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YUKIO NAGASAKI



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Department of Materials Sciences,
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PERSONAL: Born Aug. 11, 1959, Married, 1 Child

EDUCATION: 1987 Ph.D., Department of Industrial Chemistry. Science University of Tokyo, Shinjuku, Tokyo, Japan
Synthesis of New Monomers, Oligomers and Polymers by Using Novel Reaction Route -Approach from Seeds Discovering-
1982 B.A., Department of Industrial Chemistry, Science University of Tokyo, Shinjuku, Tokyo, Japan

DISTINCTIONS

Fellow, the Society of Polymer Science, Japan (2021)
Fellow, Biomaterials Science & Engineering, Society for Biomaterials (2020)
Top 20 faculty members in University of Tsukuba (2018)
Top 20 faculty members in University of Tsukuba (2017)
The Award of the Society of Polymer Science, Japan (2017)
15th Japan DDS (Drug Delivery System) Society NAGAI Award (2015)
The Award of the Japanese Society for Biomaterials (2014)
The Award of The Japanese for Ulcer Society (2014)
SPSJ Mitsubishi Chemical Award, 2010
The Award for Encouragement of Research in Polymer Science; The Society of Polymer Science, Japan (1995)
Inoue Foundation Award for Distinguish Ph.D. Thesis, 1990
Scholarship of The Japan Scholarship Foundation, 1982-1987
Scholarship of Kosaikai, 1978-1982

EXPERIENCE

Adjunct Professor Department of Chemistry, Graduate School of Science, The University of Tokyo, 2022-present
Principal Investigator, Center for Research in Isotopes and Environmental Dynamics, University of Tsukuba, Tsukuba 305-8573, Japan, 2013-present
Principal Investigator, Strategic Initiatives (Project type), University of Tsukuba, 2011-2014
Principal Investigator, International Center for Materials Nanoarchitectonics Satellite (MANA), National Institute for Materials Science (NIMS), University of Tsukuba, 305-8573, Japan, 2007-2017
Adjunct Professor, Master's School of Medical Sciences, Graduate School of Comprehensive Human Sciences, University of Tsukuba, 305-8573, Japan, 2007-present
Honorary Professor, Polyscale Technology Center, Tokyo University of Science, Noda 278-8510, Japan, 2006-2011
Project Leader, Nagasaki Project, Nanology Aspect, Tsukuba Advanced Research Alliance, University of Tsukuba, Tsukuba 305-8573, Japan, 2006-2011
Principal Investigator, Tsukuba Research Center for Interdisciplinary Materials Science, University of Tsukuba, Tsukuba 305-8573, Japan, 2004-2011
Professor, Department of Materials Science, Graduate School of Pure and Applied Science, University of Tsukuba, Tsukuba 305-8573, Japan, 2004-present
Director, Nano-chemistry Division, Research Center for Nano-science and Technology, Tokyo University of Science, 2002-2004
Researcher, Research Center for Applied Materials, Tokyo University of Science, 2000-2004
Professor, Department of Materials Science, Science University of Tokyo, Noda 278-8510, Japan, 2003-2004
Associate Professor, Department of Materials Science, Science University of Tokyo, Noda 278-8510, Japan, 1999-2003
Assistant Professor, Department of Materials Science, Science University of Tokyo, Noda 278-8510, Japan, 1994-1999
Visiting Researcher, Department of Polymer Science and Engineering, University of Massachusetts, Amherst, MA 01003, U.S.A., 1992-1993
Research Associate, Department of Materials Science, Science University of Tokyo, Noda 278-8510, Japan, 1989-1994
Research Associate, Department of Industrial Chemistry, Science University of Tokyo, Shinjuku, Tokyo 162, Japan, 1987-1989
A part-time lecturer, Toyo Junior College, Bunkyo, Tokyo 112, Japan, 1986-1987

RESEARCH INTEREST

His research interest covers the creation of new functional materials via novel polymerization techniques. End-functionalized poly(ethylene glycol)s as a surface modification agent and novel nanoparticles as intelligent drug vehicles are his main target for new materials design. He is also interested in the creation of high-performance biointerface, including non-fouling and specific bio-recognition characters. He found that

poly(ethylene glycol) tethered chain surface having a mixture of long and short chain lengths reduces non-specific protein adsorption almost completely (Uchida, et al., *Ana.Chem.*, 77, 1075, 2005). Antibody/PEG co-immobilized surface increased reactivity of the surface antibody with the increasing PEG tethered chain density (Nagasaki, et al., *J.Coll.Int.Sci.*,307, 524, 2007). This immunochemical enhancing effect is a promising phenomenon for the creation of a high-functionality surface of versatile biomaterials. Recently, he has been developing nitroxide radical-containing nanoparticles (RNP), which have the scavenging ability of reactive oxygen species (ROS) to reduce oxidative stress activity (Yoshitomi, et al., *Bioconjugate Chemistry*, 20, 2792(2009)). Using RNP, ROS damage by cerebral ischemic-reperfusion is effectively reduced (Marushima, et al., *Neurosurgery*, 2011). RNP is also effective not only for Alzheimer's disease model but also for cancer, gene therapy and ulcerative colitis. Anti-inflammation by nanoparticles is very promising. Recently, they started to investigate the relationship between intestinal condition and brain/body health by their nanoparticle-type antioxidants and post-biotics.

KEYWORDS

Drug Delivery System / Nanomedicine / Biomaterials / Polymer Chemistry / Bioconjugate Chemistry/ Self-assembling drug development

EDITORIAL ACTIVITY

electric Journal of Soft Materials, The Society of Rubber Industry, Japan, Editorial Board, 2005-2012

Reactive and Functional Polymers, Elsevier, Advisory Board, 2007-present

Bulletin of the Chemical Society of Japan, CSJ, Editorial Board, 2010-2013

Biointerphase, American Vacuum Society, Editorial Board, 2010-2015

Acta Biomaterialia, Elsevier, Editorial Board, 2010- present

Biomaterials, Elsevier, Handling Editor, 2014- present

Journal of Clinical Biochemistry and Nutrition, Editor, 2016- present

MEMBERSHIP OF PROFESSIONAL SOCIETIES:

Chemical Society of Japan

Polymer Society of Japan (Director)

Biomaterials Society of Japan (Director)

DDS Society of Japan (Director)

Cancer Society of Japan

Society for Free Radical Research, Japan (Director)

The Japanese Pharmacological Society

Artificial Organ Society of Japan

The Japanese Society of Neutron Capture Therapy

The Japanese Society of Gastroenterology

The Japan Photodynamic Association

The Japanese Society of Anti-aging Medicine

American Chemical Society

Controlled Release Society

Society for Biomaterials
American Association of Cancer Research
European Renal Association – European Dialysis and Transplant Association
The American Society of Gene & Cell Therapy
Japan Society for Dementia Research
American Association of Pharmaceutical Scientists
Japan Union of Chemical Science and Technology (Director)

List of Publications (from 2006)

2023

1. Babita Shashni, Yukio Nagasaki, Short-chain fatty acid-releasing nano-prodrugs for attenuating growth and metastasis of melanoma, *Acta Biomaterialia*, accepted.
2. Babita Shashni, Junya Tamaoki, Makoto Kobayashi, Yukio Nagasaki, Design of a New Self-assembling Antioxidant Nanomedicine to Ameliorate Oxidative Stress in Zebrafish Embryos, *Acta Biomaterialia*, in press (doi: 10.1016/j.actbio.2023.01.012).

2022

1. Yuta Koda, Yukio Nagasaki, Design of cysteine-based self-assembling polymer drugs for anticancer chemotherapy, *Colloid and Surface B: Biointerface*, in press (10.1016/j.colsurfb.2022.112909).
2. Takahisa Watahiki[¶], Kosuke Okada[¶], Ikuru Miura, Keii To, Seiya Tanaka, Eiji Warabi, Naomi Kanno, Kenji Yamagata, Naohiro Gotoh, Hideo Suzuki, Shunichi Ariizumi, Kiichiro Tsuchiya, Yukio Nagasaki, Junichi Shoda, Antioxidative Self-assembling Nanoparticles Attenuate the Development of Steatohepatitis and Inhibit Hepatocarcinogenesis in Mice, ([¶]: Equal contribution), *Antioxidants* 2022, 11, 1939 (10.3390/antiox11101939).
3. Yutaka Ikeda, Yuya Tajika, Yukio Nagasaki, Design of self-assembling anti-epileptic drug for long-acting drug delivery in vivo, *Biomaterials Science*, in press (doi: 10.1039/d2bm01064j)
4. Hao Thi Tran[¶], Long Binh Vong[¶], Yuji Nishikawa, Yukio Nagasaki, Sorafenib-loaded Silica-containing Redox Nanoparticles for Oral Anti-liver fibrosis Therapy, *Journal of Controlled Release*, ([¶]: Equal contribution), in press (doi: 10.1016/j.jconrel.2022.04.002)
5. Quynh Nhu Nguyen-Trinh, Kim Xuyen Thi Trinh, Nhu-Thuy Trinh, Van Toi Vo, Nan Li, Yukio Nagasaki*, Long Binh Vong*, A silica-based antioxidant nanoparticle for oral delivery of Camptothecin which reduces intestinal side effects while improving drug efficacy for colon cancer treatment, *Acta Biomaterialia*, in press (doi: 10.1016/j.actbio.2022.02.036)
6. Babita Shashni, Yuya Tajika, Yukio Nagasaki, Design of Enzyme-responsive Short-Chain Fatty Acid-based Self-Assembling Drug for Alleviation of Type 2 Diabetes Mellitus, *Biomaterials*, Volume 275, 120877 (2021) (<https://doi.org/10.1016/j.biomaterials.2021.120877>).
7. Toru Yoshitomi, Yukio Nagasaki, Self-assembling antioxidants for ischemia-reperfusion injuries, *Antioxidants and Redox Signaling, Forum Article "REDOX THERANOSTICS"*, Vol. 36, No. 1-3, 80-80 (2022).

2021

1. Ahram Kim, Chiaki Yonemoto, Chitho P. Feliciano, Babita Shashni, and Yukio Nagasaki, Antioxidant nanomedicine significantly enhances the survival benefit of radiation cancer therapy by mitigating oxidative stress-induced side effects, *Small*, 2021, 17, 2008210 (10.1002/smll.202008210).
2. Takuto Toriumi, Ahram Kim, Shoichi Komine, Ikuru Miura, Suminori Nagayama, Hajime Ohmori, and Yukio Nagasaki, An Antioxidant Nanoparticle Enhances Exercise Performance in Rat High-intensity Running Models, *Advanced Healthcare Materials*, Volume 10, Issue 10, May 19, 2021, 200067 (doi.org/10.1002/adhm.202100067).
3. Babita Shashni, Yukio Nagasaki, Newly Developed Self-assembling Antioxidants as Potential Therapeutics for the Cancers, *Journal of Personalized Medicine*, Vol. 11, 92(2021) (<https://doi.org/10.3390/jpm11020092>)
4. Babita Shashni, Yuji Nishikawa, Yukio Nagasaki, Management of Tumor Growth and Angiogenesis in Triple-Negative Breast Cancer by using Redox Nanoparticles, *Biomaterials*, 120645(doi.org/10.1016/j.biomaterials.2020.120645)
5. Ahram Kim, Yuya Suzuki, Yukio Nagasaki, Molecular design of a high-performance polymeric carrier for delivery of a variety of boronic acid-containing drugs, *Acta Biomaterialia*, Volume 121, 554-565(2021) (doi: 10.1016/j.actbio.2020.12.015).

6. Ahram Kim, Minoru Suzuki, Yoshitaka Matsumoto, Nobuyoshi Fukumitsu, Yukio Nagasaki, Non-isotope enriched phenylboronic acid-decorated dual-functional nano-assemblies for an actively targeting BNCT drug, *Biomaterials*, Volume 268, 120551 (2021). (doi: 10.1016/j.biomaterials.2020.120551)

3. 2020

1. Thu-Ha Thi Nguyen, Nhu-Thuy Trinh, Han Ngoc Tran, Hao Thi Tran, Phong Quoc Le, Dai-Nghiep Ngo, Hieu Tran-Van, Toi Van Vo, Long Binh Vong, and Yukio Nagasaki, Improving Silymarin Oral Bioavailability Using Silica-installed Redox Nanoparticle to Suppress Inflammatory Bowel Disease, *Journal of Controlled Release*, Volume 331, 515-524(2021). (doi: 10.1016/j.jconrel.2020.10.042)
2. Ting Mei, Babita Shashni, Hiroshi Maeda and Yukio Nagasaki, Fibrinolytic Tissue Plasminogen Activator Installed Redox-Active Nanoparticles (t-PA@iRNP) for Cancer Therapy, *Biomaterials*, 120290 (doi: 10.1016/j.biomaterials.2020.120290)
3. Arnela Mujagić, Aiki Marushima, Yukio Nagasaki, Hisayuki Hosoo, Aki Hirayama, Sandra Puentes, Toshihide Takahashi, Hideo Tsurushima, Kensuke Suzuki, Hirofumi Matsui, Eiichi Ishikawa, Yuji Matsumaru, Akira Matsumura, Antioxidant nanomedicine with cytoplasmic distribution in neuronal cells shows superior neurovascular protection properties, *Brain Research*, 146922 (doi: 10.1016/j.brainres.2020.146922)
4. Long Binh Vong, Nhu-Thuy Trinh and Yukio Nagasaki, Design of amino acid-based self-assembled nano-drugs for therapeutic applications, *Journal of Controlled Release*, Volume 326, 140-149(2020) (doi: 10.1016/j.jconrel.2020.06.009)
5. Ryotaro Ozawa, Makiko Saita, Sho Sakaue, Ryusaku Okada, Takenori Sato, Ryota Kawamata, Takashi Sakurai, Nobushiro Hamada, Katsuhiko Kimoto, Yukio Nagasaki, Redox injectable gel protects osteoblastic function against oxidative stress and suppresses alveolar bone loss in a rat peri-implantitis mode, *Acta Biomaterialia*, Volume 110, 82-94(2020) (doi: 10.1016/j.actbio.2020.04.003)
6. Long Binh Vong, Yuna Sato, Pennapa Chonpathompikunlert, Supita Tanasawet, Pilaiwanwadee Hutamekalin, Yukio Nagasaki, Self-assembled polydopamine nanoparticles improve treatment in Parkinson's disease model mice and suppress dopamine-induced dyskinesia, *Acta Biomaterialia*, Volume 109, 220-228(2020) (doi: 10.1016/j.actbio.2020.03.021)
7. Yutaka Ikeda, Naoki Inuzuka, Mitsuaki Goto, Toshihiro Akaike and Yukio Nagasaki, An anti-oxidative cell culture dish inhibits intracellular ROS accumulation and modulates pluripotency-associated gene expression in mesenchymal stem cells, *Journal of Biomedical Materials Research, Part A*, Volume 108A, 1058-1063 (doi:10.1002/jbm.a.36881)
8. Toshihide Takahashi, Aiki Marushima, Yukio Nagasaki, Aki Hirayama, Ai Muroi, Sandra Puentes, Arnela Mujagic, Eiichi Ishikawa, Akira Matsumura, Novel neuroprotection using antioxidant nanoparticles in a mouse model of head trauma, *Journal of Trauma and Acute Care Surgery*, Volume 88, No. 5, 677-685(2020) (doi: 10.1097/TA.0000000000002617).

2019

1. Long Binh Vong, Yota Ibayashi Yaloslav Lee, Dai-Nghiep Ngo, Yuji Nishikawa, Yukio Nagasaki, Poly(ornithine)-based self-assembling drug for recovery of hyperammonemia and damage in acute liver injury, *Journal of Controlled Release*, 2019 Volume 310, pp. 74-81. (doi: 10.1016/j.jconrel.2019.08.011)
2. Ting Mei, Ahram Kim, Long Binh Vong, Aiki Marushima, Sandra Puentes, Yuji Matsumaru, Akira Matsumura, Yukio Nagasaki, Encapsulation of tissue plasminogen activator in pH-sensitive self-assembled antioxidant nanoparticles for ischemic stroke treatment, – Synergistic effect of thrombolysis and antioxidant–, *Biomaterials* Vol. 215, 119-209(2019) (doi: 10.1016/j.biomaterials.2019.05.020)
3. Ching-Hsiang Fan, Ta-Wei Wang, Yi-Kong Hsieh, Chu-Fang Wang, Zhenyu Gao, Ahram Kim, Yukio Nagasaki, Chih-Kuang Yeh, Enhancing Boron Uptake in Brain Glioma by Boron-

- Polymer/Microbubble Complex with Focused Ultrasound, *ACS Applied Materials & Interfaces*, Vol. 11, No.12, 11144-11156(2019) (doi: 10.1021/acsami.8b22468)
- Chitho P. Feliciano, Yukio Nagasaki, Antioxidant Nanomedicine Protects Against Ionizing Radiation-Induced Life-Shortening in C57BL/6J mice, *ACS Biomaterials Science & Engineering*, Volume 5, 5631–5636(2019) (doi: 10.1021/acsbiomaterials.8b01259).
 - Shiro Ishii, Shou Sakaue, Yukio Nagasaki, Redox-active injectable gel using polyion complex to achieve sustained release of exenatide and enhance therapeutic efficacy for the treatment of type 2 diabetes, *Journal of Biomedical Materials Research: Part A*, Volume 107A, pp.1107-1113(2019) (doi: 10.1002/jbm.a.36647).

2018

- Babita Shashuni, Yukio Nagasaki, Nitroxide radical-containing nanoparticles attenuate tumorigenic potential of triple negative breast cancer, *Biomaterials*, Volume 178, 48-62(2018) (doi: 10.1016/j.biomaterials.2018.05.042)
- Keisuke Motone, Toshiyuki Takagi, Shunsuke Aburaya, Wataru Aoki, Natsuko Miura, Hiroyoshi Minakuchi, Haruko Takeyama, Yukio Nagasaki, Chuya Shinzato, Mitsuyoshi Ueda, Redox nanoparticle prevents coral larvae from heat stress mortality as a potential use for coral reef protection, *Marine Biotechnology*, August 2018, Volume 20, Issue 4, pp 542–548(2018) (doi: 10.1007/s10126-018-9825-5).
- Yutaka Ikeda, Yukio Nagasaki, Antioxidative biointerface: Biocompatible materials scavenging reactive oxygen species, *Biomedical Materials*, (Review), Volume 13, No.4, 044103(2018) (doi.org/10.1088/1748-605X/aab720).
- Yukio Nagasaki, Design and Application of Redox Polymers for Nanomedicine, *Polymer Journal*, (Review), Volume 50, No. 9, 821-836(2018). (10.1038/s41428-018-0054-6) (高分子学会賞受賞論文)
- Long Binh Vong, Thang Q Bui, Tsutomu Tomita, Hiroki Sakamoto, Yuji Hiramatsu, Yukio Nagasaki, Novel Angiogenesis Therapeutics by Redox Injectable Hydrogel - Regulation of Local Nitric Oxide Generation for Effective Cardiovascular Therapy, *Biomaterials*, Vol. 167, 143-152(2018) (doi: 10.1016/j.biomaterials.2018.03.023)
- Yutaka Ikeda, Kazuhiro Shoji, Chitho Feliciano, Shinji Saito, Yukio Nagasaki, Antioxidative nanoparticles significantly enhance therapeutic efficacy of an antibacterial therapy against *Listeria monocytogenes* infection, *Molecular Pharmaceutics*, 15 (3), pp 1126–1132(2018) (doi: 10.1021/acs.molpharmaceut.7b00995).
- Tomohiro Ueda; Kazuhiro Katada; Takaya Iida; Katsura Mizushima; Osamu Dohi; Tetsuya Okayama; Naohisa Yoshida; Kazuhiro Kamada; Kazuhiko Uchiyama; Osamu Handa; Takeshi Ishikawa; Yuji Naito; Yukio Nagasaki; Yoshito Itoh, The protective effect of orally administered redox nanoparticle on intestinal ischemia-reperfusion injury in mice, *Biochemical and Biophysical Research Communications*, Volume 495, Issue 2, 2044-2049(2018) (doi: 10.1016/j.bbrc.2017.11.204)

2017

- Hiroshi Asanuma, Shoji Sanada, Toru Yoshitomi, Hideyuki Sasaki, Hiroyuki Takahama, Madoka Ihara, Yoshiro Shinozak, Hidezo Mori, Masanori Asakura, Atsushi Nakano, Masaru Sugimach, Yoshihiro Asan3, Tetsuo Minamino, Seiji Takashima, Yukio Nagasaki, Masafumi Kitakaze, Novel Synthesized Radical-Containing Nanoparticles Limits Infarct Size Following Ischemia and Reperfusion in Canine Hearts – Role of Nitric Oxide, *Cardiovascular Drugs and Therapy*, Volume 31, 501–510(2017) (doi: 10.1007/s10557-017-6758-6).

2. Chitho P. Feliciano, Yukio Nagasaki, Oral Nanotherapeutics: Redox Nanoparticles Attenuate Ultraviolet B Radiation-Induced Skin Inflammatory Disorders in Kud: Hr- Hairless Mice, *Biomaterials*, Volume 142, 162-170(2017), (doi: 10.1016/j.biomaterials.2017.07.01).
3. Long Binh Vong, Shinya Kimura, Yukio Nagasaki, Newly designed silica-containing redox nanoparticles for oral delivery of novel TOP2 catalytic inhibitor for treating colon cancer, *Advanced Healthcare Materials*, Vol.6, 1700428(2017) (0.1002/adhm.201700428)
4. Hisayuki Hosoo, Aiki Marushima, Yukio Nagasaki, Aki Hirayama, Hiromu Ito, Sandra Puentes, Arnela Mujagic, Hideo Tsurushima, Wataro Tsuruta, Kensuke Suzuki, Hirofumi Matsui, Yuji Matsumaru, Tetsuya Yamamoto, Akira Matsumura, Neurovascular unit protection from cerebral ischemia-reperfusion injury by radical-containing nanoparticles in mice, *Stroke*, Vol. 48, 2238-2247(2017) (doi:10.1161/STROKEAHA.116.016356).
5. Phetcharat Boonruamkaew, Pennapa Chonpathompikunlert, Long Binh Vong, Sho Sakaue, Yasushi Tomidokoro, Kazuhiro Ishii, Akira Tamaoka, Yukio Nagasaki, Chronic treatment with a smart antioxidative nanoparticle for inhibition of amyloid plaque propagation in Tg2576 mouse model of Alzheimer's disease, *Scientific Reports*, Volume 7, Article Number 3785, pp.1-13 (2017) (10.1038/s41598-017-03411-7)
6. Yukio Nagasaki, Yutaro Mizukoshi, Zhenyu Gao, Chitho P. Feliciano, Kyungho Chang, Hiroshi Sekiyama, Hiroyuki Kimura, Development of a Local Anesthetic Lidocaine-loaded Redox-active Injectable Gel for Postoperative Pain Management, *Acta Biomaterialia*, Volume 57, 127-135(2017) (10.1016/j.actbio.2017.04.031).
7. Babita Shashni, Yukichi Horiguchi, Kosuke Kurosu, Hitoshi Furusho, Yukio Nagasaki, Application of Surface Enhanced Raman Spectroscopy as a Diagnostic System for Hypersialylated Metastatic Cancers, *Biomaterials*, Volume 134, 143-153 (2017) (10.1016/j.biomaterials.2017.04.038).
8. Kanako Shiota, Susumu Hama, Toru Yoshitomi, Yukio Nagasaki, Kentaro Kogure, Prevention of UV-induced Melanin Production by Accumulation of Redox Nanoparticles in the Epidermal Layer via Iontophoresis, *Biological & Pharmaceutical Bulletin*, Note, Volume 40, 941-944(2017) (doi: 10.1248/bpb.b17-00155)
9. Chitho P. Feliciano, Koji Tsuboi, Kenshi Suzuki, Hiroyuki Kimura, Yukio Nagasaki, Long-term bioavailability of redox nanoparticles effectively reduces organ dysfunctions, *Biomaterials*, Volume 129, pp.68-82. (10.1016/j.biomaterials.2017.03.011)
10. Babita Shashni, Abdulaziz Alshwimi, Kentaro Minami, Tatsuhiko Furukawa, Yukio Nagasaki, Nitroxide radical-containing nanoparticles as potential candidates for overcoming drug resistance in epidermoid cancers, *Polymer*, Volume 116, pp.429-438(10.1016/j.polymer.2017.02.052).
11. Zhenyu Gao, Yusuke Nakanishi, Shoko Noda, Haruka Omachi, Hisanori Shinohara, Yukio Nagasaki, Development of Gd₃N@C80 encapsulated redox nanoparticles for high-performance magnetic resonance imaging, *Journal of Biomaterials Science: Polymer Edition*, Vol.28, No.10-12, 1036-1050(2017) (10.1080/09205063.2017.1288774).

2016

- 1 Long Binh Vong, Makoto Kobayashi, Yukio Nagasaki, Evaluation of the Toxicity and Antioxidant Activity of Redox Nanoparticles in Zebrafish (*Danio rerio*) Embryos, *Molecular Pharmaceutics*, Volume 13, No. 9, pp 3091–3097(2016) (doi: 10.1021/acs.molpharmaceut.6b00225)
- 2 Zhenyu Gao, Yukichi Horiguchi, Kei Nakai, Akira Matsumura, Minoru Suzuki, Koji Ono, Yukio Nagasaki, Boron-Cluster-containing Redox Nanoparticles with ROS Scavenging Ability for Use in Boron Neutron Capture Therapy, Leading to High Therapeutic Efficiency and Low Adverse Effects, *Biomaterials*, Volume 104, page 201-212(2016). (10.1016/j.biomaterials.2016.06.046)
- 3 Yutaka Ikeda, Hikaru Hisano, Yuji Nishikawa, Yukio Nagasaki, Targeting and treatment of tumor hypoxia by newly designed prodrug possessing high permeability in solid tumors, *Molecular*

Pharmaceutics, Volume13, No.7, pp 2283–2289(2016) (doi: 10.1021/acs.molpharmaceut.6b00011).

- 4 Sindhu Thangavel, Toru Yoshitomi, Meena Kishore Sakharkar, Yukio Nagasaki, Redox nanoparticle increases the chemotherapeutic efficiency of pioglitazone and suppresses its toxic side effects, *Biomaterials*, Volume 99, page 109-123(2016). (doi: 10.1016/j.biomaterials.2016.05.001)
- 5 Yutaka Ikeda, Tomoki Yoshinari, Hirotohi Miyoshi, Yukio Nagasaki, Design of antioxidative biointerface for separation of hematopoietic stem cells with high maintenance of undifferentiated phenotype, *Journal of Biomedical Materials Research: Part A*, Volume 104A, Issue 8, 2080-2085(2016) (doi: 10.1002/jbm.a.35740)
- 6 Phetcharat Boonruamkaew, Pennapa Chonpathompikunlert, Yukio Nagasaki, Redox nanoparticle therapeutics for acetaminophen-induced hepatotoxicity in mice, *Special issue of "Harmful and Beneficial Role of ROS", Oxidative Medicine and Cellular Longevity*, Volume 2016, Article ID 4984597(2016) (doi:10.1155/2016/4984597)
- 7 Long Binh Vong, Yukio Nagasaki, Combination treatment of murine colon cancer with doxorubicin and redox nanoparticles, *Molecular Pharmaceutics*, 13 (2), pp 449–455(2016). (doi: 10.1021/acs.molpharmaceut.5b00676)
- 8 Shiro Ishii, Junya Kaneko, Yukio Nagasaki, Development of a long-acting, protein-loaded, redox-active, injectable gel formed by a polyion complex for local protein therapeutics, *Biomaterials*, Volume 84, page 210-218(2016) (doi: 10.1016/j.biomaterials.2016.01.029)
- 9 Makiko Saita, Junya Kaneko, Takenori Sato, Shun-suke Takahashi, Satoko Wada-Takahashi, Ryota Kawamata, Takashi Sakura, Masaichi-Chang-il Lee, Nobushiro Hamada, Katsuhiko Kimoto, Yukio Nagasaki, Novel antioxidative nanotherapeutics in a rat periodontitis model: Reactive oxygen species scavenging by redox injectable gel suppresses alveolar bone resorption, *Biomaterials*, Volume 76, Pages 292-301(2016) (doi: 10.1016/j.biomaterials.2015.10.077).

2015

- 10 Shinpei Kudo, Yukio Nagasaki, A Novel Nitric Oxide-based Anticancer therapeutics by Macrophage-targeted Poly(L-Arginine)-based Nanoparticles, *Journal of Controlled Release*, Vol. 217, 256–262(2015) (doi: 10.1016/j.jconrel.2015.09.019)
- 11 Sinpei Kudo, Yukio Nasaki, Facile and Quantitative Synthesis of a Poly(Ethylene Glycol)-b-Poly(L-Arginine) Block Copolymer and Its Use for the Preparation of Polyion Complex Micelles with Polyanions for Biomedical Applications, *Macromolecular Rapid Communications*, Volume 36, Issue 21, November 2015, Pages: 1916–1922 (doi: 10.1002/marc.201500224).
- 12 Long Binh Vong, John Mo, Bertil Abrahamsson and Yukio Nagasaki, Specific accumulation of orally administered redox nanotherapeutics in the inflamed colon reducing inflammation with dose-response efficacy, *Journal of Controlled Release*, Volume 210, 28 July 2015, Pages 19-25 (doi: 10.1016/j.jconrel.2015.05.275).
- 13 Akiko Eguchi, Toru Yoshitomi, Milos Lazic, Casey D. Johnson, Long Binh Vong, Alexander Wree, Davide Povero, Bettina G. Papouchado, Yukio Nagasaki, Ariel E. Feldstein, Redox nanoparticles as a novel treatment approach for inflammation and fibrosis associated with nonalcoholic steatohepatitis, *Nanomedicine*, Vol. 10, No. 17, Pages 2697-2708.(2015) (doi: 10.2217/nnm.15.87)
- 14 Sindhu Thangavel, Toru Yoshitomi, Meena Kishore Sakharkar and Yukio Nagasaki, Redox nanoparticles inhibit curcumin oxidative degradation and enhance its therapeutic effect on prostate cancer, *Journal of Controlled Release*, Volume 209, 10 July 2015, Pages 110-119 (doi: 10.1016/j.jconrel.2015.04.025)
- 15 Hiroyuki Nakagawa, Yoko Matsumoto, Yu Matsumoto, Yoshihiro Miwa, Yukio Nagasaki, Design of high-performance anti-adhesion agent using injectable gel with an anti-oxidative stress function, *Biomaterials*, Vol. 69,165-173 (2015) (doi: 10.1016/j.biomaterials.2015.08.018).

- 16 Shiro Ishii, Junya Kaneko, and Yukio Nagasaki, Dual stimuli-responsive redox-active injectable gel by polyion complex based flower micelles for biomedical applications, *Macromolecules*, 2015, 48, 3088–3094 (doi: 10.1021/acs.macromol.5b00305).
- 17 M. Bednarowicz, B. Dobosz, R. Krzymiński, M. Hałupka-Bryl, Y. Nagasaki, ESR Studies of Redox-Active PMNT-PEG-PMNT Polymer, *Materials Chemistry and Physics*, Volume 161, 1 July 2015, Pages 250-255 (doi: 10.1016/j.matchemphys.2015.05.045).
- 18 Pennapa Chonpathompikunlert, Toru Yoshitomi, Long Binh Vong, Natsuka Imaizumi, Yuki Ozaki, Yukio Nagasaki, Recovery of Cognitive Dysfunction via Orally Administered Redox-polymer Nanotherapeutics in SAMP8 mice, *PLoS ONE*, 10(5): e0126013 (2015). (doi: 10.1371/journal.pone.0126013).
- 19 Long Binh Vong, Toru Yoshitomi, Hirofumi Matsui, and Yukio Nagasaki, Development of an oral nanotherapeutics using redox nanoparticles for treatment of colitis-associated colon cancer, *Biomaterials*, Vol. 55, 54-63 (2015) (doi: 10.1016/j.biomaterials.2015.03.037).
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