

antimicrobial agent. Synthesized hybrid (AgCl, Ag)NPs/diatomite composites with a dominant content of AgCl-NPs exhibit higher antibiotic activity. The hybrid (AgCl, Ag)NPs/diatomite composites possess antimicrobial potential. However, widespread use requires additional cytotoxic studies on eukaryotic systems, e.g., cell lines and animal models.

Author Contributions: Conceptualization, M.S.; investigation, Z.K., M.S., V.R.-P.; methodology, M.S., V.R.-P.; supervision, M.S.; writing - original draft, Z.K., M.S., V.R.-P.; writing – review and editing, B.B., A.O., M.S., Z.K., P.P., V.R.-P.; visualization, Z.K., V.R.-P.; funding acquisition, B.B., A.O., P.P. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the “Advanced biocomposites for tomorrow’s economy BIOG-NET” project that is carried out within the TEAM-NET program of the Foundation for Polish Science co-financed by the European Union under the European Regional Development Fund and the Project GF MES RK «Physical-chemical basis for obtaining multifunctional biomedical materials (nanofilms) with antibacterial and anti-inflammatory properties», IRN AP05131647

Conflicts of Interest: The authors declare no conflict of interest

References

1. de Jesu', A.L.; Rur'z-Baltazar, S. Green composite based on silver nanoparticles supported on diatomaceous earth: Kinetic adsorption models and antibacterial effect. *J. Clust. Sci.* **2018**, *29*, 509–519, doi:10.1007/s10876-018-1357-7.
2. Zhu, H.Y.; Orthman, J.A.; Li, J.Y.; Zhao, J.C.; Churchman, G.J.; Vansant, E.F. Novel composites of TiO₂ (anatase) and silicate nanoparticles. *Chem. Mater.* **2002**, *14*, 5037–5044, doi:10.1021/cm0205884.
3. He, H.; Li, J.; Yu, C.; Luo, Z. Surface decoration of microdisk-like g-C₃N₄/diatomite with Ag/AgCl nanoparticles for application in Cr(VI) reduction. *Mater. Technol.* **2019**, doi:10.1016/j.susmat.2019.e00127.
4. Vamanu, E.; Ene, M.; Biță, B.; Ionescu, C.; Crăciun, L.; Sârbu, I. In vitro human microbiota response to exposure to silver nanoparticles biosynthesized with mushroom extract. *Nutrients* **2018**, doi:10.3390/nu10050607.
5. Hillenkamp, M.; di Domenicantonio, G.; Eugster, O.; Félix, C. Instability of Ag nanoparticles in SiO₂ at ambient conditions. *Nanotechnology* **2007**, doi:10.1088/0957-4484/18/1/015702.
6. El-Tawil, R.S.; El-Wakeel, S.T.; Abdel-Ghany, A.E.; Abuzeid, H.A.M.; Selim, K.A.; Hashem, A.M. Silver/quartz nanocomposite as an adsorbent for removal of mercury (II) ions from aqueous solutions. *Heliyon* **2019**, doi:10.1016/j.heliyon.2019.e02415.
7. Pergolese, B.; Muniz-Miranda, M.; Bigotto, A. Catalytic activity of Ag/Pd bimetallic nanoparticles immobilized on quartz surfaces. *Chem. Phys. Lett.* **2007**, doi:10.1016/j.cplett.2007.03.033.
8. Mitzel, M.R.; Tufenkji, N. Transport of industrial PVP-stabilized silver nanoparticles in saturated quartz sand coated with pseudomonas aeruginosa PAO1 biofilm of variable age. *Environ. Sci. Technol.* **2014**, doi:10.1021/es404598v.
9. Shameli, K.; Ahmad, M.B.; Yunus, W.Z.W.; Ibrahim, N.A.; Flores, M. Synthesis and characterization of silver/talc nanocomposites using the wet chemical reduction method. *Int. J. Nanomed.* **2010**, doi:10.2147/IJN.S13227.
10. Gao, L.; Wang, L.; Yang, L.; Zhao, Y.; Shi, N.; An, C.; Sun, Y.; Xie, J.; Wang, H.; Song, Y.; et al. Preparation, characterization and antibacterial activity of silver nanoparticle/graphene oxide/diatomite composite. *Appl. Surf. Sci.* **2019**, doi:10.1016/j.apsusc.2019.04.153.
11. Xia, Y.; Jiang, X.; Zhang, J.; Lin, M.; Tang, X.; Zhang, J.; Liu, H. Synthesis and characterization of antimicrobial nanosilver/diatomite nanocomposites and its water treatment application. *Appl. Surf. Sci.* **2017**, doi:10.1016/j.apsusc.2016.11.222.
12. Patakfalvi, R.; Oszkó, A.; Dékány, I. Synthesis and characterization of silver nanoparticle/kaolinite composites. *Colloids Surf. A Physicochem. Eng. Asp.* **2003**, doi:10.1016/S0927-7757(03)00056-6.
13. Malachová, K.; Praus, P.; Rybková, Z.; Kozák, O. Antibacterial and antifungal activities of silver, copper and zinc montmorillonites. *Appl. Clay Sci.* **2011**, doi:10.1016/j.clay.2011.05.016.
14. Magaña, S.M.; Quintana, P.; Aguilar, D.H.; Toledo, J.A.; Ángeles-Chávez, C.; Cortés, M.A.; León, L.; Freile-Pelegrín, Y.; López, T.; Sánchez, R.M.T. Antibacterial activity of montmorillonites modified with silver. *J. Mol. Catal. A Chem.* **2008**, doi:10.1016/j.molcata.2007.10.024.