story: Real-time monitoring of antibody microdistribution during photoimmunotherapy

Journal of Controlled Release 260 (2017) p. 247

Kinam Park

Purdue University, Biomedical Engineering and Pharmaceutics, West Lafayette, IN 47907, USA

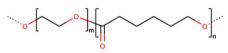
# PEG-PCL-based nanomedicines: A biodegradable drug delivery system and its application

Philip Grossen, Dominik Witzigmann, Sandro Sieber, Jörg Huwyler

Division of Pharmaceutical Technology, Department of Pharmaceutical Sciences, University of Basel, Basel, Switzerland



Passive drug targeting



PEG-b-PCL

Triggered drug release



Journal of Controlled Release 260 (2017) pp. 46-60



Journal of Controlled Release 260 (2017) pp. 61-77

#### Recent advancements in liposomes targeting strategies to cross blood-brain barrier (BBB) for the treatment of Alzheimer's disease

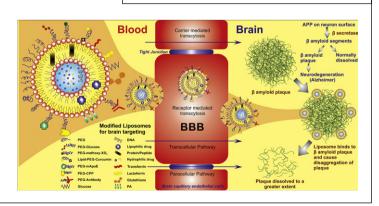
Mukta Agrawal<sup>a</sup>, Ajazuddin<sup>a</sup>, Dulal K. Tripathi<sup>a</sup>, Swarnlata Saraf<sup>b</sup>, Shailendra Saraf<sup>b</sup>, Sophia G. Antimisiaris<sup>c,d</sup>, Spyridon Mourtas<sup>c</sup>, Margareta Hammarlund-Udenaes<sup>e</sup>, Amit Alexander<sup>a,e</sup>

<sup>a</sup>Rungta College of Pharmaceutical Sciences and Research, Kohka-Kurud Road, Bhilai 490024, Chhattisgarh, India

<sup>b</sup>University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur 492010, Chhattisgarh, India

<sup>c</sup>Laboratory of Pharmaceutical Technology, Department of Pharmacy, University of

<sup>a</sup>FORTH/ICE-HT, Institute of Chemical Engineering, Rio, 25104 Patras, Greece <sup>e</sup>Department of Pharmaceutical Biosciences, Translational PKPD Research Group, Uppsala University, Uppsala, Sweden



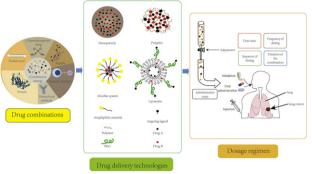
# Advances in combination therapy of lung cancer: Rationales, delivery technologies and dosage regimens

Lan Wu<sup>a</sup>, Donglei Leng<sup>b</sup>, Dongmei Cun<sup>a</sup>, Camilla Foged<sup>b</sup>, Mingshi Yang<sup>a,b,\*</sup>

<sup>a</sup>Wuya College of Innovation, Shenyang Pharmaceutical University, 110016 Shenyang, China
<sup>b</sup>Department of Pharmacy, Faculty of Health and Medical Sciences, University of Copenhagen, Universitetsparken 2, DK-2100 Copenhagen, Denmark

# Journal of Controlled Release 260 (2017) pp. 78-91

Journal of Controlled Release 260 (2017) pp. 111-123



## Nanomedicine for prostate cancer using nanoemulsion: A review

Aravindsiva Sasikumar<sup>1</sup>, Kaladhar Kamalasanan\*, 1

Department of Pharmaceutics, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham University, Amrita University, AIMS Health Sciences Campus, Kochi, Kerala, India

# Prostate targeting Targeting the blood and lymph circulation of the prostate Targeting the blood and lymph circulation of the prostate Targeting to the tissues of the prostate Targeting to the tissues of the prostate Targeting specific cellular types or intracellular targeting

#### Mechanical microencapsulation: The best technique in taste masking for the manufacturing scale - Effect of polymer encapsulation on drug targeting

Basheer Al-kasmi<sup>a</sup>, MHD. Bashir Alsirawan<sup>b</sup>, Mais Bashimam<sup>a</sup>, Hind El-zein<sup>a</sup>

<sup>a</sup>Department of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmacy, Damascus University, Syria

<sup>b</sup>Center for Pharmaceutical Engineering Science, University of Bradford, United Kingdom

# Taste masking techniques Complexation technique Complexation technique Microencapsulation technique Hot melting technique

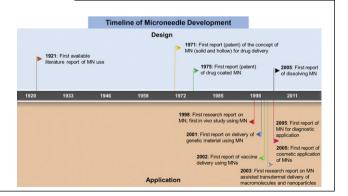
#### Microneedles in the clinic

Shubhmita Bhatnagar<sup>a,1</sup>, Kaushalkumar Dave<sup>b,\*,1</sup>, Venkata Vamsi Krishna Venuganti<sup>a,\*\*</sup>

<sup>a</sup>Department of Pharmacy, Birla Institute of Technology and Science (BITS) Pilani, Hyderabad Campus, Hyderabad 500078, India

<sup>b</sup>Present Address: Division of Biopharmaceutics, Office of New Drug Products, Office of Pharmaceutical Quality, Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD 20993, USA

#### Journal of Controlled Release 260 (2017) pp. 164-182

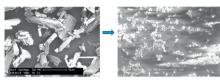


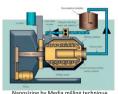
#### Nanosizing techniques for improving bioavailability of drugs

Raida Al-Kassas\*, Mahima Bansal, John Shaw

School of Pharmacy, Faculty of Medical and Health Sciences, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand

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#### Intrinsic parameters for the synthesis and tuned properties of amphiphilic chitosan drug delivery nanocarriers

Marjan Motiei<sup>a</sup>, Soheila Kashanian<sup>b,c,\*</sup>, Lucian A. Lucia<sup>d,f</sup>, Mozafar Khazaei<sup>e</sup>

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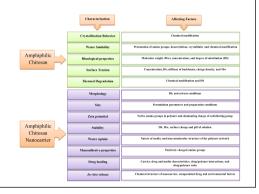
 ${}^{b}\textit{Faculty of Chemistry, Sensor and Biosensor Research Center (SBRC) \& Nanoscience and Nanotechnology Research Center (SBRC) & Control of the Control$ Center (NNRC), Razi University, Kermanshah, Islamic Republic of Iran

<sup>c</sup>Nano Drug Delivery Research Center, Kermanshah University of Medical sciences, Kermanshah, Islamic Republic

 $\overset{d}{ ext{Q}}$ ilu University of Technology, Key Laboratory of Pulp & Paper Science and Engineering, Jinan 250353, PR China <sup>e</sup>Fertility and Infertility Research Center, Kermanshah University of Medical Sciences, Kermanshah, Islamic republic

<sup>f</sup>Departments of Forest Biomaterials, Chemistry, Campus Boxes 8005, 8204, North Carolina State University, Raleigh, North Carolina 27695, United States

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#### Evolution of the scientific literature on drug delivery: A 1974-2015 bibliometric study

C. Robert<sup>a,f,\*</sup>, C.S. Wilson<sup>b</sup>, A. Venuta<sup>c,d</sup>, M. Ferrari<sup>c,g</sup>, C.-D. Arreto<sup>e</sup>

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<sup>b</sup>School of Information Systems, Technology and Management, University of New South Wales, UNSW, Sydney 2052, Australia

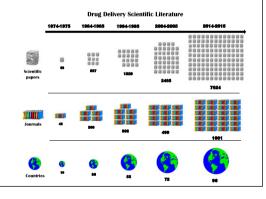
<sup>c</sup>Department of Nanomedicine, Houston Methodist Research Institute, 6670 Bertner Ave, Houston, TX 77030, USA

<sup>d</sup>Department of Pharmacy, University of Naples Federico II, Naples 80131, Italy

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gDepartment of Medicine, Weill Cornell Medical College, 1330 York Ave, New York, NY 10065, USA

#### Journal of Controlled Release 260 (2017) pp. 226-233



# Angubindin-1, a novel paracellular absorption enhancer acting at the tricellular tight junction

Susanne M. Krug<sup>b</sup>, Tomohiro Hayaishi<sup>a</sup>, Daisuke Iguchi<sup>a</sup>, Akihiro Watari<sup>a</sup>, Azusa Takahashi<sup>a</sup>, Michael Fromm<sup>b</sup>, Masahiro Nagahama<sup>c</sup>, Hiroyuki Takeda<sup>d</sup>, Yoshiaki Okada<sup>a</sup>, Tatsuya Sawasaki<sup>d</sup>, Takefumi Doi<sup>a</sup>, Kiyohito Yagi<sup>a</sup>, Masuo Kondoh<sup>a,a</sup>

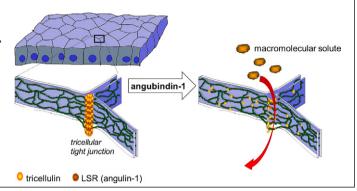
 $^a$ Graduate School of Pharmaceutical Sciences, Osaka University, Osaka 565-0871, Japan

b<sup>i</sup>nstitute of Clinical Physiology, Department of Gastroenterology, Rheumatology and Infectious Diseases, Campus Benjamin Franklin, Charité – Universitätsmedizin Berlin, 12203 Berlin, Germany

<sup>c</sup>Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Tokushima 770-8514, Japan

<sup>d</sup>Proteo-Science Center, Ehime University, Ehime 790-8577, Japan

#### Journal of Controlled Release 260 (2017) pp. 1-11



#### Singlet oxygen-responsive micelles for enhanced photodynamic therapy

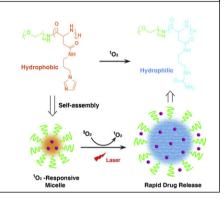
Xiaodan Li<sup>a,1</sup>, Min Gao<sup>a,1</sup>, Keting Xin<sup>a</sup>, Ling Zhang<sup>a</sup>, Dan Ding<sup>b</sup>, Deling Kong<sup>b</sup>, Zheng Wang<sup>a</sup>, Yang Shi<sup>c</sup>, Fabian Kiessling<sup>c</sup>, Twan Lammers<sup>c</sup>, Jianjun Cheng<sup>d</sup>, Yanjun Zhao<sup>a, e</sup>

<sup>a</sup>School of Pharmaceutical Science & Technology, Tianjin Key Laboratory for Modern Drug Delivery & High Efficiency, and Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), Tianjin University, Tianjin 300072. China

<sup>b</sup>Key Laboratory of Bioactive Materials, Ministry of Education, College of Life Science, and Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), Nankai University, Tianjin 300071, China <sup>c</sup>Institute for Experimental Molecular Imaging, RWTH Aachen University Clinic, 52074 Aachen, Germany

department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL 61801, United States

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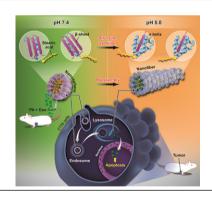


# pH triggered re-assembly of nanosphere to nanofiber: The role of peptide conformational change for enhanced cancer therapy

Peiqing Liang<sup>a</sup>, Junjiong Zheng<sup>b</sup>, Shulin Dai<sup>a</sup>, Jiayu Wang<sup>a</sup>, Zhaoqing Zhang<sup>a</sup>, Ting Kang<sup>a</sup>, Changyun Quan<sup>a,\*</sup>

<sup>a</sup>Guangdong Provincial Key Laboratory of Sensor Technology and Biomedical Instruments (Sun Yat-sen University), Department of Biomedical Engineering, School of Engineering, Sun Yat-sen University, Guangzhou 510006, PR China <sup>b</sup>Department of Urology, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou 510120, PR China

#### Journal of Controlled Release 260 (2017) pp. 22-31

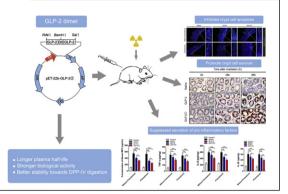


# A DPP-IV-resistant glucagon-like peptide-2 dimer with enhanced activity against radiation-induced intestinal injury

Jintao Gu<sup>a,1</sup>, Shuo Liu<sup>a,1</sup>, Nan Mu<sup>a,1</sup>, Tonglie Huang<sup>a,1</sup>, Wangqian Zhang<sup>a</sup>, Huadong Zhao<sup>b</sup>, Zhen Shu<sup>a</sup>, Cun Zhang<sup>a</sup>, Qiang Hao<sup>a</sup>, Weina Li<sup>a</sup>, Xiaochang Xue<sup>a,\*</sup>, Wei Zhang<sup>a,\*</sup>, Yingqi Zhang<sup>a,\*</sup>

<sup>a</sup>State Key Laboratory of Cancer Biology, Biotechnology Center, School of Pharmacy, Fourth Military Medical University, Xi'an 710032, China

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The effects of non-invasive radiofrequency electric field hyperthermia on biotransport and biodistribution of fluorescent [60] fullerene derivative in a murine orthotopic model of breast adenocarcinoma

Norman A. Lapin<sup>a,1</sup>, Martyna Krzykawska-Serda<sup>a,b,1</sup>, Sean Dilliard<sup>a,c</sup>, Yuri Mackeyev<sup>d</sup>, Maciej Serda<sup>d,e</sup>, Lon J. Wilson<sup>d</sup>, Steven A. Curley<sup>a,f</sup>, Stuart J. Corr<sup>a,d,g,</sup>

<sup>a</sup>Michael E. DeBakey Department of Surgery, Baylor College of Medicine, Houston, TX 77030, USA

<sup>b</sup>Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Kraków 30-387, Poland

<sup>c</sup>Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX 77005, USA

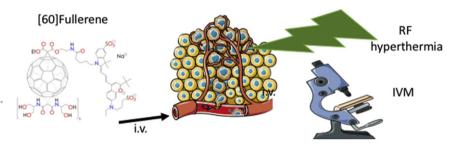
<sup>d</sup>Department of Chemistry, Rice University, Houston, TX 77005, USA

<sup>e</sup>Institute of Chemistry, University of Silesia in Katowice, 40-006 Katowice, Poland

fDepartment of Mechanical Engineering and Materials Science, Rice University, Houston, TX 77005, USA gDepartment of Biomedical Engineering, University of

Houston, Houston, TX 77204, USA

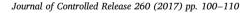
Journal of Controlled Release 260 (2017) pp. 92-99

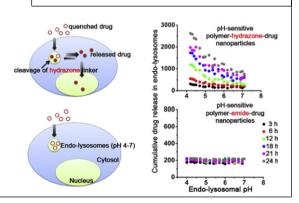


#### A quantitative study of the intracellular fate of pH-responsive doxorubicinpolypeptide nanoparticles

Jing Wang, Jayanta Bhattacharyya, Eric Mastria, Ashutosh Chilkoti\*

Department of Biomedical Engineering, Duke University, Durham, North Carolina 27708, United States





<sup>&</sup>lt;sup>b</sup>Department of General Surgery, Tangdu Hospital, Fourth Military Medical University, Xi'an, 710032, China

#### Photoactivatable fluorescent probes reveal heterogeneous nanoparticle permeation through biological gels at multiple scales

Benjamin S. Schuster  $^{a,b,1,2}$ , Daniel B. Allan  $^{c,d,1}$ , Joshua C. Kays  $^{a,b,1}$ , Justin Hanes  $^{a,b,e,*}$ , Robert L. Leheny  $^{c,**}$ 

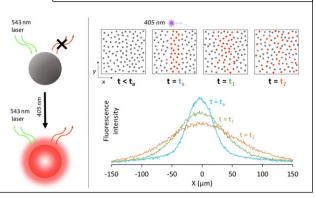
<sup>a</sup>Center for Nanomedicine, Johns Hopkins University School of Medicine, Baltimore, MD 21231, USA

<sup>b</sup>Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD 21205, USA

<sup>c</sup>Department of Physics & Astronomy, Johns Hopkins University, Baltimore, MD 21218, USA <sup>d</sup>NSLS-II, Brookhaven National Laboratory, Upton, NY 11973, USA

<sup>e</sup>Department of Ophthalmology, Johns Hopkins University School of Medicine, Baltimore, MD 21231, USA

#### Journal of Controlled Release 260 (2017) pp. 124-133



# Targeting of p32 in peritoneal carcinomatosis with intraperitoneal linTT1 peptide-guided pro-apoptotic nanoparticles

Hedi Hunt<sup>a</sup>, Lorena Simón-Gracia<sup>a</sup>, Allan Tobi<sup>a</sup>, Venkata Ramana Kotamraju<sup>b</sup>, Shweta Sharma<sup>b</sup>, Mait Nigul<sup>c</sup>, Kazuki N. Sugahara<sup>b,d</sup>, Erkki Ruoslahti<sup>b,e</sup>, Tambet Teesalu<sup>a,b,e,e</sup>,

<sup>a</sup>Laboratory of Cancer Biology, Institute of Biomedicine, Centre of Excellence for Translational Medicine, University of Tartu, Ravila 14b, 50411 Tartu, Estonia

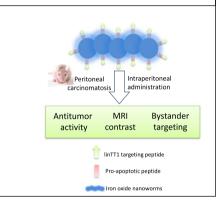
<sup>b</sup>Cancer Research Center, Sanford-Burnham-Prebys Medical Discovery Institute, 10901 North Torrey Pines Road, La Jolla, CA 92037, USA

<sup>c</sup>Laboratory Animal Centre, Institute of Biomedicine and Translational Medicine, University of Tartu, Ravila 14b, 50411 Tartu, Estonia

<sup>d</sup>Department of Surgery, Columbia University College of Physicians and Surgeons, New York, NY, USA

<sup>e</sup>Center for Nanomedicine and Department of Cell, Molecular and Developmental Biology, University of California, Santa Barbara, Santa Barbara, CA 93106, USA

#### Journal of Controlled Release 260 (2017) pp. 142-153



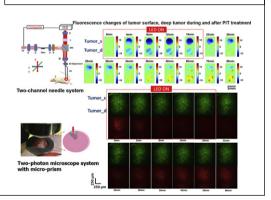
# Real-time monitoring of microdistribution of antibody-photon absorber conjugates during photoimmunotherapy *in vivo*

Qinggong Tang<sup>a,1</sup>, Tadanobu Nagaya<sup>b,1</sup>, Yi Liu<sup>a</sup>, Jonathan Lin<sup>a</sup>, Kazuhide Sato<sup>b</sup>, Hisataka Kobayashi<sup>b,a</sup>, Yu Chen<sup>a,a</sup>

<sup>a</sup>University of Maryland, Fischell Department of Bioengineering, 2218 Jeong H.Kim Engineering Building, College Park, MD 20742, United States

<sup>b</sup>National Institute of Health, National Cancer Institute, Molecular Imaging Program, Bldg 10, Room B3B69, Bethesda, MD 20892-1088, United States

#### Journal of Controlled Release 260 (2017) pp. 154-163



#### Intracellular trafficking of particles inside endosomal vesicles is regulated by particle size

Michihiko Aoyama<sup>a</sup>, Yasuo Yoshioka<sup>a,b,c,e</sup>, Yoshiyuki Arai<sup>d</sup>, Haruna Hirai<sup>a</sup>, Rio Ishimoto<sup>a</sup>, Kazuya Nagano<sup>a</sup>, Kazuma Higashisaka<sup>a</sup>, Takeharu Nagai<sup>d,e</sup>, Yasuo Tsutsumi<sup>a,f,e</sup>

<sup>a</sup>Laboratory of Toxicology and Safety Science, Graduate School of Pharmaceutical Sciences, Osaka University, 1-6 Yamadaoka, Suita, Osaka 565-0871, Japan <sup>b</sup>Vaccine Creation Project, BIKEN Innovative Vaccine Research Alliance Laboratories, Research Institute for Microbial Diseases, Osaka University, 3-1 Yamadaoka, Suita, Osaka 565-0871, Japan

<sup>c</sup>BIKEN Center for Innovative Vaccine Research and Development, The Research Foundation for Microbial Diseases of Osaka University, 3-1 Yamadaoka, Suita, Osaka 565-0871, Japan

<sup>d</sup>Department of Biomolecular Science and Engineering, The Institute of Scientific and Industrial Research, Osaka University, 8-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan

e<sup>\*</sup>Laboratory of Biomolecular Science and Engineering, Graduate School of Pharmaceutical Sciences, Osaka University, 1-6 Yamadaoka, Suita, Osaka 565-0871, Japan <sup>f</sup>The Center for Advanced Medical Engineering and Informatics, Osaka University, 1-6 Yamadaoka, Suita, Osaka 565-0871, Japan Silica nanoparticles (>100 nm)

Silica sub-micron particles (<100 nm)

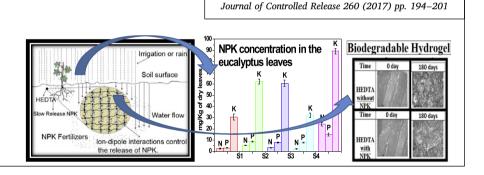
endosomal vesicle microtubules capendent movement

suppressed microtubules dependent movement

Biodegradable hydrogel derived from cellulose acetate and EDTA as a reduction substrate of leaching NPK compound fertilizer and water retention in soil

André M. Senna<sup>a,\*</sup>, Vagner R. Botaro<sup>a,b</sup>

<sup>a</sup>Universidade Federal de Ouro Preto-REDEMAT, Ouro Preto, 35400-000, Minas Gerais, Brazil <sup>b</sup>Universidade Federal de São Carlos-UFSCAR, Sorocaba 18052-780, São Paulo, Brazil



# Effect of stratum corneum heterogeneity, anisotropy, asymmetry and follicular pathway on transdermal penetration

Ana M. Barbero\*, H. Frederick Frasch

Health Effects Laboratory Division, National Institute for Occupational Safety and Health, 1095 Willowdale Road, Morgantown, WV 26505, USA

