DAFTAR PUSTAKA

Amiri, M., Bezaatpour, A., Jafari, H., Boukherroub, R., dan Szunerits, S., 2018, Electrochemical methodologies for the detection of pathogens, *ACS Sens.*, 3 (6), 1069–1086.

Ashokan, I. dan Bhunia, S.K., 2023, Boron and nitrogen co-doped bright yellow fluorescent carbon dots as real-time selective detection of phthalic acid plasticizer in aqueous medium, *J. Photochem. Photobiol., A.*, 437, 114489.

Atchudan, R., Edison, T.N.J.I., dan Lee, Y.R., 2016, Nitrogen-doped carbon dots originating from unripe peach for fluorescent bioimaging and electrocatalytic oxygen reduction reaction, *J. Colloid Interface Sci.*, 482, 8–18.

Atchudan, R., Perumal, S., Karthikeyan, D., Pandurangan, A., dan Lee, Y.R., 2015, Synthesis and characterization of graphitic mesoporous carbon using metal-metal oxide by chemical vapor deposition method, *Microporous Mesoporous Mater.*, 215, 123–132.

Al Awak, M.M., Wang, P., Wang, S., Tang, Y., Sun, Y.P., dan Yang, L., 2017, Correlation of carbon dots' light-activated antimicrobial activities and fluorescence quantum yield, *RSC Adv.*, 7 (48), 30177–30184.

Barman, Monoj Kumar and Jana, Bikash and Bhattacharyya, Santanu and Patra, A., 2014, Photophysical properties of doped carbon dots (N , P and B) and their influence on electron / hole transfer in carbon dots- Nickel, *J. Phys. Chem. C*, 118 (Ii), 20034–20041.

Bhaisare, M.L., Gedda, G., Khan, M.S., dan Wu, H.F., 2016, Fluorimetric detection of pathogenic bacteria using magnetic carbon dots, *Anal. Chim. Acta*, 920, 63–71.

Broekgaarden, M., Weijer, R., van Gulik, T.M., Hamblin, M.R., dan Heger, M., 2015, Tumor cell survival pathways activated by photodynamic therapy: a molecular basis for pharmacological inhibition strategies, *Cancer Metastasis Rev.*, 34 (4), 643–690.

Carriço, J.A., Sabat, A.J., Friedrich, A.W., dan Ramirez, M., 2013, Bioinformatics in bacterial molecular epidemiology and public health: Databases, tools and the next-generation sequencing revolution, *Euro Surveille*, 18 (4), 1–8.

Chambers, H.F., 2003, Solving staphylococcal resistance to β-lactams, *Trends Microbiol.*, 11 (4), 145–148.

Chan, K.K., 2019, unique selectivity-tunable characteristics for ferric ion detection and cellular imaging applications, *New J. Chem*, 43, 4734-4744.

Chan, K.K., Yap, S.H.K., dan Yong, K.T., 2018, *Biogreen Synthesis of Carbon Dots for Biotechnology and Nanomedicine Applications*, Springer Berlin Heidelberg.

Chandra, S., Chowdhuri, A.R., Mahto, T.K., Samui, A., dan Sahu, S.K., 2016,

One-step synthesis of amikacin modified fluorescent carbon dots for the detection of Gram-negative bacteria like: *Escherichia coli*, *RSC Adv.*, 6 (76), 72471–72478.

Chandra, S., Mahto, T.K., Chowdhuri, A.R., Das, B., dan Sahu, S. kumar, 2017, One step synthesis of functionalized carbon dots for the ultrasensitive detection of *Escherichia coli* and iron (III), *Sensors Actuators, B Chem.*, 245, 835–844.

Chen, C.S., Yokokawa, A.S., Tseng, K.H., Wang, M.H., Ma, K.S.K., dan Wan, C.F., 2023, A novel method for synthesis of carbon dots and their applications in reactive oxygen species (ROS) and glucose detections, *RSC Adv.*, 13 (40), 28250–28261.

Cheng, C., Shi, Y., Li, M., Xing, M., dan Wu, Q., 2017, Carbon quantum dots from carbonized walnut shells: Structural evolution, fluorescence characteristics, and intracellular bioimaging, *Mater. Sci., Eng., C*, 79, 473–480.

Chuan Lim, E.W. dan Feng, R., 2012, Agglomeration of magnetic nanoparticles, *J. Chem. Phys.*, 136 (12),.

Crista, D.M.A., da Silva, J.C.G.E., dan da Silva, L.P., 2020, Evaluation of different bottom-up routes for the fabrication of carbon dots, *Nanomater.*, 10 (7), 1–15.

Cui, J., Luo, Q., Wei, C., Deng, X., Liang, H., Wei, J., Gong, Y., Tang, Q., Zhang, K., dan Liao, X., 2024, Electrochemical biosensing for *E.coli* detection based on triple helix DNA inhibition of CRISPR/Cas12a cleavage activity, *Anal. Chim. Acta*, 1285, 342028.

Cui, X., Wang, Yinglin, Liu, J., Yang, Q., Zhang, B., Gao, Y., Wang, Yue, dan Lu, G., 2017, Dual functional N- and S-co-doped carbon dots as the sensor for temperature and Fe^{3+} ions, *Sensors Actuators, B Chem.*, 242, 1272–1280.

Dong, X., Bond, A.E., Pan, N., Coleman, M., Tang, Y., Sun, Y.P., dan Yang, L., 2018, Synergistic photoactivated antimicrobial effects of carbon dots combined with dye photosensitizers, *Int J Nanomedicine*, 13, 8025–8035.

Dramsi, S., Magnet, S., Davison, S., dan Arthur, M., 2008, Covalent attachment of proteins to peptidoglycan, *FEMS Microbiol. Rev.*, 32 (2), 307–320.

Dwyer, D.J., Camacho, D.M., Kohanski, M.A., Callura, J.M., dan Collins, J.J., 2012, Antibiotic-induced bacterial cell death exhibits physiological and biochemical hallmarks of apoptosis, *Mol. Cell*, 46 (5), 561–572.

Dye, C., 2014, After 2015: Infectious diseases in a new era of health and development, *Philos. Trans. R. Soc. B.*, 369 (1645).

Fande, S., Amreen, K., Sriram, D., dan Goel, S., 2023, Microfluidic electrochemical device for real-time culturing and interference-free detection of *Escherichia coli*, *Anal. Chim. Acta*, 1237, 340591.

Al Farsi, B., Sofin, R.G.S., Al Shidhani, H., El-Shafey, E.S.I., Al-Hosni, A.S., Al

Marzouqi, F., Issac, A., Al Nabhani, A., dan Abou-Zied, O.K., 2022, The effect of microwave power level and post-synthesis annealing treatment on oxygen-based functional groups present on carbon quantum dots, *J. Lumin.*, 252, 119326.

Fini, A. dan Breccia, A., 1999, Chemistry by microwaves, *Pure Appl. Chem.*, 71 (4), 573–579.

Gao, R., Zhong, Z., Gao, X., dan Jia, L., 2018, Graphene oxide quantum dots Assisted construction of fluorescent aptasensor for rapid detection of *Pseudomonas aeruginosa* in food samples, *J. Agric. Food Chem.*, 66 (41), 10898–10905.

Ghosh, S., Barg, S., Jeong, S.M., dan Ostrikov, K., 2020, Heteroatom-doped and oxygen-functionalized nanocarbons for high-performance supercapacitors, *Adv. Energy Mater.*, 10 (32), 1–44.

Goel, N., Sinha, N., dan Kumar, B., 2013, Growth and properties of sodium tetraborate decahydrate single crystals, *Mater. Res. Bull.*, 48 (4), 1632–1636.

Gupta, A., Verma, N.C., Khan, S., dan Nandi, C.K., 2016, Carbon dots for naked eye colorimetric ultrasensitive arsenic and glutathione detection, *Biosens. Bioelectron.*, 81, 465–472.

Han, Y., Huang, H., Zhang, H., Liu, Y., Han, X., Liu, R., Li, H., dan Kang, Z., 2014, Carbon quantum dots with photoenhanced hydrogen-bond catalytic activity in aldol condensations, *ACS Catal.*, 4 (3), 781–787.

Hill, S.A., Benito-Alifonso, D., Davis, S.A., Morgan, D.J., Berry, M., dan Galan, M.C., 2018, Practical three-minute synthesis of acid-coated fluorescent carbon dots with tuneable core structure, *Sci. Rep.*, 8 (1), 1–10.

Ibrahim, M., Zango, U.U., Shawai, S.A.A., dan Shamsuddin, I.M., 2019, A review on beta-lactam antibiotic drug resistance, *Drug Des. Devel. Ther.*, 3 (2), 52–58.

Jana, D., Sun, C.L., Chen, L.C., dan Chen, K.H., 2013, Effect of chemical doping of boron and nitrogen on the electronic, optical, and electrochemical properties of carbon nanotubes, *Prog. Mater. Sci.*, 58 (5), 565–635.

Ji, Z., Ai, P., Shao, C., Wang, T., Yan, C., Ye, L., dan Gu, W., 2018, Manganese-doped carbon dots for magnetic resonance/optical dual-modal imaging of tiny brain glioma, *ACS Biomater Sci. Eng.*, 4 (6), 2089–2094.

Jian, H.J., Wu, R.S., Lin, T.Y., Li, Y.J., Lin, H.J., Harroun, S.G., Lai, J.Y., dan Huang, C.C., 2017, Super-cationic carbon quantum dots synthesized from spermidine as an eye drop formulation for topical treatment of bacterial keratitis, *ACS Nano*, 11 (7), 6703–6716.

Jijie, R., Barras, A., Bouckaert, J., Dumitrascu, N., Szunerits, S., dan Boukherroub, R., 2018a, Enhanced antibacterial activity of carbon dots functionalized with ampicillin combined with visible light triggered photodynamic effects, *Colloids Surf., B*, 170, 347–354.

Jijie, R., Barras, A., Bouckaert, J., Dumitrascu, N., Szunerits, S., dan Boukherroub, R., 2018b, Enhanced antibacterial activity of carbon dots functionalized with ampicillin combined with visible light triggered photodynamic effects, *Colloids Surf., B*, 170, 347–354.

Jing, X., Shan, S., Xing, K., Cao, W., Xiao, X., Liu, D., dan Lai, W., 2023, Sensitive fluorescence ELISA with streptavidin scaffolded DNA tetrads for the detection of *Escherichia coli* O157:H7, *J. Dairy Sci.*, 106 (9), 5930–5939.

Kalwar, N.H., Sirajuddin, Sherazi, S.T.H., Khaskheli, A.R., Hallam, K.R., Scott, T.B., Tagar, Z.A., Hassan, S.S., dan Soomro, R.A., 2013, Fabrication of small l-threonine capped nickel nanoparticles and their catalytic application, *Appl. Catal., A*, 453, 54–59.

Kang, Z. dan Lee, S.T., 2019, Carbon dots: Advances in nanocarbon applications, *Nanoscale*, 11 (41), 19214–19224.

Kaur, J., Sharma, S., Mehta, S.K., dan Kansal, S.K., 2020, Highly photoluminescent and pH sensitive nitrogen doped carbon dots (NCDs) as a fluorescent sensor for the efficient detection of Cr (VI) ions in aqueous media, *Spectrochimica Acta A Mol Biomol Spectroscopy.*, 227, 117572.

Korah, B.K., Punnoose, M.S., Thara, C.R., Abraham, T., Ambady, K.G., dan Mathew, B., 2022, Curcuma amada derived nitrogen-doped carbon dots as a dual sensor for tetracycline and mercury ions, *Diamond. Relat. Mater.*, 125, 108980.

Korah, B.K., Thara, C.R., John, N., John, B.K., Mathew, S., dan Mathew, B., 2023, Microwave abetted synthesis of carbon dots and its triple mode applications in tartrazine detection, manganese ion sensing and fluorescent ink, *Food Control*, 147, 109608.

Kou, X., Jiang, S., Park, S.J., dan Meng, L.Y., 2020, A review: recent advances in preparations and applications of heteroatom-doped carbon quantum dots, *Dalton Trans.*, 49, 6915-6938.

Kuo, W.S., Chen, H.H., Chen, S.Y., Chang, C.Y., Chen, P.C., Hou, Y.I., Shao, Y.T., Kao, H.F., Lilian Hsu, C.L., Chen, Y.C., Chen, S.J., Wu, S.R., dan Wang, J.Y., 2017, Graphene quantum dots with nitrogen-doped content dependence for highly efficient dual-modality photodynamic antimicrobial therapy and bioimaging, *Biomater*, 120, 185–194.

Li, H., Huang, J., Song, Y., Zhang, M., Wang, H., Lu, F., Huang, H., Liu, Y., Dai, X., Gu, Z., Yang, Z., Zhou, R., dan Kang, Z., 2018, Degradable carbon dots with broad-spectrum antibacterial activity, *ACS Appl. Mater. Interfaces*, 10 (32), 26936–26946.

Li, H., Kang, Z., Liu, Y., dan Lee, S.T., 2012, Carbon nanodots: Synthesis, properties and applications, *J. Mater. Chem.*, 22 (46), 24230–24253.

Li, H., Ming, H., Liu, Y., Yu, H., He, X., Huang, H., Pan, K., Kang, Z., dan Lee, S.T., 2011, Fluorescent carbon nanoparticles: Electrochemical synthesis and

their pH sensitive photoluminescence properties, *New J. Chem.*, 35 (11), 2666–2670.

Li, L. dan Dong, T., 2018, Photoluminescence tuning in carbon dots: Surface passivation or/and functionalization, heteroatom doping, *J. Materials. Chemistry. C*, 6 (30), 7944–7970.

Li, Y.J., Harroun, S.G., Su, Y.C., Huang, C.F., Unnikrishnan, B., Lin, H.J., Lin, C.H., dan Huang, C.C., 2016, Synthesis of self-assembled spermidine-carbon quantum dots effective against multidrug-resistant bacteria, *Adv. Healthc. Mater.*, 5 (19), 2545–2554.

Liang, J., Wang, W., dan Zeng, F., 2023, The purification and concentration of amoxicillin by novel alkali-sensitive polypiperazine amide/polysulfate composite nanofiltration membranes, *Sep. Purif. Technol.*, 326 (July), 124824.

Liu, E., Li, D., Zhou, X., Zhou, G., Xiao, H., Zhou, D., Tian, P., Guo, R., dan Qu, S., 2019, Highly emissive carbon dots in solid state and their applications in light-emitting devices and visible light communication, *ACS Sustain. Chem. Eng.*, 7 (10), 9301–9308.

Liu, Q., Zhang, N., Shi, H., Ji, W., Guo, X., Yuan, W., dan Hu, Q., 2018, One-step microwave synthesis of carbon dots for highly sensitive and selective detection of copper ions in aqueous solution, *New J. Chem.*, 42 (4), 3097–3101.

Liu, Y., Duan, W., Song, W., Liu, J., Ren, C., Wu, J., Liu, D., dan Chen, H., 2017, Red emission B, N, S-co-Doped carbon dots for colorimetric and fluorescent dual mode detection of Fe^{3+} ions in complex biological fluids and living cells, *ACS Appl. Mater. Interfaces*, 9 (14), 12663–12672.

Liu, Y., Roy, S., Sarkar, S., Xu, J., Zhao, Y., dan Zhang, J., 2021, A review of carbon dots and their composite materials for electrochemical energy technologies, *Carbon Energy*, 3 (5), 795–826.

Longo, A. V., Sciortino, A., Cannas, M., dan Messina, F., 2020, UV photobleaching of carbon nanodots investigated by: In situ optical methods, *Phys. Chem. Chem. Phys.*, 22 (24), 13398–13407.

Lu, Y., Li, L., Li, M., Lin, Z., Wang, L., Zhang, Y., Yin, Q., Xia, H., dan Han, G., 2018, Zero-dimensional carbon dots enhance bone regeneration, osteosarcoma ablation, and clinical bacterial eradication, *Bioconjugate. Chem.*, 29 (9), 2982–2993.

McEnroe, A., Brunt, E., Mosleh, N., Yu, J., Hailstone, R., dan Sun, X., 2023, Bright, green fluorescent carbon dots for sensitive and selective detection of ferrous ions, *Talanta Open*, 7, 100236.

Miao, X., Qu, D., Yang, D., Nie, B., Zhao, Y., Fan, H., dan Sun, Z., 2018, Synthesis of carbon dots with multiple color emission by controlled graphitization and surface functionalization, *Adv. Mater.*, 30 (1), 1–8.

Ming, F., Hou, J., Hou, C., Yang, M., Wang, X., Li, J., Huo, D., dan He, Q., 2019, One-step synthesized fluorescent nitrogen doped carbon dots from thymidine for Cr (VI) detection in water, *Spectrochimica Acta A Mol Biomol Spectroscopy.*, 222, 117165.

Moinet, M., Collis, R.M., Rogers, L., Devane, M.L., Biggs, P.J., Stott, R., Marshall, J., Muirhead, R., dan Cookson, A.L., 2024, Development of a multiplex droplet digital PCR assay for simultaneous detection and quantification of *Escherichia coli*, *E. marmotae*, and *E. ruysiae* in water samples, *J. Microbiol. Methods*, 220, 106909.

Moradlou, O., Rabiei, Z., dan Delavari, N., 2019, Antibacterial effects of carbon quantum dots@hematite nanostructures deposited on titanium against Gram-positive and Gram-negative bacteria, *J. Photochem. Photobiol. A Chem.*, 379, 144–149.

Munusamy, S., Mandlimath, T.R., Swetha, P., Al-Sehemi, A.G., Pannipara, M., Koppala, S., Shanmugam, P., Boonyuen, S., Pothu, R., dan Boddula, R., 2023, Nitrogen-doped carbon dots: Recent developments in its fluorescent sensor applications, *Environ. Res. J.*, 231 (P1), 116046.

Ortiz, S.N.C., Ospino, E.M., dan Cabanzo, R., 2016, Spectroscopy characterization and quantum yield determination of quantum dots, *J. Phys. Conf. Ser.*, 687 (1).

Pathak, A., Pv, S., Stanley, J., dan Satheesh Babu, T.G., 2019, Multicolor emitting N/S-doped carbon dots as a fluorescent probe for imaging pathogenic bacteria and human buccal epithelial cells, *Microchimica. Acta*, 186 (3), 2–11.

Putri, F.A.R., Mudasir, M., Morita, K., dan Suherman, S., 2019, Microwave-assisted synthesis of amikacin modified n, s co-doped carbon dots for *Escherichia coli* detection, *Chemosensors*, 7 (4),.

Qin, T., Wang, M., Wu, P., Zhang, Q., Kang, K., Ma, Y., Lin, Z., dan Wang, J., 2023, *Escherichia coli* surface-displayed by Sup35NM nanofibrils and Z-domains fusion protein for signal enhancement in a biolayer interferometry-based immunoassay, *Sens Actuators B Chem.*, 390,.

Qu, J.H., Wei, Q., dan Sun, D.W., 2018, Carbon dots: Principles and their applications in food quality and safety detection, *Crit. Rev. Food Sci. Nutr.*, 58 (14), 2466–2475.

Ramanujam, A., Neyhouse, B., Keogh, R.A., Muthuvel, M., Carroll, R.K., dan Botte, G.G., 2021, Rapid electrochemical detection of *Escherichia coli* using nickel oxidation reaction on a rotating disk electrode, *J. Chem. Eng.*, 411, 128453.

Ristic, B.Z., Milenkovic, M.M., Dakic, I.R., Todorovic-Markovic, B.M., Milosavljevic, M.S., Budimir, M.D., Paunovic, V.G., Dramicanin, M.D., Markovic, Z.M., dan Trajkovic, V.S., 2014, Photodynamic antibacterial effect of graphene quantum dots, *Biomater.*, 35 (15), 4428–4435.

Rohrer, S. dan Berger-Bächi, B., 2003, FemABX peptidyl transferases: A link between branched-chain cell wall peptide formation and β-lactam resistance in Gram-positive cocci, *Antimicrob. Agents Chemother.*, 47 (3), 837–846.

Rong, M.C., Zhang, K.X., Wang, Y.R., dan Chen, X., 2017, The synthesis of B, N-carbon dots by a combustion method and the application of fluorescence detection for Cu^{2+}, *Chin Chem. Lett.*, 28 (5), 1119–1124.

Sadhanala, H.K., Pagidi, S., dan Gedanken, A., 2021, High quantum yield boron-doped carbon dots: a ratiometric fluorescent probe for highly selective and sensitive detection of Mg^{2+} ions, *J. Mater. Chem.*, 9 (5), 1632–1640.

Sauvage, E., Kerff, F., Terrak, M., Ayala, J.A., dan Charlier, P., 2008, The penicillin-binding proteins: Structure and role in peptidoglycan biosynthesis, *FEMS Microbiology. Rev.*, 32 (2), 234–258.

Sen, S., Parveen, R., Paul, M., Ghosh, N.N., Im, J., dan Biswas, G., 2023, Self-gelation techniques for amoxicillin: formulation and characterization, *Appl. Surf. Sci.*, 18, 100466.

Sendão, R., Yuso, M. del V.M. de, Algarra, M., Esteves da Silva, J.C.G., dan Pinto da Silva, L., 2020, Comparative life cycle assessment of bottom-up synthesis routes for carbon dots derived from citric acid and urea, *J. Clean. Prod.*, 254, 1–10.

Serag, A., 2016, Different spectrophotometric methods applied for the analysis of binary mixture of flucloxacillin, *Spectrochim Acta A Mol Biomol Spectrosc.*, 161, 64-69.

Simanjuntak, H.A., Simanjuntak, H., Maimunah, S., Rahmiati, R., dan Situmorang, T.S., 2022, Diameter zona hambat antibiotik amoxicillin dan tetracycline terhadap *Escherichia coli*, *Herb. Med. J.*, 5 (2), 55–59.

Solati, N., Mobassem, S., Kahraman, A., Ogasawara, H., dan Kaya, S., 2019, A comprehensive study on the characteristic spectroscopic features of nitrogen doped graphene, *Appl. Surf. Sci.*, 495,.

Song, S., Hu, J., Li, M., Gong, X., Dong, C., dan Shuang, S., 2021, Fe^{3+} and intracellular pH determination based on orange fluorescence carbon dots co-doped with boron, nitrogen and sulfur, *Mater. Sci. Eng., C*, 118, 111478.

Suherman, S., Yoel, A.S., Suratman, A., dan Mudasir, M., 2024, Carbon dots modified multi dopants nitrogen and boron for an early detection of lead in the environtment, *Bull Environ Contam Toxicol*., 112, 71.

Sun, X. dan Lei, Y., 2017, Fluorescent carbon dots and their sensing applications, *Trends Analyt. Chem.*, 89, 163–180.

Sun, Y.P., Wang, P., Lu, Z., Yang, F., Meziani, M.J., LeCroy, G.E., Liu, Y., dan Qian, H., 2015, Host-guest carbon dots for enhanced optical properties and beyond, *Sci. Rep.*, 5, 1–6.

Tabaraki, R. dan Nazari, F., 2023, Vancomycin-modified nitrogen and chloride doped carbon dots and their application as a *Staphylococcus aureus* probe,

Anal. Chim. Acta, 1268, 341311.

Tammina, S.K., Mandal, B.K., Ranjan, S., dan Dasgupta, N., 2017, Cytotoxicity study of Piper nigrum seed mediated synthesized SnO_2 nanoparticles towards colorectal (HCT116) and lung cancer (A549) cell lines, *J. Photochem. Photobiol. B.*, 166, 158–168.

Tammina, S.K., Wan, Y., Li, Y., dan Yang, Y., 2020, Synthesis of N, Zn-doped carbon dots for the detection of Fe^{3+} ions and bactericidal activity against *Escherichia coli* and *Staphylococcus aureus*, *J. Photochem. Photobiol. B.*, 202, 111734.

Tao, S., Zhu, S., Feng, T., Xia, C., Song, Y., dan Yang, B., 2017, The polymeric characteristics and photoluminescence mechanism in polymer carbon dots: A review, *Mater. Today Chem.*, 6, 13–25.

Tariq, M., Singh, A., Varshney, N., Samanta, S.K., dan Sk, M.P., 2022, Biomass-derived carbon dots as an emergent antibacterial agent, *Materials. Today*, 33, 104347.

Tenaillon, O., Skurnik, D., Picard, B., dan Denamur, E., 2010, The population genetics of commensal *Escherichia coli*, *Nat. Rev. Microbiol.*, 8 (3), 207–217.

Travlou, N.A., Giannakoudakis, D.A., Algarra, M., Labella, A.M., Rodríguez-Castellón, E., dan Bandosz, T.J., 2018, S- and N-doped carbon quantum dots: Surface chemistry dependent antibacterial activity, *Carbon N. Y.*, 135, 104–111.

Tripathi, S.M., Bock, W.J., Mikulic, P., Chinnappan, R., Ng, A., Tolba, M., dan Zourob, M., 2012, Long period grating based biosensor for the detection of Escherichia coli bacteria, *Biosens. Bioelectron.*, 35 (1), 308–312.

Velkov, T., Thompson, P.E., Nation, R.L., dan Li, J., 2010, Structure-activity relationships of polymyxin antibiotics, *J. Med. Chem.*, 53 (5), 1898–1916.

Wainwright, M., Maisch, T., Nonell, S., Plaetzer, K., Almeida, A., Tegos, G.P., dan Hamblin, M.R., 2017, Photoantimicrobials—are we afraid of the light?, *Lancet Infect Dis.*, 17 (2), e49–e55.

Wang, C., Sun, Q., Li, C., Tang, D., Shi, H., Liu, E., Guo, P., Xue, W., dan Fan, J., 2022, Biocompatible double emission boron nitrogen co-doped carbon quantum dots for selective and sensitive detection of Al^{3+} and Fe^{2+}, *Mater. Res. Bull.*, 155, 111970.

Wang, L., Jana, J., Chung, J.S., Choi, W.M., dan Hur, S.H., 2022, Designing an intriguingly fluorescent N, B-doped carbon dots based fluorescent probe for selective detection of NO^{2-} ions, *Spectrochimc. Acta - Part A Mol. Biomol. Spectrosc.*, 268, 120657.

Wang, Q., Zheng, H., Long, Y., Zhang, L., Gao, M., dan Bai, W., 2011, Microwave-hydrothermal synthesis of fluorescent carbon dots from graphite oxide, *Carbon N. Y.*, 49 (9), 3134–3140.

Wang, Z., Sheng, L., Yang, X., Sun, J., Ye, Y., Geng, S., Ning, D., Zheng, J., Fan, M., Zhang, Y., dan Sun, X., 2023, Natural biomass-derived carbon dots as potent antimicrobial agents against multidrug-resistant bacteria and their biofilms, *Sustain. Mater. Techno.*, 36, e00584.

Weng, C.I., Chang, H.T., Lin, C.H., Shen, Y.W., Unnikrishnan, B., Li, Y.J., dan Huang, C.C., 2015, One-step synthesis of biofunctional carbon quantum dots for bacterial labeling, *Biosens. Bioelectron.*, 68, 1–6.

Wu, H., Pang, L.F., Fu, M.J., Guo, X.F., dan Wang, H., 2020, Boron and nitrogen codoped carbon dots as fluorescence sensor for Fe^{3+} with improved selectivity, *J. Pharm. Biomed. Anal.*, 180, 113052.

Wu, V.C.H., Chen, S.H., dan Lin, C.S., 2007, Real-time detection of *Escherichia coli* O157:H7 sequences using a circulating-flow system of quartz crystal microbalance, *Biosens. Bioelectron.*, 22 (12), 2967–2975.

Xin, Q., Liu, Q., Geng, L., Fang, Q., dan Gong, J.R., 2017, Chiral nanoparticle as a new efficient antimicrobial nanoagent, *Adv. Healthc. Mater.*, 6 (4), 1–6.

Xin, Q., Shah, H., Nawaz, A., Xie, W., Akram, M.Z., Batool, A., Tian, L., Jan, S.U., Boddula, R., Guo, B., Liu, Q., dan Gong, J.R., 2019, Antibacterial carbon-based nanomaterials, *Adv. Mater.*, 31 (45), 1–15.

Xu, J., Guo, Y., Qin, L., Yue, X., Zhang, Q., dan Wang, L., 2023, Green one-step synthesis of boron and nitrogen co-doped carbon dots based on inner filter effect as fluorescent nanosensors for determination of Fe^{3+}, *Ceram. Int.*, 49 (5), 7546–7555.

Xu, N., Du, J., Yao, Q., Ge, H., Li, H., Xu, F., Gao, F., Xian, L., Fan, J., dan Peng, X., 2020, Precise photodynamic therapy: Penetrating the nuclear envelope with photosensitive carbon dots, *Carbon N. Y.*, 159, 74–82.

Xu, Q., Kuang, T., Liu, Y., Cai, L., Peng, X., Sreenivasan Sreeprasad, T., Zhao, P., Yu, Z., dan Li, N., 2016, Heteroatom-doped carbon dots: synthesis, characterization, properties, photoluminescence mechanism and biological applications, *J. Mater. Chem. B*, 4 (45), 7204–7219.

Yadav, R., Vikas, Lahariya, V., Tanwar, M., Kumar, R., Das, A., dan Sadhana, K., 2023, A study on the photophysical properties of strong green-fluorescent N-doped carbon dots and application for pH sensing, *Diamond. Relat. Mater.*, 139, 110411.

Yan, F., Sun, Z., Zhang, H., Sun, X., Jiang, Y., dan Bai, Z., 2019, The fluorescence mechanism of carbon dots, and methods for tuning their emission color: a review, *Microchima. Acta*, 186 (8),.

Yang, J., Zhang, X., Ma, Y.H., Gao, G., Chen, X., Jia, H.R., Li, Y.H., Chen, Z., dan Wu, F.G., 2016, Carbon dot-based platform for simultaneous bacterial distinguishment and antibacterial applications, *ACS Appl. Mater. Interfaces*, 8 (47), 32170–32181.

Yang, Z., Xu, M., Liu, Y., He, F., Gao, F., Su, Y., Wei, H., dan Zhang, Y., 2014,

Nitrogen-doped, carbon-rich, highly photoluminescent carbon dots from ammonium citrate, *Nanoscale*, 6 (3), 1890–1895.

Yao, B., Huang, H., Liu, Y., dan Kang, Z., 2019, Carbon Dots: A Small Conundrum, *Trends Chem.*, 1 (2), 235–246.

Ye, Q., Yan, F., Shi, D., Zheng, T., Wang, Y., Zhou, X., dan Chen, L., 2016, N, B-doped carbon dots as a sensitive fluorescence probe for Hg^{2+} ions and 2,4,6-trinitrophenol detection for bioimaging, *J. Photochem. Photobiol. B.*, 162, 1–13.

Ye, Y., Qi, X., Wang, H., Zhao, B., Xu, L., Zhang, Y., Wang, X., dan Zhou, N., 2022, A surface-enhanced Raman scattering aptasensor for *Escherichia coli* detection based on high-performance 3D substrate and hot spot effect, *Anal. Chim. Acta*, 1221, 340141.

Yu, J., Su, J., Zhang, J., Wei, X., dan Guo, A., 2017, CdTe/CdS quantum dot-labeled fluorescent immunochromatography test strips for rapid detection of *Escherichia coli* O157:H7, *RSC Adv.*, 7 (29), 17819–17823.

Zhang, H., Chen, Y., Liang, M., Xu, L., Qi, S., Chen, H., dan Chen, X., 2014, Solid-phase synthesis of highly fluorescent nitrogen-doped carbon dots, *Anal. Chem.*, 86 (19), 9846–9852.

Zhang, R. dan Chen, W., 2014, Nitrogen-doped carbon quantum dots: Facile synthesis and application as a "turn-off" fluorescent probe for detection of Hg^{2+} ions, *Biosens. Bioelectron.*, 55, 83–90.

Zhang, T., Dong, S., Zhao, F., Deng, M., Fu, Y., dan Lü, C., 2019, Tricolor emissive carbon dots for ultra-wide range pH test papers and bioimaging, *Sens Actuators B Chem.*, 298, 126869.

Zhang, X., Ren, Y., Ji, Z., dan Fan, J., 2020, Sensitive detection of amoxicillin in aqueous solution with novel fluorescent probes containing boron-doped carbon quantum dots, *J. Mol. Liq.*, 311, 113278.

Zhang, Y., Cui, P., Zhang, F., Feng, X., Wang, Y., Yang, Y., dan Liu, X., 2016, Fluorescent probes for "off-on" highly sensitive detection of Hg^{2+} and L-cysteine based on nitrogen-doped carbon dots, *Talanta*, 152, 288–300.

Zhang, Y., Wang, Y., Feng, X., Zhang, F., Yang, Y., dan Liu, X., 2016, Effect of reaction temperature on structure and fluorescence properties of nitrogen-doped carbon dots, *Appl. Surf. Sci.*, 387, 1236–1246.

Zhao, C., Wang, X., Yu, L., Wu, L., Hao, X., Liu, Q., Lin, L., Huang, Z., Ruan, Z., Weng, S., Liu, A., dan Lin, X., 2022, Quaternized carbon quantum dots with broad-spectrum antibacterial activity for the treatment of wounds infected with mixed bacteria, *Acta Biomater.*, 138, 528–544.

Zhao, X., Zhang, M., dan Zhang, Z., 2022, Ultra-fast microwave-assisted synthesis of photoluminescent carbon dots with an ultra-high quantum yield for H_2O_2 detection, *J. Environ. Chem. Eng.*, 10 (6), 109008.

Zheng, L., Qi, P., dan Zhang, D., 2019, Identification of bacteria by a

fluorescence sensor array based on three kinds of receptors functionalized carbon dots, *Sens Actuators B Chem.*, 286, 206–213.

Zhong, D., Zhuo, Y., Feng, Y., dan Yang, X., 2015, Employing carbon dots modified with vancomycin for assaying Gram-positive bacteria like Staphylococcus aureus, *Biosens. Bioelectron.*, 74, 546–553.

Zhu, R., Huang, W., Ma, X., Zhang, Y., Yue, C., Fang, W., Hu, Y., Wang, J., Dang, J., Zhao, H., dan Li, Z., 2019, Nitrogen-doped carbon dots-V_2O_5 nanobelts sensing platform for sensitive detection of ascorbic acid and alkaline phosphatase activity, *Anal. Chim. Acta*, 1089, 131–143.

Zuo, P., Lu, X., Sun, Z., Guo, Y., dan He, H., 2016, A review on syntheses, properties, characterization and bioanalytical applications of fluorescent carbon dots, *Microchim. Acta*, 183 (2), 519–542.