

9. References

Abdelghany, S. M., D. J. Quinn, R. J. Ingram, B. F. Gilmore, R. F. Donnelly, C. C. Taggart and C. J. Scott (2012). "Gentamicin-loaded nanoparticles show improved antimicrobial effects towards *Pseudomonas aeruginosa* infection." *International journal of nanomedicine* **7**: 4053.

Abdullahi, A., S. Amini-Nik and M. Jeschke (2014). "Animal models in burn research." *Cellular and molecular life sciences* **71**(17): 3241-3255.

Accurso, F. J., M. K. Sontag and J. S. Wagener (2005). "Complications associated with symptomatic diagnosis in infants with cystic fibrosis." *The Journal of pediatrics* **147**(3): S37-S41.

Agrawal, A. K., F. Aqil, J. Jeyabalan, W. A. Spencer, J. Beck, B. W. Gachuki, S. S. Alhakeem, K. Oben, R. Munagala and S. Bondada (2017). "Milk-derived exosomes for oral delivery of paclitaxel." *Nanomedicine: Nanotechnology, Biology and Medicine* **13**(5): 1627-1636.

Agrawal, A. K., H. Harde, K. Thanki and S. Jain (2013). "Improved stability and antidiabetic potential of insulin containing folic acid functionalized polymer stabilized multilayered liposomes following oral administration." *Biomacromolecules* **15**(1): 350-360.

Agrawal, P., R. P. Singh, L. Kumari, G. Sharma, B. Koch, C. V. Rajesh, A. K. Mehata, S. Singh, B. L. Pandey and M. S. Muthu (2017). "TPGS-chitosan cross-linked targeted nanoparticles for effective brain cancer therapy." *Materials Science and Engineering: C* **74**: 167-176.

Al-Nemrawi, N., N. A. Alshraideh, A. Zayed and B. Altaani (2018). "Low molecular weight chitosan-coated PLGA nanoparticles for pulmonary delivery of tobramycin for cystic fibrosis." *Pharmaceuticals* **11**(1): 28.

Al-Obaidi, H., R. Kalgudi and M. G. Zariwala (2018). "Fabrication of inhaled hybrid silver/ciprofloxacin nanoparticles with synergetic effect against *pseudomonas aeruginosa*." *European Journal of Pharmaceutics and Biopharmaceutics* **128**: 27-35.

Al-Qadi, S., A. Grenha, D. Carrión-Recio, B. Seijo and C. Remuñán-López (2012). "Microencapsulated chitosan nanoparticles for pulmonary protein delivery: in vivo evaluation of insulin-loaded formulations." *Journal of controlled release* **157**(3): 383-390.

Alipour, M., Z. E. Suntres and A. Omri (2009). "Importance of DNase and alginate lyase for enhancing free and liposome encapsulated aminoglycoside activity against *Pseudomonas aeruginosa*." *Journal of Antimicrobial Chemotherapy* **64**(2): 317-325.

Alkawash, M. A., J. S. Soothill and N. L. Schiller (2006). "Alginate lyase enhances antibiotic killing of mucoid *Pseudomonas aeruginosa* in biofilms." *Apmis* **114**(2): 131-138.

Allison, K. R., M. P. Brynildsen and J. J. Collins (2011). "Metabolite-enabled eradication of bacterial persisters by aminoglycosides." *Nature* **473**(7346): 216.

Ammons, M. C. B., L. S. Ward, S. Dowd and G. A. James (2011). "Combined treatment of *Pseudomonas aeruginosa* biofilm with lactoferrin and xylitol inhibits the ability of bacteria to respond to damage resulting from lactoferrin iron chelation." *International journal of antimicrobial agents* **37**(4): 316-323.

Anderl, J. N., M. J. Franklin and P. S. Stewart (2000). "Role of antibiotic penetration limitation in *Klebsiella pneumoniae* biofilm resistance to ampicillin and ciprofloxacin." *Antimicrobial agents and chemotherapy* **44**(7): 1818-1824.

Azevedo, E. P., T. D. Saldanha, M. V. Navarro, A. C. Medeiros, M. F. Ginani and F. N. Raffin (2006). "Mechanical properties and release studies of chitosan films impregnated with silver sulfadiazine." *Journal of applied polymer science* **102**(4): 3462-3470.

Baelo, A., R. Levato, E. Julián, A. Crespo, J. Astola, J. Gavaldà, E. Engel, M. A. Mateos-Timoneda and E. Torrents (2015). "Disassembling bacterial extracellular matrix with DNase-coated nanoparticles to enhance antibiotic delivery in biofilm infections." *Journal of Controlled Release* **209**: 150-158.

Barkat, M. A., I. Ahmad, R. Ali, S. P. Singh, F. H. Pottoo, S. Beg and F. J. Ahmad (2017). "Nanosuspension-based aloe vera gel of silver sulfadiazine with improved wound healing activity." *AAPS PharmSciTech* **18**(8): 3274-3285.

Baroli, B. (2010). "Penetration of nanoparticles and nanomaterials in the skin: fiction or reality?" *Journal of pharmaceutical sciences* **99**(1): 21-50.

Bijtenhoorn, P., C. Schipper, C. Hornung, M. Quitschau, S. Grond, N. Weiland and W. Streit (2011). "BpiB05, a novel metagenome-derived hydrolase acting on N-acylhomoserine lactones." *Journal of biotechnology* **155**(1): 86-94.

Bilati, U., E. Allémann and E. Doelker (2005). "Development of a nanoprecipitation method intended for the entrapment of hydrophilic drugs into nanoparticles." *European Journal of Pharmaceutical Sciences* **24**(1): 67-75.

Boles, B. R. and A. R. Horswill (2008). "Agr-mediated dispersal of *Staphylococcus aureus* biofilms." *PLoS pathogens* **4**(4): e1000052.

Boyd, A. and A. á. Chakrabarty (1994). "Role of alginate lyase in cell detachment of *Pseudomonas aeruginosa*." *Appl. Environ. Microbiol.* **60**(7): 2355-2359.

Brooks, B. D. and A. E. Brooks (2014). "Therapeutic strategies to combat antibiotic resistance." *Advanced drug delivery reviews* **78**: 14-27.

Bugli, F., B. Posteraro, M. Papi, R. Torelli, A. Maiorana, F. P. Sterbini, P. Posteraro, M. Sanguinetti and M. De Spirito (2013). "In vitro interaction between alginate lyase and amphotericin B against *Aspergillus fumigatus* biofilm determined by different methods." *Antimicrobial agents and chemotherapy* **57**(3): 1275-1282.

Campoli-Richards, D. M., J. P. Monk, A. Price, P. Benfield, P. A. Todd and A. Ward (1988). "Ciprofloxacin." *Drugs* **35**(4): 373-447.

Cegelski, L., J. S. Pinkner, N. D. Hammer, C. K. Cusumano, C. S. Hung, E. Chorell, V. Åberg, J. N. Walker, P. C. Seed and F. Almqvist (2009). "Small-molecule inhibitors target *Escherichia coli* amyloid biogenesis and biofilm formation." *Nature chemical biology* **5**(12): 913.

Chaignon, P., I. Sadvovskaya, C. Ragunah, N. Ramasubbu, J. Kaplan and S. Jabbouri (2007). "Susceptibility of staphylococcal biofilms to enzymatic treatments depends on their chemical composition." *Applied microbiology and biotechnology* **75**(1): 125-132.

Chen, P., Y. Zhu, Y. Men, Y. Zeng and Y. Sun (2018). "Purification and characterization of a novel alginate lyase from the marine Bacterium bacillus sp. Alg07." *Marine drugs* **16**(3): 86.

Cheow, W. S., M. W. Chang and K. Hadinoto (2010). "Antibacterial efficacy of inhalable levofloxacin-loaded polymeric nanoparticles against E. coli biofilm cells: the effect of antibiotic release profile." *Pharmaceutical research* **27**(8): 1597-1609.

Cheow, W. S., M. W. Chang and K. Hadinoto (2011). "The roles of lipid in anti-biofilm efficacy of lipid-polymer hybrid nanoparticles encapsulating antibiotics." *Colloids and Surfaces A: Physicochemical and Engineering Aspects* **389**(1-3): 158-165.

Chiang, W.-C., M. Nilsson, P. Ø. Jensen, N. Høiby, T. E. Nielsen, M. Givskov and T. Tolker-Nielsen (2013). "Extracellular DNA shields against aminoglycosides in *Pseudomonas aeruginosa* biofilms." *Antimicrobial agents and chemotherapy* **57**(5): 2352-2361.

Chou, T.-C., E. Fu, C.-J. Wu and J.-H. Yeh (2003). "Chitosan enhances platelet adhesion and aggregation." *Biochemical and Biophysical Research Communications* **302**(3): 480-483.

Church, D., S. Elsayed, O. Reid, B. Winston and R. Lindsay (2006). "Burn wound infections." *Clinical microbiology reviews* **19**(2): 403-434.

Cirioni, O., A. Giacometti, R. Ghiselli, G. Dell'Acqua, F. Orlando, F. Mocchegiani, C. Silvestri, A. Licci, V. Saba and G. Scalise (2006). "RNAIII-inhibiting peptide significantly reduces bacterial load and enhances the effect of antibiotics in the treatment of central venous catheter-associated *Staphylococcus aureus* infections." *Journal of Infectious Diseases* **193**(2): 180-186.

Cusumano, C. K., J. S. Pinkner, Z. Han, S. E. Greene, B. A. Ford, J. R. Crowley, J. P. Henderson, J. W. Janetka and S. J. Hultgren (2011). "Treatment and prevention of

urinary tract infection with orally active FimH inhibitors." *Science translational medicine* **3**(109): 109ra115-109ra115.

Danese, P. N., L. A. Pratt and R. Kolter (2000). "Exopolysaccharide production is required for development of *Escherichia coli* K-12 biofilm architecture." *J Bacteriol* **182**(12): 3593-3596.

Darouiche, R. O., I. I. Raad, S. O. Heard, J. I. Thornby, O. C. Wenker, A. Gabrielli, J. Berg, N. Khardori, H. Hanna and R. Hachem (1999). "A comparison of two antimicrobial-impregnated central venous catheters." *New England Journal of Medicine* **340**(1): 1-8.

Davies, D. G. and C. N. Marques (2009). "A fatty acid messenger is responsible for inducing dispersion in microbial biofilms." *Journal of bacteriology* **191**(5): 1393-1403.

Del Pozo, J. and R. Patel (2007). "The challenge of treating biofilm-associated bacterial infections." *Clinical Pharmacology & Therapeutics* **82**(2): 204-209.

Del Pozo, J. L. and R. Patel (2009). "Infection associated with prosthetic joints." *New England Journal of Medicine* **361**(8): 787-794.

DeSanti, L. (2005). "Pathophysiology and current management of burn injury." *Advances in skin & wound care* **18**(6): 323-332.

Enayati, M., E. Stride, M. Edirisinghe and W. Bonfield (2012). "Modification of the release characteristics of estradiol encapsulated in PLGA particles via surface coating." *Therapeutic delivery* **3**(2): 209-226.

Falagas, M. E., K. Fragoulis, I. A. Bliziotis and I. Chatzinikolaou (2007). "Rifampicin-impregnated central venous catheters: a meta-analysis of randomized controlled trials." *Journal of Antimicrobial Chemotherapy* **59**(3): 359-369.

Flemming, H.-C. and J. Wingender (2010). "The biofilm matrix." *Nature reviews. Microbiology* **8**(9): 623.

Flemming, H.-C. and J. Wingender (2010). "The biofilm matrix." *Nature reviews microbiology* **8**(9): 623.

Flume, P. A., P. J. Mogayzel Jr, K. A. Robinson, R. L. Rosenblatt, L. Quittell and B. C. Marshall (2010). "Cystic fibrosis pulmonary guidelines: pulmonary complications: hemoptysis and pneumothorax." *American journal of respiratory and critical care medicine* **182**(3): 298-306.

Fox, C. L. (1968). "Silver sulfadiazine—a new topical therapy for pseudomonas in burns: therapy of pseudomonas infection in burns." *Archives of surgery* **96**(2): 184-188.

Fox, C. L. and S. M. Modak (1974). "Mechanism of silver sulfadiazine action on burn wound infections." *Antimicrobial agents and chemotherapy* **5**(6): 582-588.

Gade, S., K. K. Patel, C. Gupta, M. M. Anjum, D. Deepika, A. K. Agrawal and S. Singh (2019). "An ex vivo Evaluation of Moxifloxacin Nanostructured Lipid Carrier enriched in situ gel for Transcorneal permeation on Goat Cornea." *Journal of pharmaceutical sciences* **108**(9). 2905-2916.

Garg, A. and S. Singh (2014). "Targeting of eugenol-loaded solid lipid nanoparticles to the epidermal layer of human skin." *Nanomedicine* **9**(8): 1223-1238.

Glonti, T., N. Chanishvili and P. Taylor (2010). "Bacteriophage-derived enzyme that depolymerizes the alginate capsule associated with cystic fibrosis isolates of *Pseudomonas aeruginosa*." *Journal of applied microbiology* **108**(2): 695-702.

Gnanadhas, D. P., M. Ben Thomas, M. Elango, A. M. Raichur and D. Chakravorty (2013). "Chitosan–dextran sulphate nanocapsule drug delivery system as an effective therapeutic against intraphagosomal pathogen *Salmonella*." *Journal of Antimicrobial Chemotherapy* **68**(11): 2576-2586.

Grenha, A., B. Seijo and C. Remunán-López (2005). "Microencapsulated chitosan nanoparticles for lung protein delivery." *European journal of pharmaceutical sciences* **25**(4-5): 427-437.

Grenha, A., B. Seijo, C. Serra and C. Remunán-López (2007). "Chitosan nanoparticle-loaded mannitol microspheres: structure and surface characterization." *Biomacromolecules* **8**(7): 2072-2079.

Grkovic, S., M. H. Brown and R. A. Skurray (2002). "Regulation of bacterial drug export systems." *Microbiol. Mol. Biol. Rev.* **66**(4): 671-701.

Hancock, R. E. (1997). "The bacterial outer membrane as a drug barrier." *Trends in microbiology* **5**(1): 37-42.

Harde, H., A. K. Agrawal and S. Jain (2014). "Development of stabilized glucomannosylated chitosan nanoparticles using tandem crosslinking method for oral vaccine delivery." *Nanomedicine* **9**(16): 2511-2529.

Hatch, R. A. and N. L. Schiller (1998). "Alginate Lyase Promotes Diffusion of Aminoglycosides through the Extracellular Polysaccharide of *MucoidPseudomonas aeruginosa*." *Antimicrobial agents and chemotherapy* **42**(4): 974-977.

Henning, A., M. Schneider, N. Nafee, L. Muijs, E. Rytting, X. Wang, T. Kissel, D. Grafahrend, D. Klee and C.-M. Lehr (2010). "Influence of particle size and material properties on mucociliary clearance from the airways." *Journal of aerosol medicine and pulmonary drug delivery* **23**(4): 233-241.

Hidalgo, A., A. Cruz and J. Pérez-Gil (2015). "Barrier or carrier? Pulmonary surfactant and drug delivery." *European Journal of Pharmaceutics and Biopharmaceutics* **95**: 117-127.

Hidalgo, E. and C. Dominguez (1998). "Study of cytotoxicity mechanisms of silver nitrate in human dermal fibroblasts." *Toxicology letters* **98**(3): 169-179.

Hook, A. L., C.-Y. Chang, J. Yang, J. Luckett, A. Cockayne, S. Atkinson, Y. Mei, R. Bayston, D. J. Irvine and R. Langer (2012). "Combinatorial discovery of polymers resistant to bacterial attachment." *Nature biotechnology* **30**(9): 868.

Hooper, D. C., J. S. Wolfson, E. Y. Ng and M. N. Swartz (1987). "Mechanisms of action of and resistance to ciprofloxacin." *The American journal of medicine* **82**(4A): 12-20.

Horsman, S. R., R. A. Moore and S. Lewenza (2012). "Calcium chelation by alginate activates the type III secretion system in mucoid *Pseudomonas aeruginosa* biofilms." *PLoS One* **7**(10): e46826.

Hou, J., X. Yu, Y. Shen, Y. Shi, C. Su and L. Zhao (2017). "Triphenyl phosphine-functionalized chitosan nanoparticles enhanced antitumor efficiency through targeted delivery of doxorubicin to mitochondria." *Nanoscale research letters* **12**(1): 158.

Hurley, M. N., M. Cámara and A. R. Smyth (2012). "Novel approaches to the treatment of *Pseudomonas aeruginosa* infections in cystic fibrosis." *European Respiratory Journal* **40**(4): 1014-1023.

Hymes, S. R., T. M. Randis, T. Y. Sun and A. J. Ratner (2013). "DNase inhibits *Gardnerella vaginalis* biofilms in vitro and in vivo." *The Journal of infectious diseases* **207**(10): 1491-1497.

Jain, S., H. Harde, A. Indulkar and A. K. Agrawal (2014). "Improved stability and immunological potential of tetanus toxoid containing surface engineered bilosomes following oral administration." *Nanomedicine: Nanotechnology, Biology and Medicine* **10**(2): 431-440.

Jain, S., S. R. Patil, N. K. Swarnakar and A. K. Agrawal (2012). "Oral delivery of doxorubicin using novel polyelectrolyte-stabilized liposomes (layersomes)." *Molecular pharmaceutics* **9**(9): 2626-2635.

Jain, S., J. M. Sharma, A. K. Agrawal and R. R. Mahajan (2013). "Surface stabilized efavirenz nanoparticles for oral bioavailability enhancement." *Journal of biomedical nanotechnology* **9**(11): 1862-1874.

Jamal, M., W. Ahmad, S. Andleeb, F. Jalil, M. Imran, M. A. Nawaz, T. Hussain, M. Ali, M. Rafiq and M. A. Kamil (2018). "Bacterial biofilm and associated infections." *Journal of the Chinese Medical Association* **81**(1): 7-11.

Jeong, L., M. H. Kim, J.-Y. Jung, B. M. Min and W. H. Park (2014). "Effect of silk fibroin nanofibers containing silver sulfadiazine on wound healing." *International journal of nanomedicine* **9**: 5277.

Ji, G., R. C. Beavis and R. P. Novick (1995). "Cell density control of staphylococcal virulence mediated by an octapeptide pheromone." *Proceedings of the National Academy of Sciences* **92**(26): 12055-12059.

Jørgensen, K. M., T. Wassermann, P. Ø. Jensen, W. Hengzuang, S. Molin, N. Høiby and O. Ciofu (2013). "Sublethal ciprofloxacin treatment leads to rapid development of high-level ciprofloxacin resistance during long-term experimental evolution of *Pseudomonas aeruginosa*." *Antimicrobial agents and chemotherapy* **57**(9): 4215-4221.

Kaler, A., A. K. Mittal, M. Katariya, H. Harde, A. K. Agrawal, S. Jain and U. C. Banerjee (2014). "An investigation of in vivo wound healing activity of biologically synthesized silver nanoparticles." *Journal of nanoparticle research* **16**(9): 2605.

Kaplan, J. B., K. LoVetri, S. T. Cardona, S. Madhyastha, I. Sadovskaya, S. Jabbouri and E. A. Izano (2012). "Recombinant human DNase I decreases biofilm and increases antimicrobial susceptibility in staphylococci." *The Journal of antibiotics* **65**(2): 73.

Khalid, M. and H. S. El-Sawy (2017). "Polymeric nanoparticles: Promising platform for drug delivery." *International journal of pharmaceutics* **528**(1-2): 675-691.

Khorasani, G., S. J. Hosseinimehr, M. Azadbakht, A. Zamani and M. R. Mahdavi (2009). "Aloe versus silver sulfadiazine creams for second-degree burns: a randomized controlled study." *Surgery today* **39**(7): 587-591.

Kidd, T. J., R. Canton, M. Ekkelenkamp, H. K. Johansen, P. Gilligan, J. J. LiPuma, S. C. Bell, J. S. Elborn, P. A. Flume and D. R. VanDevanter (2018). "Defining antimicrobial resistance in cystic fibrosis." *Journal of Cystic Fibrosis* **17**(6):696-704.

Kirsner, R. S. and W. H. Eaglstein (1993). "The wound healing process." *Dermatologic clinics* **11**(4): 629-640.

Kong, M., X. G. Chen, K. Xing and H. J. Park (2010). "Antimicrobial properties of chitosan and mode of action: a state of the art review." *International journal of food microbiology* **144**(1): 51-63.

Kushwah, V., S. S. Katiyar, A. K. Agrawal, R. C. Gupta and S. Jain (2018). "Co-delivery of docetaxel and gemcitabine using PEGylated self-assembled stealth nanoparticles for improved breast cancer therapy." *Nanomedicine: Nanotechnology, Biology and Medicine* **14**(5): 1629-1641.

Lebeaux, D., J.-M. Ghigo and C. Beloin (2014). "Biofilm-related infections: bridging the gap between clinical management and fundamental aspects of recalcitrance toward antibiotics." *Microbiol. Mol. Biol. Rev.* **78**(3): 510-543.

Liang, Z., R. Ni, J. Zhou and S. Mao (2015). "Recent advances in controlled pulmonary drug delivery." *Drug discovery today* **20**(3): 380-389.

Lichtenstein, A. and R. Margalit (1995). "Liposome-encapsulated silver sulfadiazine (SSD) for the topical treatment of infected burns: Thermodynamics of drug encapsulation and kinetics of drug release." *Journal of inorganic biochemistry* **60**(3): 187-198.

Lyczak, J. B., C. L. Cannon and G. B. Pier (2002). "Lung infections associated with cystic fibrosis." *Clinical microbiology reviews* **15**(2): 194-222.

Mah, T.-F. C. and G. A. O'Toole (2001). "Mechanisms of biofilm resistance to antimicrobial agents." *Trends in microbiology* **9**(1): 34-39.

Mai, G., J. McCormack, W. Seow, G. Pier, L. Jackson and Y. Thong (1993). "Inhibition of adherence of mucoid *Pseudomonas aeruginosa* by alginase, specific monoclonal antibodies, and antibiotics." *Infection and immunity* **61**(10): 4338-4343.

Maiorana, A., F. Bugli, M. Papi, R. Torelli, G. Ciasca, G. Maulucci, V. Palmieri, M. Cacaci, F. Paroni Sterbini and B. Posteraro (2015). "Effect of alginate lyase on biofilm-grown *Helicobacter pylori* probed by atomic force microscopy." *International Journal of Polymer Science* 1-16 **2015**.

Martins, M., M. Henriques, J. L. Lopez-Ribot and R. Oliveira (2012). "Addition of DNase improves the in vitro activity of antifungal drugs against *Candida albicans* biofilms." *Mycoses* **55**(1): 80-85.

Maya, S., S. Indulekha, V. Sukhithasri, K. Smitha, S. V. Nair, R. Jayakumar and R. Biswas (2012). "Efficacy of tetracycline encapsulated O-carboxymethyl chitosan nanoparticles against intracellular infections of *Staphylococcus aureus*." *International journal of biological macromolecules* **51**(4): 392-399.

- Mayhall, C. G. (2003). "The epidemiology of burn wound infections: then and now." *Clin Infect Dis* **37**(4): 543-550.
- McKenney, D., J. Hübner, E. Muller, Y. Wang, D. A. Goldmann and G. B. Pier (1998). "The ica locus of *Staphylococcus epidermidis* encodes production of the capsular polysaccharide/adhesin." *Infection and immunity* **66**(10): 4711-4720.
- Meddings, J., M. A. Rogers, M. Macy and S. Saint (2010). "Systematic review and meta-analysis: reminder systems to reduce catheter-associated urinary tract infections and urinary catheter use in hospitalized patients." *Clinical Infectious Diseases* **51**(5): 550-560.
- Miller, M. B. and B. L. Bassler (2001). "Quorum sensing in bacteria." *Annual Reviews in Microbiology* **55**(1): 165-199.
- Mitsunaga Junior, J. K., A. Gragnani, M. L. C. Ramos and L. M. Ferreira (2012). "Rat an experimental model for burns: a systematic review." *Acta cirurgica brasileira* **27**(6): 417-423.
- Morones-Ramirez, J. R., J. A. Winkler, C. S. Spina and J. J. Collins (2013). "Silver enhances antibiotic activity against gram-negative bacteria." *Science translational medicine* **5**(190): 190ra181-190ra181.
- Mu, H., J. Tang, Q. Liu, C. Sun, T. Wang and J. Duan (2016). "Potent antibacterial nanoparticles against biofilm and intracellular bacteria." *Scientific reports* **6**: 18877.
- Müller, R. H., K. Mäder and S. Gohla (2000). "Solid lipid nanoparticles (SLN) for controlled drug delivery—a review of the state of the art." *European journal of pharmaceuticals and biopharmaceutics* **50**(1): 161-177.
- Müller, R. H., M. Radtke and S. A. Wissing (2002). "Solid lipid nanoparticles (SLN) and nanostructured lipid carriers (NLC) in cosmetic and dermatological preparations." *Advanced drug delivery reviews* **54**: S131-S155.
- Muttill, P., J. Kaur, K. Kumar, A. B. Yadav, R. Sharma and A. Misra (2007). "Inhalable microparticles containing large payload of anti-tuberculosis drugs." *European journal of pharmaceutical sciences* **32**(2): 140-150.

Nafee, N., A. Husari, C. K. Maurer, C. Lu, C. de Rossi, A. Steinbach, R. W. Hartmann, C.-M. Lehr and M. Schneider (2014). "Antibiotic-free nanotherapeutics: ultra-small, mucus-penetrating solid lipid nanoparticles enhance the pulmonary delivery and anti-virulence efficacy of novel quorum sensing inhibitors." *Journal of Controlled Release* **192**: 131-140.

Nagpal, K., S. K. Singh and D. Mishra (2013). "Evaluation of safety and efficacy of brain targeted chitosan nanoparticles of minocycline." *International journal of biological macromolecules* **59**: 20-28.

Newman, S. P. (2017). "Drug delivery to the lungs: challenges and opportunities." *Therapeutic delivery* **8**(8): 647-661.

Okshevsky, M., V. R. Regina and R. L. Meyer (2015). "Extracellular DNA as a target for biofilm control." *Current opinion in biotechnology* **33**: 73-80.

Oliver, A., R. Cantón, P. Campo, F. Baquero and J. Blázquez (2000). "High frequency of hypermutable *Pseudomonas aeruginosa* in cystic fibrosis lung infection." *Science* **288**(5469): 1251-1253.

Olson, M. E., H. Ceri, D. W. Morck, A. G. Buret and R. R. Read (2002). "Biofilm bacteria: formation and comparative susceptibility to antibiotics." *Canadian Journal of Veterinary Research* **66**(2): 86.

Owlia, P., R. Nosrati, R. Alaghebandan and A. R. Lari (2014). "Antimicrobial susceptibility differences among mucoid and non-mucoid *Pseudomonas aeruginosa* isolates." *GMS hygiene and infection control* **9**(2).

Pang, Z., R. Raudonis, B. R. Glick, T.-J. Lin and Z. Cheng (2018). "Antibiotic resistance in *Pseudomonas aeruginosa*: mechanisms and alternative therapeutic strategies." *Biotechnology advances* **37**(1), 177-192.

Patel, K. K., S. Gade, M. M. Anjum, S. K. Singh, P. Maiti, A. K. Agrawal and S. Singh (2019). "Effect of penetration enhancers and amorphization on transdermal permeation flux of raloxifene-encapsulated solid lipid nanoparticles: an ex vivo study on human skin." *Applied Nanoscience*: **9**(6), 1383-1394.

- Patel, K. K., M. Tripathi, N. Pandey, A. K. Agrawal, S. Gade, M. Anjum, R. Tilak and S. Singh (2019). "Alginate Lyase Immobilized Chitosan Nanoparticles of Ciprofloxacin for the improved antimicrobial activity against the Biofilm associated mucoid *P. aeruginosa* infection in Cystic Fibrosis." *International Journal of Pharmaceutics* **563**, 30-42.
- Pereira, T., D. Dos Santos, M. H. M. Lima-Ribeiro, N. T. de Pontes-Filho, A. M. d. A. Carneiro-Leão and M. T. d. S. Correia (2012). "Development of animal model for studying deep second-degree thermal burns." *BioMed Research International* **2012**.
- Poon, V. K. and A. Burd (2004). "In vitro cytotoxicity of silver: implication for clinical wound care." *Burns* **30**(2): 140-147.
- Pozo, J. and R. Patel (2007). "The challenge of treating biofilm-associated bacterial infections." *Clinical Pharmacology & Therapeutics* **82**(2): 204-209.
- Prochazkova, S., K. M. Vårum and K. Ostgaard (1999). "Quantitative determination of chitosans by ninhydrin." *Carbohydrate polymers* **38**(2): 115-122.
- Qi, L., Z. Xu, X. Jiang, C. Hu and X. Zou (2004). "Preparation and antibacterial activity of chitosan nanoparticles." *Carbohydrate research* **339**(16): 2693-2700.
- Quinton, P. M. (1983). "Chloride impermeability in cystic fibrosis." *Nature* **301**(5899): 421.
- R Benveniste, a. and J. Davies (1973). "Mechanisms of Antibiotic Resistance in Bacteria." *Annual Review of Biochemistry* **42**(1): 471-506.
- Rafla, K. and E. E. Tredget (2011). "Infection control in the burn unit." *Burns* **37**(1): 5-15.
- Ramos-Gallardo, G. (2016). "Chronic Wounds in Burn Injury: A Case Report on Importance of Biofilms." *World journal of plastic surgery* **5**(2): 175.
- Ramsey, D. M. and D. J. Wozniak (2005). "Understanding the control of *Pseudomonas aeruginosa* alginate synthesis and the prospects for management of chronic infections in cystic fibrosis." *Molecular microbiology* **56**(2): 309-322.

Ranasinha, C., B. Assoufi, D. Geddes, M. Hodson, D. Empey, S. Shak, D. Christiansen and H. Fuchs (1993). "Efficacy and safety of short-term administration of aerosolised recombinant human DNase I in adults with stable stage cystic fibrosis." *The Lancet* **342**(8865): 199-202.

Rojas, I. A., J. B. Slunt and D. W. Grainger (2000). "Polyurethane coatings release bioactive antibodies to reduce bacterial adhesion." *Journal of Controlled Release* **63**(1-2): 175-189.

Rowan, M. P., L. C. Cancio, E. A. Elster, D. M. Burmeister, L. F. Rose, S. Natesan, R. K. Chan, R. J. Christy and K. K. Chung (2015). "Burn wound healing and treatment: review and advancements." *Critical care* **19**(1): 243.

Sabaeifard, P., A. Abdi-Ali, C. Gamazo, J. M. Irache and M. R. Soudi (2017). "Improved effect of amikacin-loaded poly (D, L-lactide-co-glycolide) nanoparticles against planktonic and biofilm cells of *Pseudomonas aeruginosa*." *Journal of medical microbiology* **66**(2): 137-148.

Sandri, G., M. C. Bonferoni, F. D'Autilia, S. Rossi, F. Ferrari, P. Grisoli, M. Sorrenti, L. Catenacci, C. Del Fante and C. Perotti (2013). "Wound dressings based on silver sulfadiazine solid lipid nanoparticles for tissue repairing." *European Journal of Pharmaceutics and Biopharmaceutics* **84**(1): 84-90.

Sarkisova, S., M. A. Patrauchan, D. Berglund, D. E. Nivens and M. J. Franklin (2005). "Calcium-induced virulence factors associated with the extracellular matrix of mucoid *Pseudomonas aeruginosa* biofilms." *Journal of bacteriology* **187**(13): 4327-4337.

Sauer, K., A. K. Camper, G. D. Ehrlich, J. W. Costerton and D. G. Davies (2002). "*Pseudomonas aeruginosa* displays multiple phenotypes during development as a biofilm." *Journal of bacteriology* **184**(4): 1140-1154.

Saxena, S., G. Banerjee, R. Garg and M. Singh (2014). "Comparative study of biofilm formation in *Pseudomonas aeruginosa* isolates from patients of lower respiratory tract infection." *Journal of Clinical and Diagnostic Research: JCDR* **8**(5): DC09.

Scarano, A., M. Piattelli, S. Caputi, G. A. Favero and A. Piattelli (2004). "Bacterial adhesion on commercially pure titanium and zirconium oxide disks: an in vivo human study." *Journal of periodontology* **75**(2): 292-296.

Sevgi, M., A. Toklu, D. Vecchio and M. R Hamblin (2013). "Topical antimicrobials for burn infections—an update." *Recent patents on anti-infective drug discovery* **8**(3): 161-197.

Shah, P., A. Bush, G. Canny, A. Colin, H. Fuchs, D. Geddes, C. Johnson, M. Light, S. Scott and D. Tullis (1995). "Recombinant human DNase I in cystic fibrosis patients with severe pulmonary disease: a short-term, double-blind study followed by six months open-label treatment." *European Respiratory Journal* **8**(6): 954-958.

Shak, S., D. J. Capon, R. Hellmiss, S. A. Marsters and C. L. Baker (1990). "Recombinant human DNase I reduces the viscosity of cystic fibrosis sputum." *Proceedings of the National Academy of Sciences* **87**(23): 9188-9192.

Singh, S. K., P. Dadhania, P. R. Vuddanda, A. Jain, S. Velaga and S. Singh (2016). "Intranasal delivery of asenapine loaded nanostructured lipid carriers: formulation, characterization, pharmacokinetic and behavioural assessment." *RSC Advances* **6**(3): 2032-2045.

Singh, Y., P. R. Vuddanda, A. Jain, S. Parihar, T. P. Chaturvedi and S. Singh (2015). "Mucoadhesive gel containing immunotherapeutic nanoparticulate satranidazole for treatment of periodontitis: development and its clinical implications." *RSC Advances* **5**(59): 47659-47670.

Soto, S. M. (2014). "Importance of Biofilms in Urinary Tract Infections: New Therapeutic Approaches." *Advances in Biology* **2014**: 13.

Spoering, A. L. and K. Lewis (2001). "Biofilms and planktonic cells of *Pseudomonas aeruginosa* have similar resistance to killing by antimicrobials." *Journal of bacteriology* **183**(23): 6746-6751.

Stewart, P. S. (2002). "Mechanisms of antibiotic resistance in bacterial biofilms." *International Journal of Medical Microbiology* **292**(2): 107-113.

Suk, J. S., S. K. Lai, Y.-Y. Wang, L. M. Ensign, P. L. Zeitlin, M. P. Boyle and J. Hanes (2009). "The penetration of fresh undiluted sputum expectorated by cystic fibrosis patients by non-adhesive polymer nanoparticles." *Biomaterials* **30**(13): 2591-2597.

Swartjes, J. J., T. Das, S. Sharifi, G. Subbiahdoss, P. K. Sharma, B. P. Krom, H. J. Busscher and H. C. van der Mei (2013). "A functional DNase I coating to prevent adhesion of bacteria and the formation of biofilm." *Advanced Functional Materials* **23**(22): 2843-2849.

T Rybtke, M., P. O Jensen, N. Hoiby, M. Givskov, T. Tolker-Nielsen and T. Bjarnsholt (2011). "The implication of *Pseudomonas aeruginosa* biofilms in infections." *Inflammation & Allergy-Drug Targets (Formerly Current Drug Targets-Inflammation & Allergy)* **10**(2): 141-157.

Tamkovich, S. N., A. V. Cherepanova, E. V. Kolesnikova, E. Y. Rykova, D. V. Pyshnyi, V. V. Vlassov and P. P. Laktionov (2006). "Circulating DNA and DNase activity in human blood." *Annals of the New York Academy of Sciences* **1075**(1): 191-196.

Thattaruparambil Raveendran, N., A. Mohandas, R. Ramachandran Menon, A. Somasekharan Menon, R. Biswas and R. Jayakumar (2018). "Ciprofloxacin-and Fluconazole-Containing Fibrin-Nanoparticle-Incorporated Chitosan Bandages for the Treatment of Polymicrobial Wound Infections." *ACS Applied Bio Materials* **2**(1): 243-254.

Toti, U. S., B. R. Guru, M. Hali, C. M. McPharlin, S. M. Wykes, J. Panyam and J. A. Whittum-Hudson (2011). "Targeted delivery of antibiotics to intracellular chlamydial infections using PLGA nanoparticles." *Biomaterials* **32**(27): 6606-6613.

Tré-Hardy, M., F. Vanderbist, H. Traore and M. J. Devleeschouwer (2008). "In vitro activity of antibiotic combinations against *Pseudomonas aeruginosa* biofilm and planktonic cultures." *International journal of antimicrobial agents* **31**(4): 329-336.

Turakhia, M. H. and W. G. Characklis (1989). "Activity of *Pseudomonas aeruginosa* in biofilms: effect of calcium." *Biotechnology and bioengineering* **33**(4): 406-414.

Uchechi, O., J. D. Ogbonna and A. A. Attama (2014). Nanoparticles for dermal and transdermal drug delivery. *Application of Nanotechnology in Drug Delivery*, IntechOpen 193-235.

Van Acker, H., P. Van Dijck and T. Coenye (2014). "Molecular mechanisms of antimicrobial tolerance and resistance in bacterial and fungal biofilms." *Trends in microbiology* **22**(6): 326-333.

Velnar, T., T. Bailey and V. Smrkolj (2009). "The wound healing process: an overview of the cellular and molecular mechanisms." *Journal of International Medical Research* **37**(5): 1528-1542.

Venkataraman, M. and M. Nagarsenker (2013). "Silver sulfadiazine nanosystems for burn therapy." *AAPS PharmSciTech* **14**(1): 254-264.

Vijayakumar, M. R., L. Kumari, K. K. Patel, P. R. Vuddanda, K. Y. Vajanthri, S. K. Mahto and S. Singh (2016). "Intravenous administration of trans-resveratrol-loaded TPGS-coated solid lipid nanoparticles for prolonged systemic circulation, passive brain targeting and improved in vitro cytotoxicity against C6 glioma cell lines." *RSC Advances* **6**(55): 50336-50348.

Wang, J. J., Z. W. Zeng, R. Z. Xiao, T. Xie, G. L. Zhou, X. R. Zhan and S. L. Wang (2011). "Recent advances of chitosan nanoparticles as drug carriers." *International journal of nanomedicine* **6**: 765.

Wang, L., C. Hu and L. Shao (2017). "The antimicrobial activity of nanoparticles: present situation and prospects for the future." *International journal of nanomedicine* **12**: 1227.

Whitchurch, C. B., T. Tolker-Nielsen, P. C. Ragas and J. S. Mattick (2002). "Extracellular DNA required for bacterial biofilm formation." *Science* **295**(5559): 1487-1487.

White, R. and R. Cooper (2005). "Silver sulphadiazine: a review of the evidence." *Wounds uk* **1**(2): 51.

Wong, T. Y., L. A. Preston and N. L. Schiller (2000). "Alginate lyase: review of major sources and enzyme characteristics, structure-function analysis, biological roles, and applications." *Annual Reviews in Microbiology* **54**(1): 289-340.

Wu, H., C. Moser, H.-Z. Wang, N. Høiby and Z.-J. Song (2015). "Strategies for combating bacterial biofilm infections." *International journal of oral science* **7**(1): 1-7.

Xie, S., L. Zhu, Z. Dong, Y. Wang, X. Wang and W. Zhou (2011). "Preparation and evaluation of ofloxacin-loaded palmitic acid solid lipid nanoparticles." *International journal of nanomedicine* **6**: 547-555.

Yamada, K. J. and T. Kielian (2019). "Biofilm-leukocyte cross-talk: impact on immune polarization and immunometabolism." *Journal of innate immunity* **11**(3): 280-288.

Yang, Y., N. Bajaj, P. Xu, K. Ohn, M. D. Tsifansky and Y. Yeo (2009). "Development of highly porous large PLGA microparticles for pulmonary drug delivery." *Biomaterials* **30**(10): 1947-1953.