

References

References

- [1] A. Pandey, S. Kulkarni, A.P. Vincent, S.H. Nannuri, S.D. George, S. Mutalik, Hyaluronic acid-drug conjugate modified core-shell MOFs as pH responsive nanopatform for multimodal therapy of glioblastoma, *Int. J. Pharm.* 588 (2020) 119735.
- [2] E. Alimohammadi, R. Maleki, H. Akbarialiabad, M. Dahri, Novel pH-responsive nanohybrid for simultaneous delivery of doxorubicin and paclitaxel: an in-silico insight, *BMC Chem.* 15 (2021). <https://doi.org/10.1186/s13065-021-00735-4>.
- [3] S. Manchun, C.R. Dass, K. Cheewatanakornkool, P. Srimornsak, Enhanced anti-tumor effect of pH-responsive dextrin nanogels delivering doxorubicin on colorectal cancer, *Carbohydr. Polym.* 126 (2015) 222–230. <https://doi.org/10.1016/j.carbpol.2015.03.018>.
- [4] E. Jalalvandi, A. Shavandi, In situ-forming and pH-responsive hydrogel based on chitosan for vaginal delivery of therapeutic agents, *J. Mater. Sci. Mater. Med.* 29 (2018) 1–11.
- [5] H. Palacio, F. Otálvaro, L.F. Giraldo, G. Ponchel, F. Segura-Sánchez, Chitosan-Acrylic Polymeric Nanoparticles with Dynamic Covalent Bonds. Synthesis and Stimuli Behavior, *Chem. Pharm. Bull. (Tokyo)* 65 (2017) 1132–1143. <https://doi.org/10.1248/cpb.c17-00624>.
- [6] L. Qiu, W. Zhang, S. Wang, X. Zhang, Y. Zhao, L. Cao, L. Sun, Construction of multifunctional porous silica nanocarriers for pH/enzyme-responsive drug release, *Mater. Sci. Eng. C* 81 (2017) 485–491. <https://doi.org/10.1016/j.msec.2017.08.029>.

- [7] Z. Zou, D. He, X. He, K. Wang, X. Yang, Z. Qing, Q. Zhou, Natural gelatin capped mesoporous silica nanoparticles for intracellular acid-triggered drug delivery, *Langmuir* 29 (2013) 12804–12810.
- [8] K. Cheewatanakornkool, S. Niratisai, S. Manchun, C.R. Dass, P. Sriamornsak, Characterization and in vitro release studies of oral microbeads containing thiolated pectin–doxorubicin conjugates for colorectal cancer treatment, *Asian J. Pharm. Sci.* 12 (2017) 509–520. <https://doi.org/10.1016/j.ajps.2017.07.005>.
- [9] S.G. Kim, A.I. Robby, B.C. Lee, G. Lee, S.Y. Park, Mitochondria-targeted ROS- and GSH-responsive diselenide-crosslinked polymer dots for programmable paclitaxel release, *J. Ind. Eng. Chem.* 99 (2021) 98–106. <https://doi.org/10.1016/j.jiec.2021.04.016>.
- [10] Y.-S. Kim, S. Kim, H.C. Kang, M.S. Shim, ROS-responsive thioether-based nanocarriers for efficient pro-oxidant cancer therapy, *J. Ind. Eng. Chem.* 75 (2019) 238–245. <https://doi.org/10.1016/j.jiec.2019.03.030>.
- [11] B. Liu, S. Thayumanavan, Mechanistic Investigation on Oxidative Degradation of ROS-Responsive Thioacetal/Thioketal Moieties and Their Implications, *Cell Rep. Phys. Sci.* 1 (2020) 100271. <https://doi.org/10.1016/j.xcrp.2020.100271>.
- [12] S. Uthaman, S. Pillarisetti, A.P. Mathew, Y. Kim, W.K. Bae, K.M. Huh, I.-K. Park, Long circulating photoactivable nanomicelles with tumor localized activation and ROS triggered self-accelerating drug release for enhanced locoregional chemophotodynamic therapy, *Biomaterials* 232 (2020) 119702. <https://doi.org/10.1016/j.biomaterials.2019.119702>.

- [13] R. Ghaffari, N. Eslahi, E. Tamjid, A. Simchi, Dual-sensitive hydrogel nanoparticles based on conjugated thermoresponsive copolymers and protein filaments for triggerable drug delivery, *ACS Appl. Mater. Interfaces* 10 (2018) 19336–19346.
- [14] D. Jia, X. Ma, Y. Lu, X. Li, S. Hou, Y. Gao, P. Xue, Y. Kang, Z. Xu, ROS-responsive cyclodextrin nanoplatform for combined photodynamic therapy and chemotherapy of cancer, *Chin. Chem. Lett.* 32 (2021) 162–167. <https://doi.org/10.1016/j.ccllet.2020.11.052>.
- [15] X. Ding, W. Yu, Y. Wan, M. Yang, C. Hua, N. Peng, Y. Liu, A pH/ROS-responsive, tumor-targeted drug delivery system based on carboxymethyl chitin gated hollow mesoporous silica nanoparticles for anti-tumor chemotherapy, *Carbohydr. Polym.* 245 (2020) 116493. <https://doi.org/10.1016/j.carbpol.2020.116493>.
- [16] X. Yang, X. Shi, Y. Zhang, J. Xu, J. Ji, L. Ye, F. Yi, G. Zhai, Photo-triggered self-destructive ROS-responsive nanoparticles of high paclitaxel/chlorin e6 co-loading capacity for synergetic chemo-photodynamic therapy, *J. Controlled Release* 323 (2020) 333–349. <https://doi.org/10.1016/j.jconrel.2020.04.027>.
- [17] H. Xu, ROS responsive selenium-containing polymers, *Nanomedicine Nanotechnol. Biol. Med.* 12 (2016) 465. <https://doi.org/10.1016/j.nano.2015.12.057>.
- [18] R. Fang, H. Xu, W. Cao, L. Yang, X. Zhang, Reactive oxygen species (ROS)-responsive tellurium-containing hyperbranched polymer, *Polym. Chem.* 6 (2015) 2817–2821. <https://doi.org/10.1039/C5PY00050E>.
- [19] Y. Na, J. Woo, W.I. Choi, D. Sung, Novel carboxylated ferrocene polymer nanocapsule with high reactive oxygen species sensitivity and on-demand drug release for effective cancer therapy, *Colloids Surf. B Biointerfaces* 200 (2021) 111566. <https://doi.org/10.1016/j.colsurfb.2021.111566>.

- [20] G. Saravanakumar, J. Kim, W.J. Kim, Reactive-Oxygen-Species-Responsive Drug Delivery Systems: Promises and Challenges, *Adv. Sci.* 4 (2016). <https://doi.org/10.1002/advs.201600124>.
- [21] X. Hou, H. Lin, X. Zhou, Z. Cheng, Y. Li, X. Liu, F. Zhao, Y. Zhu, P. Zhang, D. Chen, Novel dual ROS-sensitive and CD44 receptor targeting nanomicelles based on oligomeric hyaluronic acid for the efficient therapy of atherosclerosis, *Carbohydr. Polym.* 232 (2020) 115787. <https://doi.org/10.1016/j.carbpol.2019.115787>.
- [22] Z.-T. Zhang, M.-Y. Huang-Fu, W.-H. Xu, M. Han, Stimulus-responsive nanoscale delivery systems triggered by the enzymes in the tumor microenvironment, *Eur. J. Pharm. Biopharm.* 137 (2019) 122–130. <https://doi.org/10.1016/j.ejpb.2019.02.009>.
- [23] Y. Huang, Y. Shi, Q. Wang, T. Qi, X. Fu, Z. Gu, Y. Zhang, G. Zhai, X. Zhao, Q. Sun, G. Lin, Enzyme responsiveness enhances the specificity and effectiveness of nanoparticles for the treatment of B16F10 melanoma, *J. Controlled Release* 316 (2019) 208–222. <https://doi.org/10.1016/j.jconrel.2019.10.052>.
- [24] C. Liu, Z. Chen, Z. Wang, W. Li, E. Ju, Z. Yan, Z. Liu, J. Ren, X. Qu, A graphitic hollow carbon nitride nanosphere as a novel photochemical internalization agent for targeted and stimuli-responsive cancer therapy, *Nanoscale* 8 (2016) 12570–12578. <https://doi.org/10.1039/C5NR07719B>.
- [25] P. Xue, K.K.Y. Cheong, Y. Wu, Y. Kang, An in-vitro study of enzyme-responsive Prussian blue nanoparticles for combined tumor chemotherapy and photothermal therapy, *Colloids Surf. B Biointerfaces* 125 (2015) 277–283. <https://doi.org/10.1016/j.colsurfb.2014.10.059>.

- [26] A. Tachibana, D. Yasuma, R. Takahashi, T. Tanabe, Chitin degradation enzyme-responsive system for controlled release of fibroblast growth factor-2, *J. Biosci. Bioeng.* 129 (2020) 116–120. <https://doi.org/10.1016/j.jbiosc.2019.07.002>.
- [27] X. Gao, Z. Yu, B. Liu, J. Yang, X. Yang, Y. Yu, A smart drug delivery system responsive to pH/enzyme stimuli based on hydrophobic modified sodium alginate, *Eur. Polym. J.* 133 (2020) 109779. <https://doi.org/10.1016/j.eurpolymj.2020.109779>.
- [28] L. Wu, B. Lin, H. Yang, J. Chen, Z. Mao, W. Wang, C. Gao, Enzyme-responsive multifunctional peptide coating of gold nanorods improves tumor targeting and photothermal therapy efficacy, *Acta Biomater.* 86 (2019) 363–372. <https://doi.org/10.1016/j.actbio.2019.01.026>.
- [29] C. Zhang, D. Pan, J. Li, J. Hu, A. Bains, N. Guys, H. Zhu, X. Li, K. Luo, Q. Gong, Z. Gu, Enzyme-responsive peptide dendrimer-gemcitabine conjugate as a controlled-release drug delivery vehicle with enhanced antitumor efficacy, *Acta Biomater.* 55 (2017) 153–162. <https://doi.org/10.1016/j.actbio.2017.02.047>.
- [30] Y. Li, J. Jeon, J.H. Park, Hypoxia-responsive nanoparticles for tumor-targeted drug delivery, *Cancer Lett.* 490 (2020) 31–43. <https://doi.org/10.1016/j.canlet.2020.05.032>.
- [31] X. Li, J. Wang, R. Cui, D. Xu, L. Zhu, Z. Li, H. Chen, Y. Gao, L. Jia, Hypoxia/pH dual-responsive nitroimidazole-modified chitosan/rose bengal derivative nanoparticles for enhanced photodynamic anticancer therapy, *Dyes Pigments* 179 (2020) 108395. <https://doi.org/10.1016/j.dyepig.2020.108395>.
- [32] E.H. Jang, M.K. Shim, G.L. Kim, S. Kim, H. Kang, J.-H. Kim, Hypoxia-responsive folic acid conjugated glycol chitosan nanoparticle for enhanced tumor targeting treatment, *Int. J. Pharm.* 580 (2020) 119237. <https://doi.org/10.1016/j.ijpharm.2020.119237>.

- [33] T. Thambi, V.G. Deepagan, H.Y. Yoon, H.S. Han, S.-H. Kim, S. Son, D.-G. Jo, C.-H. Ahn, Y.D. Suh, K. Kim, I. Chan Kwon, D.S. Lee, J.H. Park, Hypoxia-responsive polymeric nanoparticles for tumor-targeted drug delivery, *Biomaterials* 35 (2014) 1735–1743. <https://doi.org/10.1016/j.biomaterials.2013.11.022>.
- [34] L.E. Gerweck, K. Seetharaman, Cellular pH Gradient in Tumor versus Normal Tissue: Potential Exploitation for the Treatment of Cancer, *Cancer Res.* 56 (1996) 1194–1198. <https://cancerres.aacrjournals.org/content/56/6/1194> (accessed May 20, 2021).
- [35] K. Gou, W. Xin, J. Lv, Z. Ma, J. Yang, L. Zhao, Y. Cheng, X. Chen, R. Zeng, H. Li, A pH-responsive chiral mesoporous silica nanoparticles for delivery of doxorubicin in tumor-targeted therapy, *Colloids Surf. B Biointerfaces* 221 (2023) 113027. <https://www.sciencedirect.com/science/article/pii/S0927776522007111> (accessed December 6, 2023).
- [36] L. Yin, W. Duan, Y. Chen, D. Chen, Y. Wang, S. Guo, J. Qin, Biodegradable hydrogel from pectin and carboxymethyl cellulose with Silibinin loading for lung tumor therapy, *Int. J. Biol. Macromol.* 243 (2023) 125128. <https://doi.org/10.1016/j.ijbiomac.2023.125128>.
- [37] A. Sayed, A. F Mahmoud, A.M. Aly, K. Emad, G.A. Mahmoud, Design of carrageenan based nanocarrier as a drug nanocarrier for tumor targeting: Radiolabeling and biodistribution, *J. Drug Deliv. Sci. Technol.* 85 (2023) 104573. <https://doi.org/10.1016/j.jddst.2023.104573>.
- [38] Y. Li, X. Sun, Y. Yang, X. Wei, Y. Liu, H. Jia, W. Liu, Bilirubin-based ROS responsive hydrophobicity/hydrophilicity switchable hybrid vector for gene delivery, *Materialia* (2021) 101115. <https://doi.org/10.1016/j.mtla.2021.101115>.

- [39] W. Wan, C. Qu, Y. Zhou, L. Zhang, M. Chen, Y. Liu, B. You, F. Li, D. Wang, X. Zhang, Doxorubicin and siRNA-PD-L1 co-delivery with T7 modified ROS-sensitive nanoparticles for tumor chemoimmunotherapy, *Int. J. Pharm.* 566 (2019) 731–744. <https://doi.org/10.1016/j.ijpharm.2019.06.030>.
- [40] X. Zhou, P. Zhang, N. Liu, X. Zhang, H. Lv, W. Xu, M. Huo, Enhancing chemotherapy for pancreatic cancer through efficient and sustained tumor microenvironment remodeling with a fibroblast-targeted nanosystem, *J. Controlled Release* 361 (2023) 161–177. <https://doi.org/10.1016/j.jconrel.2023.07.061>.
- [41] G. Geyik, E. Güncüm, N. Işıklan, Design and development of pH-responsive alginate-based nanogel carriers for etoposide delivery, *Int. J. Biol. Macromol.* 250 (2023) 126242. <https://doi.org/10.1016/j.ijbiomac.2023.126242>.
- [42] D. Li, X. Wang, K. Han, Y. Sun, T. Ren, G. Sun, N. Zhang, L. Zhao, R. Zhong, Hypoxia and CD44 receptors dual-targeted nano-micelles with AGT-inhibitory activity for the targeting delivery of carmustine, *Int. J. Biol. Macromol.* 246 (2023) 125657. <https://doi.org/10.1016/j.ijbiomac.2023.125657>.
- [43] P. Song, B. Wang, Q. Pan, T. Jiang, X. Chen, M. Zhang, J. Tao, X. Zhao, GE11-modified carboxymethyl chitosan micelles to deliver DOX·PD-L1 siRNA complex for combination of ICD and immune escape inhibition against tumor, *Carbohydr. Polym.* 312 (2023) 120837. <https://doi.org/10.1016/j.carbpol.2023.120837>.
- [44] L. Zhong, L. Xu, Y. Liu, Q. Li, D. Zhao, Z. Li, H. Zhang, H. Zhang, Q. Kan, Y. Wang, J. Sun, Z. He, Transformative hyaluronic acid-based active targeting supramolecular nanoplatform improves long circulation and enhances cellular uptake in cancer therapy, *Acta Pharm. Sin. B* 9 (2019) 397–409. <https://doi.org/10.1016/j.apsb.2018.11.006>.

- [45] L. Lin, W. Xu, H. Liang, L. He, S. Liu, Y. Li, B. Li, Y. Chen, Construction of pH-sensitive lysozyme/pectin nanogel for tumor methotrexate delivery, *Colloids Surf. B Biointerfaces* 126 (2015) 459–466. <https://doi.org/10.1016/j.colsurfb.2014.12.051>.
- [46] G. Liu, H. Tsai, X. Zeng, Y. Zuo, W. Tao, J. Han, L. Mei, Phosphorylcholine-based stealthy nanocapsules enabling tumor microenvironment-responsive doxorubicin release for tumor suppression, *Theranostics* 7 (2017) 1192.
- [47] L. Tan, R. Huang, X. Li, S. Liu, Y.-M. Shen, Z. Shao, Chitosan-based core-shell nanomaterials for pH-triggered release of anticancer drug and near-infrared bioimaging, *Carbohydr. Polym.* 157 (2017) 325–334. <https://doi.org/10.1016/j.carbpol.2016.09.092>.
- [48] H.-J. Li, J.-Z. Du, X.-J. Du, C.-F. Xu, C.-Y. Sun, H.-X. Wang, Z.-T. Cao, X.-Z. Yang, Y.-H. Zhu, S. Nie, J. Wang, Stimuli-responsive clustered nanoparticles for improved tumor penetration and therapeutic efficacy, *Proc. Natl. Acad. Sci.* 113 (2016) 4164–4169.
- [49] J. Liu, S. Iqbal, X.-J. Du, Y. Yuan, X. Yang, H.-J. Li, J. Wang, Ultrafast charge-conversional nanocarrier for tumor-acidity-activated targeted drug delivery, *Biomater. Sci.* 6 (2018) 350–355. <https://doi.org/10.1039/C7BM01025G>.
- [50] J. Zhu, T. Xiao, J. Zhang, H. Che, Y. Shi, X. Shi, J.C.M. van Hest, Surface-Charge-Switchable Nanoclusters for Magnetic Resonance Imaging-Guided and Glutathione Depletion-Enhanced Photodynamic Therapy, *ACS Nano* 14 (2020) 11225–11237. <https://doi.org/10.1021/acsnano.0c03080>.
- [51] Z. Guo, J. Sui, M. Ma, J. Hu, Y. Sun, L. Yang, Y. Fan, X. Zhang, pH-Responsive charge switchable PEGylated ϵ -poly-l-lysine polymeric nanoparticles-assisted

- combination therapy for improving breast cancer treatment, *J. Controlled Release* 326 (2020) 350–364.
- [52] X. Li, H. Li, C. Zhang, A. Pich, L. Xing, X. Shi, Intelligent nanogels with self-adaptive responsiveness for improved tumor drug delivery and augmented chemotherapy, *Bioact. Mater.* 6 (2021) 3473–3484. <https://doi.org/10.1016/j.bioactmat.2021.03.021>.
- [53] J. Li, C. Sun, W. Tao, Z. Cao, H. Qian, X. Yang, J. Wang, Photoinduced PEG deshielding from ROS-sensitive linkage-bridged block copolymer-based nanocarriers for on-demand drug delivery, *Biomaterials* 170 (2018) 147–155. <https://doi.org/10.1016/j.biomaterials.2018.04.015>.
- [54] L. Xu, M. Zhao, W. Gao, Y. Yang, J. Zhang, Y. Pu, B. He, Polymeric nanoparticles responsive to intracellular ROS for anticancer drug delivery, *Colloids Surf. B Biointerfaces* 181 (2019) 252–260. <https://doi.org/10.1016/j.colsurfb.2019.05.064>.
- [55] X. Li, C. Zhang, Q. Zheng, X. Shi, ROS-responsive targeting micelles for optical imaging-guided chemo-phototherapy of cancer, *Colloids Surf. B Biointerfaces* 179 (2019) 218–225. <https://doi.org/10.1016/j.colsurfb.2019.04.005>.
- [56] M.K. Viswanadh, N. Agrawal, S. Azad, A. Jha, S. Poddar, S.K. Mahto, M.S. Muthu, Novel redox-sensitive thiolated TPGS based nanoparticles for EGFR targeted lung cancer therapy, *Int. J. Pharm.* 602 (2021) 120652. <https://doi.org/10.1016/j.ijpharm.2021.120652>.
- [57] L. Luo, Y. Qi, H. Zhong, S. Jiang, H. Zhang, H. Cai, Y. Wu, Z. Gu, Q. Gong, K. Luo, GSH-sensitive polymeric prodrug: Synthesis and loading with photosensitizers as nanoscale chemo-photodynamic anti-cancer nanomedicine, *Acta Pharm. Sin. B* (2021). <https://doi.org/10.1016/j.apsb.2021.05.003>.

- [58] Q. Li, L. Zhu, R. Liu, D. Huang, X. Jin, N. Che, Z. Li, X. Qu, H. Kang, Y. Huang, Biological stimuli responsive drug carriers based on keratin for triggerable drug delivery, *J. Mater. Chem.* 22 (2012) 19964–19973. <https://doi.org/10.1039/C2JM34136K>.
- [59] Q. Truong Hoang, D. Lee, D.G. Choi, Y.-C. Kim, M.S. Shim, Efficient and selective cancer therapy using pro-oxidant drug-loaded reactive oxygen species (ROS)-responsive polypeptide micelles, *J. Ind. Eng. Chem.* 95 (2021) 101–108. <https://doi.org/10.1016/j.jiec.2020.12.009>.
- [60] Y. Xia, M. Gu, J. Wang, X. Zhang, T. Shen, X. Shi, W.-E. Yuan, Tumor microenvironment-activated, immunomodulatory nanosheets loaded with copper(II) and 5-FU for synergistic chemodynamic therapy and chemotherapy, *J. Colloid Interface Sci.* 653 (2024) 137–147. <https://doi.org/10.1016/j.jcis.2023.09.042>.
- [61] A. Jabłońska-Trypuć, M. Matejczyk, S. Rosochacki, Matrix metalloproteinases (MMPs), the main extracellular matrix (ECM) enzymes in collagen degradation, as a target for anticancer drugs, *J. Enzyme Inhib. Med. Chem.* 31 (2016) 177–183. <https://doi.org/10.3109/14756366.2016.1161620>.
- [62] S. Kaur, B. Balakrishnan, M.B. Mallia, R. Keshari, P.A. Hassan, R. Banerjee, Technetium-99m labeled core shell hyaluronate nanoparticles as tumor responsive, metastatic skeletal lesion targeted combinatorial theranostics, *Carbohydr. Polym.* 312 (2023) 120840. <https://doi.org/10.1016/j.carbpol.2023.120840>.
- [63] Q. Zhou, S. Shao, J. Wang, C. Xu, J. Xiang, Y. Piao, Z. Zhou, Q. Yu, J. Tang, X. Liu, Z. Gan, R. Mo, Z. Gu, Y. Shen, Enzyme-activatable polymer–drug conjugate augments tumour penetration and treatment efficacy, *Nat. Nanotechnol.* 14 (2019) 799–809. <https://doi.org/10.1038/s41565-019-0485-z>.

- [64] X. Li, T. Tang, Y. Zhou, Y. Zhang, Y. Sun, Applicability of enzyme-responsive mesoporous silica supports capped with bridged silsesquioxane for colon-specific drug delivery, *Microporous Mesoporous Mater.* 184 (2014) 83–89. <https://doi.org/10.1016/j.micromeso.2013.09.024>.
- [65] Y. Wang, Y. Cui, Y. Zhao, B. He, X. Shi, D. Di, Q. Zhang, S. Wang, Fluorescent carbon dot-gated multifunctional mesoporous silica nanocarriers for redox/enzyme dual-responsive targeted and controlled drug delivery and real-time bioimaging, *Eur. J. Pharm. Biopharm.* 117 (2017) 105–115. <https://doi.org/10.1016/j.ejpb.2017.03.019>.
- [66] B. Kumar, S. Kulanthaivel, A. Mondal, S. Mishra, B. Banerjee, A. Bhaumik, I. Banerjee, S. Giri, Mesoporous silica nanoparticle based enzyme responsive system for colon specific drug delivery through guar gum capping, *Colloids Surf. B Biointerfaces* 150 (2017) 352–361. <https://doi.org/10.1016/j.colsurfb.2016.10.049>.
- [67] G. Zhong, L. Wang, H. Jin, X. Li, D. Zhou, G. Wang, R. Lian, P. Xie, S. Zhang, L. Zheng, X. Qu, S. Shen, M.-A. Shahbazi, L. Xiao, K. Li, J. Gao, Y. Li, Tumor-microenvironment double-responsive shrinkable nanoparticles fabricated via facile assembly of laponite with a bioactive oligosaccharide for anticancer therapy, *J. Drug Deliv. Sci. Technol.* 82 (2023) 104344. <https://doi.org/10.1016/j.jddst.2023.104344>.
- [68] J. Park, J.S. Kim, G. Yang, H. Lee, G. Shim, J. Lee, Y.-K. Oh, Lysyl oxidase-responsive anchoring nanoparticles for modulation of the tumor immune microenvironment, *J. Controlled Release* 360 (2023) 376–391. <https://doi.org/10.1016/j.jconrel.2023.06.041>.
- [69] S. Son, N.V. Rao, H. Ko, S. Shin, J. Jeon, H.S. Han, V.Q. Nguyen, T. Thambi, Y.D. Suh, J.H. Park, Carboxymethyl dextran-based hypoxia-responsive nanoparticles for

-
- doxorubicin delivery, *Int. J. Biol. Macromol.* 110 (2018) 399–405.
<https://doi.org/10.1016/j.ijbiomac.2017.11.048>.
- [70] S. Peng, B. Ouyang, Y. Xin, W. Zhao, S. Shen, M. Zhan, L. Lu, Hypoxia-degradable and long-circulating zwitterionic phosphorylcholine-based nanogel for enhanced tumor drug delivery, *Acta Pharm. Sin. B* 11 (2021) 560–571.
<https://doi.org/10.1016/j.apsb.2020.08.012>.
- [71] Y. Zeng, G. Song, S. Zhang, S. Li, T. Meng, H. Yuan, F. Hu, GSH-Responsive Polymeric Micelles for Remodeling the Tumor Microenvironment to Improve Chemotherapy and Inhibit Metastasis in Breast Cancer, *Biomacromolecules* 24 (2023) 4731–4742. <https://doi.org/10.1021/acs.biomac.3c00523>.
- [72] Y. Bu, H. Wang, T. Wu, X. Chen, S. Zhao, H. Yan, Q. Lin, Development and evaluation of redox-responsive alginate–SS–ibuprofen derivative based anti-tumor target drug delivery system for the controlled release of doxorubicin, *J. Drug Deliv. Sci. Technol.* 91 (2024) 105208. <https://doi.org/10.1016/j.jddst.2023.105208>.
- [73] M. Li, Y. Zhao, J. Sun, H. Chen, Z. Liu, K. Lin, P. Ma, W. Zhang, Y. Zhen, S. Zhang, S. Zhang, pH/reduction dual-responsive hyaluronic acid-podophyllotoxin prodrug micelles for tumor targeted delivery, *Carbohydr. Polym.* 288 (2022) 119402. <https://doi.org/10.1016/j.carbpol.2022.119402>.
- [74] L. Dai, X. Li, X. Zheng, Z. Fu, M. Yao, S. Meng, J. Zhang, B. Han, Q. Gao, J. Chang, K. Cai, H. Yang, TGF- β blockade-improved chemo-immunotherapy with pH/ROS cascade-responsive micelle via tumor microenvironment remodeling, *Biomaterials* 276 (2021) 121010. <https://doi.org/10.1016/j.biomaterials.2021.121010>.
- [75] S. Wang, L. Zhang, C. Dong, L. Su, H. Wang, J. Chang, Smart pH-responsive upconversion nanoparticles for enhanced tumor cellular internalization and near-
-

- infrared light-triggered photodynamic therapy, *Chem. Commun.* 51 (2015) 406–408. <https://doi.org/10.1039/C4CC08178A>.
- [76] F. Bahrami, M.J. Abdekhodaie, F. Behroozi, M. Mehrvar, Nano mesoporous silica for cancer treatment: ROS-responsive and redox-responsive carriers, *J. Drug Deliv. Sci. Technol.* 57 (2020) 101510. <https://doi.org/10.1016/j.jddst.2020.101510>.
- [77] J. Yoo, N. Sanoj Rejinold, D. Lee, S. Jon, Y.-C. Kim, Protease-activatable cell-penetrating peptide possessing ROS-triggered phase transition for enhanced cancer therapy, *J. Controlled Release* 264 (2017) 89–101. <https://doi.org/10.1016/j.jconrel.2017.08.026>.
- [78] J. Wang, J. Liu, F. Huang, H. Wang, X. Wang, F. Liu, H. Yang, Y. Xun, W.-Q. Jiao, D. Liu, Logic gate nanocarriers based on pH and ROS dual sensitive poly(orthoester-thioether) for enhanced anticancer drug delivery, *Colloids Surf. Physicochem. Eng. Asp.* 618 (2021) 126422. <https://doi.org/10.1016/j.colsurfa.2021.126422>.
- [79] Y. Zhang, C. Ma, S. Zhang, C. Wei, Y. Xu, W. Lu, ROS-responsive selenium-containing polyphosphoester nanogels for activated anticancer drug release, *Mater. Today Chem.* 9 (2018) 34–42. <https://doi.org/10.1016/j.mtchem.2018.04.002>.
- [80] W. Wu, M. Chen, T. Luo, Y. Fan, J. Zhang, Y. Zhang, Q. Zhang, A. Sapin-Minet, C. Gaucher, X. Xia, ROS and GSH-responsive S-nitrosoglutathione functionalized polymeric nanoparticles to overcome multidrug resistance in cancer, *Acta Biomater.* 103 (2020) 259–271. <https://doi.org/10.1016/j.actbio.2019.12.016>.
- [81] C.-Y. Sun, S. Shen, C.-F. Xu, H.-J. Li, Y. Liu, Z.-T. Cao, X.-Z. Yang, J.-X. Xia, J. Wang, Tumor Acidity-Sensitive Polymeric Vector for Active Targeted siRNA Delivery, *J. Am. Chem. Soc.* 137 (2015) 15217–15224. <https://doi.org/10.1021/jacs.5b09602>.

- [82] Y. Zhang, J. Xu, Mesoporous silica nanoparticle-based intelligent drug delivery system for bienzyme-responsive tumour targeting and controlled release, *R. Soc. Open Sci.* 5 (2018) 170986.
- [83] X. Zhang, M. Zhao, N. Cao, W. Qin, M. Zhao, J. Wu, D. Lin, Construction of a tumor microenvironment pH-responsive cleavable PEGylated hyaluronic acid nano-drug delivery system for colorectal cancer treatment, *Biomater. Sci.* 8 (2020) 1885–1896. <https://doi.org/10.1039/c9bm01927h>.
- [84] R. Xiao, J. Ye, X. Li, X. Wang, Dual size/charge-switchable and multi-responsive gelatin-based nanocluster for targeted anti-tumor therapy, *Int. J. Biol. Macromol.* 238 (2023) 124032. <https://doi.org/10.1016/j.ijbiomac.2023.124032>.
- [85] H. Wang, W. Shao, X. Lu, C. Gao, L. Fang, X. Yang, P. Zhu, Synthesis, characterization, and in vitro anti-tumor activity studies of the hyaluronic acid-mangiferin-methotrexate nanodrug targeted delivery system, *Int. J. Biol. Macromol.* 239 (2023) 124208. <https://doi.org/10.1016/j.ijbiomac.2023.124208>.
- [86] M. Archana, J. Sreekutty, H. Syama, M.M. Joseph, K. Anusree, B. Unnikrishnan, G. Preethi, P. Reshma, T. Sreelekha, Polysaccharide guided tumor delivery of therapeutics: A bio-fabricated galactomannan-gold nanosystem for augmented cancer therapy, *J. Drug Deliv. Sci. Technol.* 80 (2023) 104172. <https://doi.org/10.1016/j.jddst.2023.104172>.
- [87] M. Wang, X. Li, W. Du, M. Sun, G. Ling, P. Zhang, Microneedle-mediated treatment for superficial tumors by combining multiple strategies, *Drug Deliv. Transl. Res.* 13 (2023) 1600–1620. <https://doi.org/10.1007/s13346-023-01297-9>.
- [88] A.A. Seetharam, H. Choudhry, M.A. Bakhrebah, W.H. Abdulaal, M.S. Gupta, S.M.D. Rizvi, Q. Alam, Siddaramaiah, D.V. Gowda, A. Moin, *Microneedles Drug*

- Delivery Systems for Treatment of Cancer: A Recent Update, *Pharmaceutics* 12 (2020) 1101. <https://doi.org/10.3390/pharmaceutics12111101>.
- [89] D. Li, D. Hu, H. Xu, H.K. Patra, X. Liu, Z. Zhou, J. Tang, N. Slater, Y. Shen, Progress and perspective of microneedle system for anti-cancer drug delivery, *Biomaterials* 264 (2021) 120410. <https://www.sciencedirect.com/science/article/pii/S0142961220306566> (accessed November 17, 2024).
- [90] X. Jiang, H. Zhao, W. Li, Microneedle-Mediated Transdermal Delivery of Drug-Carrying Nanoparticles, *Front. Bioeng. Biotechnol.* 10 (2022). <https://doi.org/10.3389/fbioe.2022.840395>.
- [91] X. Lan, J. She, D. Lin, Y. Xu, X. Li, W. Yang, V.W.Y. Lui, L. Jin, X. Xie, Y. Su, Microneedle-Mediated Delivery of Lipid-Coated Cisplatin Nanoparticles for Efficient and Safe Cancer Therapy, *ACS Appl. Mater. Interfaces* 10 (2018) 33060–33069. <https://doi.org/10.1021/acsami.8b12926>.
- [92] R. Xie, W. Li, K. Shi, L. Yang, H. Chen, S. Jiang, X. Zeng, Versatile Platforms of Microneedle Patches Loaded with Responsive Nanoparticles: Synthesis and Promising Biomedical Applications, *Adv. NanoBiomed Res.* 4 (2024) 2300142. <https://doi.org/10.1002/anbr.202300142>.
- [93] Breast Cancer Facts and Statistics 2024, (n.d.). <https://www.breastcancer.org/facts-statistics> (accessed May 21, 2024).
- [94] M. Li, Y. Zhao, W. Zhang, S. Zhang, S. Zhang, Multiple-therapy strategies via polysaccharides-based nano-systems in fighting cancer, *Carbohydr. Polym.* 269 (2021) 118323. <https://doi.org/10.1016/j.carbpol.2021.118323>.

- [95] S. Mizrahy, D. Peer, Polysaccharides as building blocks for nanotherapeutics, *Chem. Soc. Rev.* 41 (2012) 2623–2640. <https://doi.org/10.1039/C1CS15239D>.
- [96] J. Jacob, J.T. Haponiuk, S. Thomas, S. Gopi, Biopolymer based nanomaterials in drug delivery systems: A review, *Mater. Today Chem.* 9 (2018) 43–55. <https://doi.org/10.1016/j.mtchem.2018.05.002>.
- [97] M.M. Abo Elsoud, E.M. El Kady, Current trends in fungal biosynthesis of chitin and chitosan, *Bull. Natl. Res. Cent.* 43 (2019) 59. <https://doi.org/10.1186/s42269-019-0105-y>.
- [98] M. Prabakaran, J.F. Mano, Chitosan-Based Particles as Controlled Drug Delivery Systems, *Drug Deliv.* (2004). <https://doi.org/10.1080/10717540590889781>.
- [99] L.E. Puluhulawa, I.M. Joni, K.M. Elamin, A.F.A. Mohammed, M. Muchtaridi, N. Wathoni, Chitosan–Hyaluronic Acid Nanoparticles for Active Targeting in Cancer Therapy, *Polymers* 14 (2022) 3410. <https://doi.org/10.3390/polym14163410>.
- [100] A. Yasin, Y. Ren, J. Li, Y. Sheng, C. Cao, K. Zhang, Advances in Hyaluronic Acid for Biomedical Applications, *Front. Bioeng. Biotechnol.* 10 (2022) 910290. <https://doi.org/10.3389/fbioe.2022.910290>.
- [101] P. Rohtagi, U. Garg, Triveni, N. Jain, M. Pandey, M.C.I.M. Amin, B. Gorain, P. Kumar, Chitosan and hyaluronic acid-based nanocarriers for advanced cancer therapy and intervention, *Biomater. Adv.* 157 (2024) 213733. <https://doi.org/10.1016/j.bioadv.2023.213733>.
- [102] Hyaluronic acid-coated chitosan nanoparticles: Molecular weight-dependent effects on morphology and hyaluronic acid presentation, *J. Controlled Release* 172 (2013) 1142–1150. <https://doi.org/10.1016/j.jconrel.2013.09.032>.

- [103] Effect of preparation parameters on ultra low molecular weight chitosan/hyaluronic acid nanoparticles, *Int. J. Biol. Macromol.* 62 (2013) 642–646. <https://doi.org/10.1016/j.ijbiomac.2013.09.041>.
- [104] A. Abidi, Cabazitaxel: A novel taxane for metastatic castration-resistant prostate cancer-current implications and future prospects, *J. Pharmacol. Pharmacother.* 4 (2013) 230–237. <https://doi.org/10.4103/0976-500X.119704>.
- [105] P. Chand, H. Kumar, N. Badduri, N.V. Gupta, V.G. Bettada, S.V. Madhunapantula, S.S. Kesharwani, S. Dey, V. Jain, Design and evaluation of cabazitaxel loaded NLCs against breast cancer cell lines, *Colloids Surf. B Biointerfaces* 199 (2021) 111535. <https://doi.org/10.1016/j.colsurfb.2020.111535>.
- [106] Y. Zhang, W. Zhang, Y. Wang, J. Zhu, M. Zhou, C. Peng, Z. He, J. Sun, Z. Li, S. Gui, Emerging nanotaxanes for cancer therapy, *Biomaterials* 272 (2021) 120790. <https://doi.org/10.1016/j.biomaterials.2021.120790>.
- [107] H. Gomhor J Alqaraghuli, S. Kashanian, R. Rafipour, E. Mahdavian, K. Mansouri, Development and characterization of folic acid-functionalized apoferritin as a delivery vehicle for epirubicin against MCF-7 breast cancer cells, *Artif. Cells Nanomedicine Biotechnol.* 46 (2018) S847–S854. <https://doi.org/10.1080/21691401.2018.1516671>.
- [108] A. Hemati Azandaryani, S. Kashanian, K. Derakhshandeh, Folate Conjugated Hybrid Nanocarrier for Targeted Letrozole Delivery in Breast Cancer Treatment, *Pharm. Res.* 34 (2017) 2798–2808. <https://doi.org/10.1007/s11095-017-2260-x>.
- [109] S. Rezaei, S. Kashanian, Y. Bahrami, L.J. Cruz, M. Motiei, Redox-Sensitive and Hyaluronic Acid-Functionalized Nanoparticles for Improving Breast Cancer Treatment by Cytoplasmic 17 α -Methyltestosterone Delivery, *Mol. Basel Switz.* 25 (2020) 1181. <https://doi.org/10.3390/molecules25051181>.

- [110] F.I. Elshami, G. Elrefaei, M.M. Ibrahim, I. Elmehasseb, S.Y. Shaban, GSH-responsive and folate receptor-targeted pyridine bisfolate-encapsulated chitosan nanoparticles for enhanced intracellular drug delivery in MCF-7 cells, *Carbohydr. Res.* 543 (2024) 109207. <https://doi.org/10.1016/j.carres.2024.109207>.
- [111] N. Kommineni, S. Mahira, A.J. Domb, W. Khan, Cabazitaxel-loaded nanocarriers for cancer therapy with reduced side effects, *Pharmaceutics* 11 (2019) 141. <https://www.mdpi.com/1999-4923/11/3/141> (accessed August 19, 2024).
- [112] R.V. Kutty, S.-S. Feng, Cetuximab conjugated vitamin E TPGS micelles for targeted delivery of docetaxel for treatment of triple negative breast cancers, *Biomaterials* 34 (2013) 10160–10171. <https://doi.org/10.1016/j.biomaterials.2013.09.043>.
- [113] A. Jha, M. Kumar, P. Goswami, M. Manjit, K. Bharti, B. Koch, B. Mishra, Hyaluronic acid-oleylamine and chitosan-oleic acid conjugate-based hybrid nanoparticle delivery via dissolving microneedles for enhanced treatment efficacy in localized breast cancer, *Biomater. Adv.* 160 (2024) 213865. <https://doi.org/10.1016/j.bioadv.2024.213865>.
- [114] Y. Guo, M. Chu, S. Tan, S. Zhao, H. Liu, B.O. Otieno, X. Yang, C. Xu, Z. Zhang, Chitosan-g-TPGS Nanoparticles for Anticancer Drug Delivery and Overcoming Multidrug Resistance, *Mol. Pharm.* 11 (2014) 59–70. <https://doi.org/10.1021/mp400514t>.
- [115] M. de la Fuente, B. Seijo, M.J. Alonso, Novel Hyaluronan-Based Nanocarriers for Transmucosal Delivery of Macromolecules, *Macromol. Biosci.* 8 (2008) 441–450. <https://doi.org/10.1002/mabi.200700190>.

- [116] S.A. Altalhi, A.A. Shati, M.Y. Alfaihi, F.A. Al-Salmi, S.E.I. Elbehairi, L.S. Alqahtani, E. Fayad, R.F.M. Elshaarawy, A.M. Nasr, Therapeutic potential and protection enhancement of mesenchymal stem cell against cisplatin-induced nephrotoxicity using hyaluronic acid-chitosan nanoparticles as an adjuvant, *Int. J. Pharm.* 640 (2023) 123023. <https://doi.org/10.1016/j.ijpharm.2023.123023>.
- [117] M. Kumar, A. Jha, K. Bharti, M. Manjit, P. Kumbhar, V. Dhapte-Pawar, B. Mishra, Lipid-coated nanocrystals of paclitaxel as dry powder for inhalation: Characterization, in-vitro performance, and pharmacokinetic assessment, *Colloids Surf. B Biointerfaces* 237 (2024) 113865. <https://doi.org/10.1016/j.colsurfb.2024.113865>.
- [118] Z. Jiang, X. Dong, Y. Sun, Charge effects of self-assembled chitosan-hyaluronic acid nanoparticles on inhibiting amyloid β -protein aggregation, *Carbohydr. Res.* 461 (2018) 11–18. <https://doi.org/10.1016/j.carres.2018.03.001>.
- [119] M. Kumar, A. Jha, K. Bharti, Manjit, B. Mishra, Fucoidan-based bosutinib nanocrystals for pulmonary drug delivery: Solid state characterization and *in-vitro* assessment, *Chem. Phys. Impact* 8 (2024) 100644. <https://doi.org/10.1016/j.chphi.2024.100644>.
- [120] S. Maya, L.G. Kumar, B. Sarmento, N. Sanoj Rejinold, D. Menon, S.V. Nair, R. Jayakumar, Cetuximab conjugated O-carboxymethyl chitosan nanoparticles for targeting EGFR overexpressing cancer cells, *Carbohydr. Polym.* 93 (2013) 661–669. <https://doi.org/10.1016/j.carbpol.2012.12.032>.
- [121] A. Jha, M.K. Viswanadh, A.S. Burande, A.K. Mehata, S. Poddar, K. Yadav, S.K. Mahto, A.S. Parmar, M.S. Muthu, DNA biodots based targeted theranostic nanomedicine for the imaging and treatment of non-small cell lung cancer, *Int. J. Biol. Macromol.* 150 (2020) 413–425. <https://doi.org/10.1016/j.ijbiomac.2020.02.075>.

- [122] U. Gupta, S. Sharma, I. Khan, A. Gothwal, A.K. Sharma, Y. Singh, M.K. Chourasia, V. Kumar, Enhanced apoptotic and anticancer potential of paclitaxel loaded biodegradable nanoparticles based on chitosan, *Int. J. Biol. Macromol.* 98 (2017) 810–819. <https://doi.org/10.1016/j.ijbiomac.2017.02.030>.
- [123] J. Kazi, R. Sen, S. Ganguly, T. Jha, S. Ganguly, M. Chatterjee Debnath, Folate decorated epigallocatechin-3-gallate (EGCG) loaded PLGA nanoparticles; *in-vitro* and *in-vivo* targeting efficacy against MDA-MB-231 tumor xenograft, *Int. J. Pharm.* 585 (2020) 119449. <https://doi.org/10.1016/j.ijpharm.2020.119449>.
- [124] X.-B. Wang, H.-Y. Zhou, Molecularly targeted gemcitabine-loaded nanoparticulate system towards the treatment of EGFR overexpressing lung cancer, *Biomed. Pharmacother.* 70 (2015) 123–128. <https://doi.org/10.1016/j.biopha.2015.01.008>.
- [125] P. Manivasagan, S. Bharathiraja, N.Q. Bui, I.G. Lim, J. Oh, Paclitaxel-loaded chitosan oligosaccharide-stabilized gold nanoparticles as novel agents for drug delivery and photoacoustic imaging of cancer cells, *Int. J. Pharm.* 511 (2016) 367–379. <https://doi.org/10.1016/j.ijpharm.2016.07.025>.
- [126] A.M. Itoo, M. Paul, B. Ghosh, S. Biswas, Oxaliplatin delivery via chitosan/vitamin E conjugate micelles for improved efficacy and MDR-reversal in breast cancer, *Carbohydr. Polym.* 282 (2022) 119108. <https://doi.org/10.1016/j.carbpol.2022.119108>.
- [127] M.G. Antoniraj, Y. Dhayanandamoorthy, K. Ponnuchamy, R. Kandasamy, K. Pandima Devi, Study the anticancer efficacy of doxorubicin-loaded redox-responsive chitosan-derived nanoparticles in the MDA-MB-231 cell line, *Carbohydr. Res.* 536 (2024) 109049. <https://doi.org/10.1016/j.carres.2024.109049>.

- [128] CD44-Targeted Facile Enzymatic Activatable Chitosan Nanoparticles for Efficient Antitumor Therapy and Reversal of Multidrug Resistance | *Biomacromolecules*, (n.d.). <https://pubs.acs.org/doi/10.1021/acs.biomac.7b01676> (accessed May 28, 2024).
- [129] X. Zhang, X. Xu, X. Wang, Y. Lin, Y. Zheng, W. Xu, J. Liu, W. Xu, Hepatoma-targeting and reactive oxygen species-responsive chitosan-based polymeric micelles for delivery of celastrol, *Carbohydr. Polym.* 303 (2023) 120439. <https://doi.org/10.1016/j.carbpol.2022.120439>.
- [130] N.A. Mundhe, P. Kumar, S. Ahmed, V. Jamdade, S. Mundhe, M. Lahkar, Nordihydroguaiaretic acid ameliorates cisplatin induced nephrotoxicity and potentiates its anti-tumor activity in DMBA induced breast cancer in female Sprague–Dawley rats, *Int. Immunopharmacol.* 28 (2015) 634–642. <https://doi.org/10.1016/j.intimp.2015.07.016>.
- [131] Structural and Spectroscopic Characterization of TPGS Micelles: Disruptive Role of Cyclodextrins and Kinetic Pathways | *Langmuir*, (n.d.). <https://pubs.acs.org/doi/10.1021/acs.langmuir.7b00701> (accessed May 29, 2024).
- [132] Y. Chen, S. Feng, W. Liu, Z. Yuan, P. Yin, F. Gao, Vitamin E Succinate-Grafted-Chitosan Oligosaccharide/RGD-Conjugated TPGS Mixed Micelles Loaded with Paclitaxel for U87MG Tumor Therapy, *Mol. Pharm.* 14 (2017) 1190–1203. <https://doi.org/10.1021/acs.molpharmaceut.6b01068>.
- [133] J. Wei, A. Bristow, E. McBride, D. Kilgour, P.B. O'Connor, d- α -tocopheryl Polyethylene Glycol 1000 Succinate: A View from FTICR MS and Tandem MS, *Anal. Chem.* 86 (2014) 1567–1574. <https://doi.org/10.1021/ac403195f>.

- [134] Poly(ethyleneglycol) in electrospray ionization (ESI) mass spectrometry | *Analisis*, (n.d.). <https://analisis.edpsciences.org/articles/analisis/abs/2000/04/varray/varray.html> (accessed May 28, 2024).
- [135] M. Girod, Y. Carissan, S. Humbel, L. Charles, Tandem mass spectrometry of doubly charged poly(ethylene oxide) oligomers produced by electrospray ionization, *Int. J. Mass Spectrom.* 272 (2008) 1–11. <https://doi.org/10.1016/j.ijms.2007.12.010>.
- [136] L. Chen, Y. Zheng, L. Feng, Z. Liu, R. Guo, Y. Zhang, Novel hyaluronic acid coated hydrophobically modified chitosan polyelectrolyte complex for the delivery of doxorubicin, *Int. J. Biol. Macromol.* 126 (2019) 254–261. <https://doi.org/10.1016/j.ijbiomac.2018.12.215>.
- [137] M. Danaei, M. Dehghankhold, S. Ataei, F. Hasanzadeh Davarani, R. Javanmard, A. Dokhani, S. Khorasani, M.R. Mozafari, Impact of Particle Size and Polydispersity Index on the Clinical Applications of Lipidic Nanocarrier Systems, *Pharmaceutics* 10 (2018) 57. <https://doi.org/10.3390/pharmaceutics10020057>.
- [138] B. Wei, M. He, X. Cai, X. Hou, Y. Wang, J. Chen, M. Lan, Y. Chen, K. Lou, F. Gao, Vitamin E succinate-grafted-chitosan/chitosan oligosaccharide mixed micelles loaded with C-DMSA for Hg²⁺ detection and detoxification in rat liver, *Int. J. Nanomedicine* 14 (2019) 6917. <https://doi.org/10.2147/IJN.S213084>.
- [139] A. Cimini, B. D'Angelo, S. Das, R. Gentile, E. Benedetti, V. Singh, A.M. Monaco, S. Santucci, S. Seal, Antibody-conjugated PEGylated cerium oxide nanoparticles for specific targeting of A β aggregates modulate neuronal survival pathways, *Acta Biomater.* 8 (2012) 2056–2067. <https://www.sciencedirect.com/science/article/pii/S1742706112000517> (accessed November 28, 2023).

- [140] C. Corsaro, G. Neri, A.M. Mezzasalma, E. Fazio, Weibull Modeling of Controlled Drug Release from Ag-PMA Nanosystems, *Polymers* 13 (2021) 2897. <https://doi.org/10.3390/polym13172897>.
- [141] U. de J. Martín-Camacho, N. Rodríguez-Barajas, J.A. Sánchez-Burgos, A. Pérez-Larios, Weibull β value for the discernment of drug release mechanism of PLGA particles, *Int. J. Pharm.* 640 (2023) 123017. <https://doi.org/10.1016/j.ijpharm.2023.123017>.
- [142] S. Zhang, X. Fan, G. Zhang, W. Wang, L. Yan, Preparation, characterization, and in vitro release kinetics of doxorubicin-loaded magnetosomes, *J. Biomater. Appl.* 36 (2022) 1469–1483. <https://doi.org/10.1177/08853282211060544>.
- [143] V. Akhouri, M. Kumari, A. Kumar, Therapeutic effect of Aegle marmelos fruit extract against DMBA induced breast cancer in rats, *Sci. Rep.* 10 (2020) 18016. <https://doi.org/10.1038/s41598-020-72935-2>.
- [144] J.B. Minari, G.O. Ogar, A.J. Bello, Antiproliferative potential of aqueous leaf extract of *Mucuna pruriens* on DMBA-induced breast cancer in female albino rats, *Egypt. J. Med. Hum. Genet.* 17 (2016) 331–343. <https://doi.org/10.1016/j.ejmhg.2015.12.008>.
- [145] B. Singh, N.K. Bhat, H.K. Bhat, Partial Inhibition of Estrogen-Induced Mammary Carcinogenesis in Rats by Tamoxifen: Balance between Oxidant Stress and Estrogen Responsiveness, *PLOS ONE* 6 (2011) e25125. <https://doi.org/10.1371/journal.pone.0025125>.
- [146] T.G. Buu, T.T.P. Nhung, N.T. Trang, Characterization of Crilin and Nanocurcumin's Synergistic Effect on Treatment for 7.12-Dimethylbenz[a]anthracene

- (DMBA)-Induced Breast Cancer Mice, *VNU J. Sci. Med. Pharm. Sci.* 34 (2018).
<https://doi.org/10.25073/2588-1132/vnumps.4099>.
- [147] H. Sung, J. Ferlay, R.L. Siegel, M. Laversanne, I. Soerjomataram, A. Jemal, F. Bray, Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries, *CA. Cancer J. Clin.* 71 (2021) 209–249. <https://doi.org/10.3322/caac.21660>.
- [148] M.T. Manzari, Y. Shamay, H. Kiguchi, N. Rosen, M. Scaltriti, D.A. Heller, Targeted drug delivery strategies for precision medicines, *Nat. Rev. Mater.* 6 (2021) 351–370. <https://doi.org/10.1038/s41578-020-00269-6>.
- [149] M.J. Mitchell, M.M. Billingsley, R.M. Haley, M.E. Wechsler, N.A. Peppas, R. Langer, Engineering precision nanoparticles for drug delivery, *Nat. Rev. Drug Discov.* 20 (2021) 101–124. <https://doi.org/10.1038/s41573-020-0090-8>.
- [150] D. Fan, Y. Cao, M. Cao, Y. Wang, Y. Cao, T. Gong, Nanomedicine in cancer therapy, *Signal Transduct. Target. Ther.* 8 (2023) 1–34. <https://doi.org/10.1038/s41392-023-01536-y>.
- [151] P. Foroozandeh, A.A. Aziz, Insight into Cellular Uptake and Intracellular Trafficking of Nanoparticles, *Nanoscale Res. Lett.* 13 (2018) 339. <https://doi.org/10.1186/s11671-018-2728-6>.
- [152] M.E. Davis, Z. (Georgia) Chen, D.M. Shin, Nanoparticle therapeutics: an emerging treatment modality for cancer, *Nat. Rev. Drug Discov.* 7 (2008) 771–782. <https://doi.org/10.1038/nrd2614>.
- [153] D.A. Richards, A. Maruani, V. Chudasama, Antibody fragments as nanoparticle targeting ligands: a step in the right direction, *Chem. Sci.* 8 (2016) 63–77. <https://doi.org/10.1039/C6SC02403C>.

- [154] E. da S. Santos, K.A.B. Nogueira, L.C.C. Fernandes, J.R.P. Martins, A.V.F. Reis, J. de B.V. Neto, I.J. da S. Júnior, C. Pessoa, R. Petrilli, J.O. Eloy, EGFR targeting for cancer therapy: Pharmacology and immunoconjugates with drugs and nanoparticles, *Int. J. Pharm.* 592 (2021) 120082. <https://doi.org/10.1016/j.ijpharm.2020.120082>.
- [155] D. Geethakumari, A. Bhaskaran Sathyabhama, K. Raji Sathyan, D. Mohandas, J.V. Somasekharan, S. Thavarool Puthiyedathu, Folate functionalized chitosan nanoparticles as targeted delivery systems for improved anticancer efficiency of cytarabine in MCF-7 human breast cancer cell lines, *Int. J. Biol. Macromol.* 199 (2022) 150–161. <https://doi.org/10.1016/j.ijbiomac.2021.12.070>.
- [156] S. Idoudi, Y. Hijji, T. Bedhiafi, H.M. Korashy, S. Uddin, M. Merhi, S. Dermime, N. Billa, A novel approach of encapsulating curcumin and succinylated derivative in mannosylated-chitosan nanoparticles, *Carbohydr. Polym.* 297 (2022) 120034. <https://doi.org/10.1016/j.carbpol.2022.120034>.
- [157] S. Chen, X. Ji, M. Zhao, J. Jin, H. Zhang, L. Zhao, Construction of chitooligosaccharide-based nanoparticles of pH/redox cascade responsive for co-loading cyclosporin A and AZD9291, *Carbohydr. Polym.* 291 (2022) 119619. <https://doi.org/10.1016/j.carbpol.2022.119619>.
- [158] L. Jia, Z. Li, D. Zheng, Z. Li, Z. Zhao, A targeted and redox/pH-responsive chitosan oligosaccharide derivatives based nanohybrids for overcoming multidrug resistance of breast cancer cells, *Carbohydr. Polym.* 251 (2021) 117008. <https://doi.org/10.1016/j.carbpol.2020.117008>.
- [159] P. Song, Z. Lu, T. Jiang, W. Han, X. Chen, X. Zhao, Chitosan coated pH/redox-responsive hyaluronic acid micelles for enhanced tumor targeted co-delivery of

-
- doxorubicin and siPD-L1, *Int. J. Biol. Macromol.* 222 (2022) 1078–1091. <https://doi.org/10.1016/j.ijbiomac.2022.09.245>.
- [160] M. Zhao, P. Li, H. Zhou, L. Hao, H. Chen, X. Zhou, pH/redox dual responsive from natural polymer-based nanoparticles for on-demand delivery of pesticides, *Chem. Eng. J.* 435 (2022) 134861. <https://doi.org/10.1016/j.cej.2022.134861>.
- [161] A. Sood, A. Gupta, R. Bharadwaj, P. Ranganath, N. Silverman, G. Agrawal, Biodegradable disulfide crosslinked chitosan/stearic acid nanoparticles for dual drug delivery for colorectal cancer, *Carbohydr. Polym.* 294 (2022) 119833. <https://doi.org/10.1016/j.carbpol.2022.119833>.
- [162] F. Wang, J. Li, C. Chen, H. Qi, K. Huang, S. Hu, Preparation and synergistic chemo-photothermal therapy of redox-responsive carboxymethyl cellulose/chitosan complex nanoparticles, *Carbohydr. Polym.* 275 (2022) 118714. <https://doi.org/10.1016/j.carbpol.2021.118714>.
- [163] Q. Li, X. Liu, C. Yan, B. Zhao, Y. Zhao, L. Yang, M. Shi, H. Yu, X. Li, K. Luo, Polysaccharide-Based Stimulus-Responsive Nanomedicines for Combination Cancer Immunotherapy, *Small* 19 (2023) 2206211. <https://doi.org/10.1002/sml.202206211>.
- [164] F.A. Taher, S.A. Ibrahim, A.A. El-Aziz, M.F. Abou El-Nour, M.A. El-Sheikh, N. El-Husseiny, M.M. Mohamed, Anti-proliferative effect of chitosan nanoparticles (extracted from crayfish *Procambarus clarkii*, Crustacea: Cambaridae) against MDA-MB-231 and SK-BR-3 human breast cancer cell lines, *Int. J. Biol. Macromol.* 126 (2019) 478–487. <https://doi.org/10.1016/j.ijbiomac.2018.12.151>.
- [165] H. Amin, M.A. Amin, S.K. Osman, A.M. Mohammed, G. Zayed, Chitosan nanoparticles as a smart nanocarrier for gefitinib for tackling lung cancer: Design of

- experiment and in vitro cytotoxicity study, *Int. J. Biol. Macromol.* 246 (2023) 125638. <https://doi.org/10.1016/j.ijbiomac.2023.125638>.
- [166] F.V. Ataabadi, F. Oveissi, M. Etebari, A. Taheri, Preparation of chitosan nanoparticles for simultaneous drug delivery of dacarbazine and enoxaparin in melanoma, *Carbohydr. Polym.* 316 (2023) 121041. <https://doi.org/10.1016/j.carbpol.2023.121041>.
- [167] F.-Q. Hu, X. Wu, Y.-Z. Du, J. You, H. Yuan, Cellular uptake and cytotoxicity of shell crosslinked stearic acid-grafted chitosan oligosaccharide micelles encapsulating doxorubicin, *Eur. J. Pharm. Biopharm.* 69 (2008) 117–125. <https://doi.org/10.1016/j.ejpb.2007.09.018>.
- [168] Y.-Z. Du, L. Wang, H. Yuan, F.-Q. Hu, Linoleic acid-grafted chitosan oligosaccharide micelles for intracellular drug delivery and reverse drug resistance of tumor cells, *Int. J. Biol. Macromol.* 48 (2011) 215–222. <https://doi.org/10.1016/j.ijbiomac.2010.11.005>.
- [169] J. Dou, H. Zhang, X. Liu, M. Zhang, G. Zhai, Preparation and evaluation in vitro and in vivo of docetaxel loaded mixed micelles for oral administration, *Colloids Surf. B Biointerfaces* 114 (2014) 20–27. <https://doi.org/10.1016/j.colsurfb.2013.09.010>.
- [170] Y. Yu, L. Hou, H. Song, P. Xu, Y. Sun, K. Wu, Akt/AMPK/mTOR pathway was involved in the autophagy induced by vitamin E succinate in human gastric cancer SGC-7901 cells, *Mol. Cell. Biochem.* 424 (2017) 173–183. <https://doi.org/10.1007/s11010-016-2853-4>.
- [171] L. Liang, L. Qiu, Vitamin E succinate with multiple functions: A versatile agent in nanomedicine-based cancer therapy and its delivery strategies, *Int. J. Pharm.* 600 (2021) 120457. <https://doi.org/10.1016/j.ijpharm.2021.120457>.

- [172] T. Weber, H. Dalen, L. Andera, A. Nègre-Salvayre, N. Augé, M. Sticha, A. Lloret, A. Terman, P.K. Witting, M. Higuchi, M. Plasilova, J. Zivny, N. Gellert, C. Weber, J. Neuzil, Mitochondria Play a Central Role in Apoptosis Induced by α -Tocopheryl Succinate, an Agent with Antineoplastic Activity: Comparison with Receptor-Mediated Pro-Apoptotic Signaling, *Biochemistry* 42 (2003) 4277–4291. <https://doi.org/10.1021/bi020527j>.
- [173] R.G. Tuguntaev, S. Chen, A.S. Eltahan, A. Mozhi, S. Jin, J. Zhang, C. Li, X.-J. Liang, P-gp Inhibition and Mitochondrial Impairment by Dual-Functional Nanostructure Based on Vitamin E Derivatives To Overcome Multidrug Resistance, *ACS Appl. Mater. Interfaces* 9 (2017) 16900–16912. <https://doi.org/10.1021/acsami.7b03877>.
- [174] F.A. Boratto, M.S. Franco, A.L.B. Barros, G.D. Cassali, A. Malachias, L.A.M. Ferreira, E.A. Leite, Alpha-tocopheryl succinate improves encapsulation, pH-sensitivity, antitumor activity and reduces toxicity of doxorubicin-loaded liposomes, *Eur. J. Pharm. Sci.* 144 (2020) 105205. <https://doi.org/10.1016/j.ejps.2019.105205>.
- [175] W. Jiang, Q. Fan, J. Wang, B. Zhang, T. Hao, Q. Chen, L. Li, L. Chen, H. Cui, Z. Li, PEGylated phospholipid micelles containing D- α -tocopheryl succinate as multifunctional nanocarriers for enhancing the antitumor efficacy of doxorubicin, *Int. J. Pharm.* 607 (2021) 120979. <https://doi.org/10.1016/j.ijpharm.2021.120979>.
- [176] L. Manthalkar, S. Bhattacharya, K. Hatware, P. Sreelaya, D. Shah, A. Jain, N. Phatak, Fabrication of D- α -tocopheryl polyethylene glycol 1000 succinates and human serum albumin conjugated chitosan nanoparticles of bosutinib for colon targeting application; in vitro-in vivo investigation, *Int. J. Biol. Macromol.* 253 (2023) 127531. <https://doi.org/10.1016/j.ijbiomac.2023.127531>.

- [177] S. Behzadi, V. Serpooshan, W. Tao, M.A. Hamaly, M.Y. Alkawareek, E.C. Dreaden, D. Brown, A.M. Alkilany, O.C. Farokhzad, M. Mahmoudi, Cellular uptake of nanoparticles: journey inside the cell, *Chem. Soc. Rev.* 46 (2017) 4218–4244. <https://pubs.rsc.org/en/content/articlehtml/2017/cs/c6cs00636a> (accessed November 27, 2023).
- [178] M.A. Anbardan, S. Alipour, G.R. Mahdavinia, P.F. Rezaei, Synthesis of magnetic chitosan/hyaluronic acid/ κ -carrageenan nanocarriers for drug delivery, *Int. J. Biol. Macromol.* 253 (2023) 126805. <https://doi.org/10.1016/j.ijbiomac.2023.126805>.
- [179] Z. Lu, L. Ma, L. Mei, K. Ren, M. Li, L. Zhang, X. Liu, Q. He, Micellar nanoparticles inhibit the postoperative inflammation, recurrence and pulmonary metastasis of 4T1 breast cancer by blocking NF- κ B pathway and promoting MDSCs depletion, *Int. J. Pharm.* 628 (2022) 122303. <https://doi.org/10.1016/j.ijpharm.2022.122303>.
- [180] H. Wang, P. Agarwal, S. Zhao, R.X. Xu, J. Yu, X. Lu, X. He, Hyaluronic acid-decorated dual responsive nanoparticles of Pluronic F127, PLGA, and chitosan for targeted co-delivery of doxorubicin and irinotecan to eliminate cancer stem-like cells, *Biomaterials* 72 (2015) 74–89. <https://doi.org/10.1016/j.biomaterials.2015.08.048>.
- [181] T. Nalini, S.K. Basha, A.M. Sadiq, V.S. Kumari, In vitro cytocompatibility assessment and antibacterial effects of quercetin encapsulated alginate/chitosan nanoparticle, *Int. J. Biol. Macromol.* 219 (2022) 304–311. <https://doi.org/10.1016/j.ijbiomac.2022.08.007>.
- [182] Y. Zhang, R. Ma, C. You, X. Leng, D. Wang, S. Deng, B. He, Z. Guo, Z. Guan, H. Lei, J. Yu, Q. Zhou, J. Xing, Y. Dong, Hyaluronic acid modified oral drug delivery

- system with mucoadhesiveness and macrophage-targeting for colitis treatment, *Carbohydr. Polym.* 313 (2023) 120884. <https://doi.org/10.1016/j.carbpol.2023.120884>.
- [183] H. Vakilzadeh, J. Varshosaz, M. Dinari, M. Mirian, V. Hajhashemi, N. Shamaeizadeh, H.M. Sadeghi, Smart redox-sensitive micelles based on chitosan for dasatinib delivery in suppressing inflammatory diseases, *Int. J. Biol. Macromol.* 229 (2023) 696–712. <https://doi.org/10.1016/j.ijbiomac.2022.12.111>.
- [184] J. Wang, J. Liu, D.-Q. Lu, L. Chen, R. Yang, D. Liu, B. Zhang, Diselenide-crosslinked carboxymethyl chitosan nanoparticles for doxorubicin delivery: Preparation and in vivo evaluation, *Carbohydr. Polym.* 292 (2022) 119699. <https://doi.org/10.1016/j.carbpol.2022.119699>.
- [185] A.K. Pandey, N. Piplani, T. Mondal, A. Katranidis, J. Bhattacharya, Efficient delivery of hydrophobic drug, Cabazitaxel, using Nanodisc: A nano sized free standing planar lipid bilayer, *J. Mol. Liq.* 339 (2021) 116690. <https://doi.org/10.1016/j.molliq.2021.116690>.
- [186] C. Villanueva, F. Bazan, S. Kim, M. Demarchi, L. Chaigneau, A. Thierry-Vuillemin, T. Nguyen, L. Cals, E. Dobi, X. Pivot, Cabazitaxel: a novel microtubule inhibitor, *Drugs* 71 (2011) 1251–1258. <https://doi.org/10.2165/11591390-000000000-00000>.
- [187] C.J. Paller, E.S. Antonarakis, Cabazitaxel: a novel second-line treatment for metastatic castration-resistant prostate cancer, *Drug Des. Devel. Ther.* 5 (2011) 117–124. <https://doi.org/10.2147/DDDT.S13029>.
- [188] G. Nightingale, J. Ryu, Cabazitaxel (jevтана): a novel agent for metastatic castration-resistant prostate cancer, *P T Peer-Rev. J. Formul. Manag.* 37 (2012) 440–448.

- [189] A. Koutras, F. Zagouri, G.-A. Koliou, E. Psoma, I. Chrysogonidis, G. Lazaridis, D. Tryfonopoulos, A. Kotsakis, N.K. Kentepozidis, E. Razis, Phase 2 study of Cabazitaxel as second-line treatment in patients with HER2-negative metastatic breast cancer previously treated with taxanes—a Hellenic Cooperative Oncology Group (HeCOG) Trial, *Br. J. Cancer* 123 (2020) 355–361. <https://www.nature.com/articles/s41416-020-0909-4> (accessed November 27, 2023).
- [190] Y. Sun, R.J. Lee, F. Meng, G. Wang, X. Zheng, S. Dong, L. Teng, Microfluidic self-assembly of high cabazitaxel loading albumin nanoparticles, *Nanoscale* 12 (2020) 16928–16933. <https://doi.org/10.1039/C9NR10941B>.
- [191] Vikas, A.K. Mehata, M.K. Viswanadh, A.K. Malik, A. Setia, P. Kumari, S.K. Mahto, M.S. Muthu, EGFR Targeted Redox Sensitive Chitosan Nanoparticles of Cabazitaxel: Dual-Targeted Cancer Therapy, Lung Distribution, and Targeting Studies by Photoacoustic and Optical Imaging, *Biomacromolecules* 24 (2023) 4989–5003. <https://doi.org/10.1021/acs.biomac.3c00658>.
- [192] S.E. Park, N.S. El-Sayed, K. Shamloo, S. Lohan, S. Kumar, M.I. Sajid, R.K. Tiwari, Targeted Delivery of Cabazitaxel Using Cyclic Cell-Penetrating Peptide and Biomarkers of Extracellular Matrix for Prostate and Breast Cancer Therapy, *Bioconjug. Chem.* 32 (2021) 1898–1914. <https://doi.org/10.1021/acs.bioconjchem.1c00319>.
- [193] M. Wei, T. Lu, Z. Nong, G. Li, X. Pan, Y. Wei, Y. Yang, N. Wu, J. Huang, M. Pan, X. Li, F. Meng, Reductive response and RGD targeting nano-graphene oxide drug delivery system, *J. Drug Deliv. Sci. Technol.* 53 (2019) 101202. <https://doi.org/10.1016/j.jddst.2019.101202>.

- [194] E. Lallana, J.M. Rios De La Rosa, A. Tirella, M. Pelliccia, A. Gennari, I.J. Stratford, S. Puri, M. Ashford, N. Tirelli, Chitosan/Hyaluronic Acid Nanoparticles: Rational Design Revisited for RNA Delivery, *Mol. Pharm.* 14 (2017) 2422–2436. <https://doi.org/10.1021/acs.molpharmaceut.7b00320>.
- [195] 史凤丽, Synthesis method of 3,3'-dithiodipropionic acid bis(N-hydroxyl succinimide ester), CN105315191A, 2016. <https://patents.google.com/patent/CN105315191A/en> (accessed November 26, 2023).
- [196] S. Zhai, X. Hu, Y. Hu, B. Wu, D. Xing, Visible light-induced crosslinking and physiological stabilization of diselenide-rich nanoparticles for redox-responsive drug release and combination chemotherapy, *Biomaterials* 121 (2017) 41–54. <https://doi.org/10.1016/j.biomaterials.2017.01.002>.
- [197] F. Chen, J. Zhang, L. Wang, Y. Wang, M. Chen, Tumor pHe-triggered charge-reversal and redox-responsive nanoparticles for docetaxel delivery in hepatocellular carcinoma treatment, *Nanoscale* 7 (2015) 15763–15779. <https://doi.org/10.1039/C5NR04612B>.
- [198] S. Yin, J. Huai, X. Chen, Y. Yang, X. Zhang, Y. Gan, G. Wang, X. Gu, J. Li, Intracellular delivery and antitumor effects of a redox-responsive polymeric paclitaxel conjugate based on hyaluronic acid, *Acta Biomater.* 26 (2015) 274–285. <https://doi.org/10.1016/j.actbio.2015.08.029>.
- [199] X. Zhang, Y. Wang, G. Wei, J. Zhao, G. Yang, S. Zhou, Stepwise dual targeting and dual responsive polymer micelles for mitochondrion therapy, *J. Controlled Release* 322 (2020) 157–169. <https://www.sciencedirect.com/science/article/pii/S0168365920301632> (accessed November 28, 2023).

- [200] H. Wang, W. Shi, D. Zeng, Q. Huang, J. Xie, H. Wen, J. Li, X. Yu, L. Qin, Y. Zhou, pH-activated, mitochondria-targeted, and redox-responsive delivery of paclitaxel nanomicelles to overcome drug resistance and suppress metastasis in lung cancer, *J. Nanobiotechnology* 19 (2021) 152. <https://doi.org/10.1186/s12951-021-00895-4>.
- [201] H. Sun, S. Li, W. Qi, R. Xing, Q. Zou, X. Yan, Stimuli-responsive nanoparticles based on co-assembly of naturally-occurring biomacromolecules for in vitro photodynamic therapy, *Colloids Surf. Physicochem. Eng. Asp.* 538 (2018) 795–801. <https://doi.org/10.1016/j.colsurfa.2017.11.072>.
- [202] K. Vaghasiya, E. Ray, A. Sharma, O.P. Katare, R.K. Verma, Matrix Metalloproteinase-Responsive Mesoporous Silica Nanoparticles Cloaked with Cleavable Protein for “Self-Actuating” On-Demand Controlled Drug Delivery for Cancer Therapy, *ACS Appl. Bio Mater.* 3 (2020) 4987–4999. <https://doi.org/10.1021/acsabm.0c00497>.
- [203] P. Patel, J. Shah, Protective effects of hesperidin through attenuation of Ki67 expression against DMBA-induced breast cancer in female rats, *Life Sci.* 285 (2021) 119957. <https://doi.org/10.1016/j.lfs.2021.119957>.
- [204] K. Kolanjiappan, S. Manoharan, Chemopreventive efficacy and anti-lipid peroxidative potential of *Jasminum grandiflorum* Linn. on 7,12-dimethylbenz(a)anthracene-induced rat mammary carcinogenesis, *Fundam. Clin. Pharmacol.* 19 (2005) 687–693. <https://doi.org/10.1111/j.1472-8206.2005.00376.x>.
- [205] S. Li, P.E. Saw, C. Lin, Y. Nie, W. Tao, O.C. Farokhzad, L. Zhang, X. Xu, Redox-responsive polyprodrug nanoparticles for targeted siRNA delivery and synergistic liver cancer therapy, *Biomaterials* 234 (2020) 119760. <https://doi.org/10.1016/j.biomaterials.2020.119760>.

- [206] Z. Wang, X. Xue, Y. He, Z. Lu, B. Jia, H. Wu, Y. Yuan, Y. Huang, H. Wang, H. Lu, K.S. Lam, T.-Y. Lin, Y. Li, Novel Redox-Responsive Polymeric Magnetosomes with Tunable Magnetic Resonance Property for In Vivo Drug Release Visualization and Dual-Modal Cancer Therapy, *Adv. Funct. Mater.* 28 (2018) 1802159. <https://doi.org/10.1002/adfm.201802159>.
- [207] K. Xiao, Q. Liu, N. Suby, W. Xiao, R. Agrawal, M. Vu, H. Zhang, Y. Luo, Y. Li, K.S. Lam, LHRH-Targeted Redox-Responsive Crosslinked Micelles Impart Selective Drug Delivery and Effective Chemotherapy in Triple-Negative Breast Cancer, *Adv. Healthc. Mater.* 10 (2021) 2001196. <https://doi.org/10.1002/adhm.202001196>.
- [208] R. Wang, H. Yang, A.R. Khan, X. Yang, J. Xu, J. Ji, G. Zhai, Redox-responsive hyaluronic acid-based nanoparticles for targeted photodynamic therapy/chemotherapy against breast cancer, *J. Colloid Interface Sci.* 598 (2021) 213–228. <https://doi.org/10.1016/j.jcis.2021.04.056>.
- [209] W. Cabri, D. Ciceri, L. Domenighini, A. Gambini, F. Peterlongo, A crystalline anhydrous form of cabazitaxel, process for the preparation and pharmaceutical compositions thereof, EP3060556A1, 2016. <https://patents.google.com/patent/EP3060556A1/en> (accessed November 26, 2023).
- [210] A.K. Jangid, D. Pooja, P. Jain, S.V.K. Rompicharla, S. Ramesan, H. Kulhari, A nanoscale, biocompatible and amphiphilic prodrug of cabazitaxel with improved anticancer efficacy against 3D spheroids of prostate cancer cells, *Mater. Adv.* 1 (2020) 738–748. <https://doi.org/10.1039/D0MA00189A>.
- [211] Q. Chen, C. Jia, Y. Xu, Z. Jiang, T. Hu, C. Li, X. Cheng, Dual-pH responsive chitosan nanoparticles for improving in vivo drugs delivery and chemoresistance in

- breast cancer, *Carbohydr. Polym.* 290 (2022) 119518.
<https://doi.org/10.1016/j.carbpol.2022.119518>.
- [212] A.-M. Craciun, M.L. Barhalescu, M. Agop, L. Ochiuz, Theoretical Modeling of Long-Time Drug Release from Nitrosalicyl-Imine-Chitosan Hydrogels through Multifractal Logistic Type Laws, *Comput. Math. Methods Med.* 2019 (2019) 4091464.
<https://doi.org/10.1155/2019/4091464>.
- [213] K. Ghosal, A. Chandra, R. Rajabalaya, S. Chakraborty, A. Nanda, Mathematical modeling of drug release profiles for modified hydrophobic HPMC based gels, *Pharm.- Int. J. Pharm. Sci.* 67 (2012) 147–155.
<https://www.ingentaconnect.com/content/govi/pharmaz/2012/00000067/00000002/art00009> (accessed February 9, 2024).
- [214] W. Wang, D. Luo, J. Chen, J. Chen, Y. Xia, W. Chen, Y. Wang, Amelioration of cyclophosphamide-induced myelosuppression during treatment to rats with breast cancer through low-intensity pulsed ultrasound, *Biosci. Rep.* 40 (2020) BSR20201350.
<https://doi.org/10.1042/BSR20201350>.
- [215] T. Waghule, G. Singhvi, S.K. Dubey, M.M. Pandey, G. Gupta, M. Singh, K. Dua, Microneedles: A smart approach and increasing potential for transdermal drug delivery system, *Biomed. Pharmacother.* 109 (2019) 1249–1258.
<https://doi.org/10.1016/j.biopha.2018.10.078>.
- [216] R.F. Donnelly, T.R. Raj Singh, A.D. Woolfson, Microneedle-based drug delivery systems: Microfabrication, drug delivery, and safety, *Drug Deliv.* 17 (2010) 187–207.
<https://doi.org/10.3109/10717541003667798>.
- [217] S. Khan, A. Hasan, F. Attar, M.M.N. Babadaei, H.A. Zeinabad, M. Salehi, M. Alizadeh, M. Hassan, H. Derakhshankhah, M.R. Hamblin, Q. Bai, M. Sharifi, M.

- Falahati, T.L.M. ten Hagen, Diagnostic and drug release systems based on microneedle arrays in breast cancer therapy, *J. Controlled Release* 338 (2021) 341–357. <https://doi.org/10.1016/j.jconrel.2021.08.036>.
- [218] B.J. Pleuvry, Factors affecting drug absorption and distribution, *Anaesth. Intensive Care Med.* 6 (2005) 135–138. <https://doi.org/10.1383/anes.6.4.135.63632>.
- [219] K.S. Ahmed, X. Shan, J. Mao, L. Qiu, J. Chen, Derma roller® microneedles-mediated transdermal delivery of doxorubicin and celecoxib co-loaded liposomes for enhancing the anticancer effect, *Mater. Sci. Eng. C* 99 (2019) 1448–1458. <https://doi.org/10.1016/j.msec.2019.02.095>.
- [220] K. Ganeson, A.H. Alias, V. Murugaiyah, A.-A.A. Amirul, S. Ramakrishna, S. Vigneswari, Microneedles for Efficient and Precise Drug Delivery in Cancer Therapy, *Pharmaceutics* 15 (2023) 744. <https://doi.org/10.3390/pharmaceutics15030744>.
- [221] S. Huang, T. Wen, J. Wang, H. Wei, Z. Xiao, B. Li, X. Shuai, Nanoparticle-integrated dissolving microneedles for the co-delivery of R848/aPD-1 to synergistically reverse the immunosuppressive microenvironment of triple-negative breast cancer, *Acta Biomater.* (2024). <https://doi.org/10.1016/j.actbio.2024.01.009>.
- [222] A.H. Sabri, Y. Kim, M. Marlow, D.J. Scurr, J. Segal, A.K. Banga, L. Kagan, J.B. Lee, Intradermal and transdermal drug delivery using microneedles – Fabrication, performance evaluation and application to lymphatic delivery, *Adv. Drug Deliv. Rev.* 153 (2020) 195–215. <https://doi.org/10.1016/j.addr.2019.10.004>.
- [223] J.W. Lee, J.-H. Park, M.R. Prausnitz, Dissolving microneedles for transdermal drug delivery, *Biomaterials* 29 (2008) 2113–2124. <https://doi.org/10.1016/j.biomaterials.2007.12.048>.

- [224] A.F. Moreira, C.F. Rodrigues, T.A. Jacinto, S.P. Miguel, E.C. Costa, I.J. Correia, Microneedle-based delivery devices for cancer therapy: A review, *Pharmacol. Res.* 148 (2019) 104438. <https://doi.org/10.1016/j.phrs.2019.104438>.
- [225] V. Singh, P. Kesharwani, Recent advances in microneedles-based drug delivery device in the diagnosis and treatment of cancer, *J. Controlled Release* 338 (2021) 394–409. <https://doi.org/10.1016/j.jconrel.2021.08.054>.
- [226] X. Wang, H. Zhang, X. Chen, Drug resistance and combating drug resistance in cancer, *Cancer Drug Resist.* 2 (2019) 141–160. <https://doi.org/10.20517/cdr.2019.10>.
- [227] X. Ji, Y. Lu, H. Tian, X. Meng, M. Wei, W.C. Cho, Chemoresistance mechanisms of breast cancer and their countermeasures, *Biomed. Pharmacother.* 114 (2019) 108800. <https://doi.org/10.1016/j.biopha.2019.108800>.
- [228] S. Gadag, R. Narayan, A.S. Nayak, D. Catalina Ardila, S. Sant, Y. Nayak, S. Garg, U.Y. Nayak, Development and preclinical evaluation of microneedle-assisted resveratrol loaded nanostructured lipid carriers for localized delivery to breast cancer therapy, *Int. J. Pharm.* 606 (2021) 120877. <https://doi.org/10.1016/j.ijpharm.2021.120877>.
- [229] T. Peng, Y. Huang, X. Feng, C. Zhu, S. Yin, X. Wang, X. Bai, X. Pan, C. Wu, TPGS/hyaluronic acid dual-functionalized PLGA nanoparticles delivered through dissolving microneedles for markedly improved chemo-photothermal combined therapy of superficial tumor, *Acta Pharm. Sin. B* 11 (2021) 3297–3309. <https://doi.org/10.1016/j.apsb.2020.11.013>.
- [230] L. Sun, H. Liu, Y. Ye, Y. Lei, R. Islam, S. Tan, R. Tong, Y.-B. Miao, L. Cai, Smart nanoparticles for cancer therapy, *Signal Transduct. Target. Ther.* 8 (2023) 1–28. <https://doi.org/10.1038/s41392-023-01642-x>.

- [231] M. Kenchegowda, U. Hani, A. Al Fatease, N. Haider, K.V.R.N.S. Ramesh, S. Talath, H.V. Gangadharappa, G. Kiran Raj, S.H. Padmanabha, R.A.M. Osmani, Tiny titans- unravelling the potential of polysaccharides and proteins based dissolving microneedles in drug delivery and theranostics: A comprehensive review, *Int. J. Biol. Macromol.* 253 (2023) 127172. <https://doi.org/10.1016/j.ijbiomac.2023.127172>.
- [232] I. Saha, V.K. Rai, Hyaluronic acid based microneedle array: Recent applications in drug delivery and cosmetology, *Carbohydr. Polym.* 267 (2021) 118168. <https://doi.org/10.1016/j.carbpol.2021.118168>.
- [233] M. Sharma, N. Mittapelly, V.T. Banala, S. Urandur, S. Gautam, D. Marwaha, N. Rai, N. Singh, A. Gupta, K. Mitra, P.R. Mishra, Amalgamated Microneedle Array Bearing Ribociclib-Loaded Transfersomes Eradicates Breast Cancer via CD44 Targeting, *Biomacromolecules* 23 (2022) 661–675. <https://doi.org/10.1021/acs.biomac.1c01076>.
- [234] A. Patil, B. Prabhakar, P. Shende, Potential of transpapillary route for artesunate-loaded microneedles against breast cancer cell line, *Colloids Surf. Physicochem. Eng. Asp.* 640 (2022) 128431. <https://doi.org/10.1016/j.colsurfa.2022.128431>.
- [235] S. Bhatnagar, N.G. Bankar, M.V. Kulkarni, V.V.K. Venuganti, Dissolvable microneedle patch containing doxorubicin and docetaxel is effective in 4T1 xenografted breast cancer mouse model, *Int. J. Pharm.* 556 (2019) 263–275. <https://doi.org/10.1016/j.ijpharm.2018.12.022>.
- [236] P. Walvekar, R. Gannimani, M. Salih, S. Makhathini, C. Mocktar, T. Govender, Self-assembled oleylamine grafted hyaluronic acid polymersomes for delivery of vancomycin against methicillin resistant *Staphylococcus aureus* (MRSA), *Colloids Surf. B Biointerfaces* 182 (2019) 110388.

- <https://www.sciencedirect.com/science/article/pii/S0927776519305223> (accessed February 12, 2024).
- [237] M. Nazari, R. Safaeijavan, A. Vaziri Yazdi, E. Moniri, Investigation of the adsorption and release kinetics of the anticancer drug, methotrexate, from chitosan nanocapsules modified by caffeic acid and oleic acid, *Inorg. Chem. Commun.* 153 (2023) 110769. <https://doi.org/10.1016/j.inoche.2023.110769>.
- [238] M. De la Fuente, B. Seijo, M.J. Alonso, Bioadhesive hyaluronan–chitosan nanoparticles can transport genes across the ocular mucosa and transfect ocular tissue, *Gene Ther.* 15 (2008) 668–676. <https://www.nature.com/articles/gt200816> (accessed February 12, 2024).
- [239] A.B. Kayitmazer, A.F. Koksall, E.K. Iyilik, Complex coacervation of hyaluronic acid and chitosan: effects of pH, ionic strength, charge density, chain length and the charge ratio, *Soft Matter* 11 (2015) 8605–8612. <https://doi.org/10.1039/C5SM01829C>.
- [240] Z. Pan, Y. Ren, N. Song, Y. Song, J. Li, X. He, F. Luo, H. Tan, Q. Fu, Multifunctional Mixed Micelles Cross-Assembled from Various Polyurethanes for Tumor Therapy, *Biomacromolecules* 17 (2016) 2148–2159. <https://doi.org/10.1021/acs.biomac.6b00375>.
- [241] V. Ghalekhondabi, A. Fazlali, M. Soleymani, Preparation of hyaluronic acid-decorated hollow meso-organosilica/poly(methacrylic acid) nanospheres with redox/pH dual responsivity for delivery of curcumin to breast cancer cells, *Mater. Today Chem.* 34 (2023) 101780. <https://doi.org/10.1016/j.mtchem.2023.101780>.
- [242] M.H. Mesrati, A.A. Tajudin, M.J. Masarudin, M.N. Alamassi, A.Y. Abuhamad, A. Syahir, Hyaluronic acid/chitosan-coated poly (lactic-co-glycolic acid) nanoparticles to

- deliver single and co-loaded *paclitaxel* and *temozolomide* for CD44⁺oral cancer cells, *OpenNano* 12 (2023) 100166. <https://doi.org/10.1016/j.onano.2023.100166>.
- [243] P. Bose, A. Priyam, R. Kar, S. P. Pattanayak, Quercetin loaded folate targeted plasmonic silver nanoparticles for light activated chemo-photothermal therapy of DMBA induced breast cancer in Sprague Dawley rats, *RSC Adv.* 10 (2020) 31961–31978. <https://doi.org/10.1039/D0RA05793B>.
- [244] N.M.A. Pourradi, H. Babaei, H. Hamishehkar, B. Baradaran, B. Shokouhi-Gogani, D. Shanehbandi, M. Ghorbani, Y. Azarmi, Targeted delivery of doxorubicin by Thermo/pH-responsive magnetic nanoparticles in a rat model of breast cancer, *Toxicol. Appl. Pharmacol.* 446 (2022) 116036. <https://doi.org/10.1016/j.taap.2022.116036>.
- [245] A.-M. Vasi, M.I. Popa, M. Butnaru, G. Dodi, L. Verestiuc, Chemical functionalization of hyaluronic acid for drug delivery applications, *Mater. Sci. Eng. C* 38 (2014) 177–185. <https://doi.org/10.1016/j.msec.2014.01.052>.
- [246] S. Manju, K. Sreenivasan, Conjugation of curcumin onto hyaluronic acid enhances its aqueous solubility and stability, *J. Colloid Interface Sci.* 359 (2011) 318–325. <https://doi.org/10.1016/j.jcis.2011.03.071>.
- [247] A.G. Assanhou, W. Li, L. Zhang, L. Xue, L. Kong, H. Sun, R. Mo, C. Zhang, Reversal of multidrug resistance by co-delivery of paclitaxel and lonidamine using a TPGS and hyaluronic acid dual-functionalized liposome for cancer treatment, *Biomaterials* 73 (2015) 284–295. <https://doi.org/10.1016/j.biomaterials.2015.09.022>.
- [248] J.P. Henschke, T. Hsiao, M. Ho, Y. Huang, Crystalline forms of cabazitaxel, US8735611B2, 2014. <https://patents.google.com/patent/US8735611B2/en> (accessed February 12, 2024).

- [249] Y. Villegas-Peralta, J. López-Cervantes, T.J. Madera Santana, R.G. Sánchez-Duarte, D.I. Sánchez-Machado, M. del R. Martínez-Macías, Ma.A. Correa-Murrieta, Impact of the molecular weight on the size of chitosan nanoparticles: characterization and its solid-state application, *Polym. Bull.* 78 (2021) 813–832. <https://doi.org/10.1007/s00289-020-03139-x>.
- [250] Z.D. Özdal, Y. Gültekin, İ. Vural, S. Takka, Development and characterization of polymeric nanoparticles containing ondansetron hydrochloride as a hydrophilic drug, *J. Drug Deliv. Sci. Technol.* 74 (2022) 103599. <https://doi.org/10.1016/j.jddst.2022.103599>.
- [251] C. Song, X. Wu, J. Wang, R. Liu, Y. Zhao, Photosensitizer-immunotherapy integrated microneedles for preventing tumor recurrence and metastasis, *Nano Today* 51 (2023) 101913. <https://doi.org/10.1016/j.nantod.2023.101913>.
- [252] K.M. Koczur, S. Mourdikoudis, L. Polavarapu, S.E. Skrabalak, Polyvinylpyrrolidone (PVP) in nanoparticle synthesis, *Dalton Trans.* 44 (2015) 17883–17905. <https://doi.org/10.1039/C5DT02964C>.
- [253] S. Nkhwa, K.F. Lauriaga, E. Kemal, S. Deb, Poly(vinyl alcohol): Physical Approaches to Designing Biomaterials for Biomedical Applications, *Conf. Pap. Sci.* 2014 (2014) e403472. <https://doi.org/10.1155/2014/403472>.
- [254] A. Bernal, I. Kuritka, P. Saha, Preparation and characterization of poly(vinyl alcohol)-poly(vinyl pyrrolidone) blend: A biomaterial with latent medical applications, *J. Appl. Polym. Sci.* 127 (2013) 3560–3568. <https://doi.org/10.1002/app.37723>.
- [255] A.D. Permana, I.A. Tekko, M.T.C. McCrudden, Q.K. Anjani, D. Ramadan, H.O. McCarthy, R.F. Donnelly, Solid lipid nanoparticle-based dissolving microneedles: A promising intradermal lymph targeting drug delivery system with potential for

enhanced treatment of lymphatic filariasis, *J. Controlled Release* 316 (2019) 34–52.

<https://doi.org/10.1016/j.jconrel.2019.10.004>.

[256] H.X. Nguyen, B.D. Bozorg, Y. Kim, A. Wieber, G. Birk, D. Lubda, A.K. Banga, Poly (vinyl alcohol) microneedles: Fabrication, characterization, and application for transdermal drug delivery of doxorubicin, *Eur. J. Pharm. Biopharm.* 129 (2018) 88–103. <https://doi.org/10.1016/j.ejpb.2018.05.017>.

[257] S. Demartis, Q.K. Anjani, F. Volpe-Zanutto, A.J. Paredes, S.A. Jahan, L.K. Vora, R.F. Donnelly, E. Gavini, Trilayer dissolving polymeric microneedle array loading Rose Bengal transferrinsomes as a novel adjuvant in early-stage cutaneous melanoma management, *Int. J. Pharm.* 627 (2022) 122217. <https://doi.org/10.1016/j.ijpharm.2022.122217>.

[258] D. Yang, M. Chen, Y. Sun, Y. Jin, C. Lu, X. Pan, G. Quan, C. Wu, Microneedle-mediated transdermal drug delivery for treating diverse skin diseases, *Acta Biomater.* 121 (2021) 119–133. <https://doi.org/10.1016/j.actbio.2020.12.004>.

Chapter 8
Appendices

Key Publications

- Jha A, Goswami P, Kumar M, Bharti K, Manjit M, Satpute AP, Gupta A, Moorkoth S, Koch B, Mishra B. Cetuximab functionalized chitosan/hyaluronic acid-based nanoparticles loaded with cabazitaxel enhances anti-tumor efficacy in DMBA-induced breast cancer model in rats through spatial targeting. *Chemical Physics Impact*. 2024 Nov; 9:100750. <https://doi.org/10.1016/j.chphi.2024.100750>
- Jha A, Kumar M, Goswami P, Bharti K, Manjit M, Gupta A, Moorkoth S, Koch B, Mishra B. Cabazitaxel-loaded redox-responsive nanocarrier based on d-alpha-tocopheryl-chitosan and hyaluronic acid for improved anti-tumor efficacy in DMBA-induced breast cancer model. *Materials Advances*. 2024;5(19):7789-808. <https://doi.org/10.1039/D4MA00556B>
- Jha A, Kumar M, Goswami P, Bharti K, Manjit M, Koch B, Mishra B. Hyaluronic acid-oleylamine and chitosan-oleic acid conjugate-based hybrid nanoparticle delivery via dissolving microneedles for enhanced treatment efficacy in localized breast cancer. *Biomaterials Advances*, 2024, 213865. <https://doi.org/10.1016/j.bioadv.2024.213865>
- Abhishek Jha, Manish Kumar, Kanchan Bharti, Manjit, Brahmeshwar Mishra. Biopolymer-based tumor microenvironment-responsive nanomedicine for targeted cancer therapy. *Nanomedicine* 2024 19:7, 633-651. <https://doi.org/10.2217/nmm-2023-0302>

List of publications from collaborative work

- Sarkar, Kaushik, Abhishek Jha, Brahmeshwar Mishra et al. "Nanocarriers for tuberculosis therapy: design of safe and effective drug delivery strategies to overcome the therapeutic challenges." *Journal of Drug Delivery Science and Technology* 67 (2022): 102850. <https://doi.org/10.1016/j.jddst.2021.102850>
- *Manish Kumar, *Abhishek Jha, Brahmeshwar Mishra et al. "Advances in lipid-based pulmonary nanomedicine for the management of inflammatory lung disorders." *Nanomedicine* 17, no. 12 (2022): 913-934. <https://doi.org/10.2217/nnm-2021-0389>
- Mamata Singh, Abhishek Jha, Biplob Koch, et al. "Enhanced in vitro therapeutic efficacy of triphenyltin (IV) loaded vitamin E TPGS against breast cancer therapy." *Materials Today Communications* 31 (2022): 103256. <https://doi.org/10.1016/j.mtcomm.2022.103256>
- Mansi Upadhyay, Abhishek Jha, et al. "Myricetin encapsulated chitosan nanoformulation for management of type 2 diabetes: Preparation, optimization, characterization and in vivo activity." *Biomaterials Advances* 153 (2023): 213542. <https://doi.org/10.1016/j.bioadv.2023.213542>
- Bharti, Kanchan, Abhishek Jha, et al. "A multifaceted approach for grading of polymers for the development of stable amorphous solid dispersion of Riluzole." *Journal of Drug Delivery Science and Technology* (2023): 105158. <https://doi.org/10.1016/j.jddst.2023.105158>
- Bharti, Kanchan, Abhishek Jha, et al. "Development and Evaluation of Amorphous Solid Dispersion of Riluzole with PBPK Model to Simulate the Pharmacokinetic

Profile." AAPS PharmSciTech 24, no. 8 (2023): 219.

<https://doi.org/10.1208/s12249-023-02680-y>

- Manjit M, Kumar M, Jha A, Bharti K, Koch B, Mishra B "Fabrication of dual drug-loaded polycaprolactone–gelatin composite nanofibers for full thickness diabetic wound healing." Therapeutic Delivery (2023). <https://doi.org/10.4155/tde-2023-0083>
- Manjit M, Kumar M, Jha A, Bharti K, Koch B, Mishra B. "Formulation and characterization of polyvinyl alcohol/chitosan composite nanofiber co-loaded with silver nanoparticle & luliconazole encapsulated poly lactic-co-glycolic acid nanoparticle for treatment of diabetic foot ulcer." International Journal of Biological Macromolecules (2023): 128978. <https://doi.org/10.1016/j.ijbiomac.2023.128978>
- *Manish Kumar, *Abhishek Jha, Brahmeshwar Mishra. DNA-Based Nanostructured Platforms as Drug Delivery Systems. ACS Chem & Bio Engineering. (2024). <https://doi.org/10.1021/cbe.3c00023>
- Manjit, Manjit, Abhishek Jha, Brahmeshwar Mishra, et al. "Fabrication of gelatin coated polycaprolactone nanofiber scaffolds co-loaded with luliconazole and naringenin for treatment of Candida infected diabetic wounds." International Journal of Biological Macromolecules (2024): 129621. <https://doi.org/10.1016/j.ijbiomac.2024.129621>
- Manish Kumar, Abhishek Jha, Kanchan Bharti, Manjit Manjit, Pradnya Kumbhar, Vividha Dhapte-Pawar, Brahmeshwar Mishra. Lipid-coated nanocrystals of paclitaxel as dry powder for inhalation: Characterization, in-vitro performance, and

- pharmacokinetic assessment. *Colloids and Surfaces B: Biointerfaces*, 237, 2024, 113865. <https://doi.org/10.1016/j.colsurfb.2024.113865>
- Manish Kumar, Abhishek Jha, Kanchan Bharti, Manjit, Brahmeshwar Mishra, Fucoidan-based Bosutinib Nanocrystals for Pulmonary Drug Delivery: Solid State Characterization and In-vitro Assessment, *Chemical Physics Impact*, 2024, 100644, <https://doi.org/10.1016/j.chphi.2024.100644>
 - Bharti K, Jha A, Kumar M, Satpute AP, Tiwari V, Mishra B. Correlation of surface properties with dissolution behavior of amorphous solid dispersion of Riluzole and its pharmacodynamic evaluation. *Journal of Pharmaceutical Sciences*. 2024 Oct 15. <https://doi.org/10.1016/j.xphs.2024.10.010>
 - Kumar M, Goswami P, Jha A, Manjit M, Satpute AP, Koch B, Mishra B. Formulation and evaluation of cetuximab functionalized phospholipid modified nanocrystals of paclitaxel for non-small cell lung cancer therapy. *Scientific Report*. 2024 Nov 24, 14: 29114. <https://doi.org/10.1038/s41598-024-80283-8>