

## Charakteristika predkladaného výstupu tvorivej činnosti / Characteristics of the submitted research/ artistic/other output

Tlačivo VTC slúži na predkladanie výstupov tvorivej činnosti podľa metodiky hodnotenia tvorivých činností (časť V. Metodiky na vyhodnocovanie štandardov) / The form is used to submit the research/artistic/other outputs according to the evaluation methodology of research/artistic/other activities (part V. The Methodology for Standards Evaluation).

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| ID konania/ID of the procedure: <sup>1</sup>                            |  |
| Kód VTC/Code of the research/artistic/other output (RAOO): <sup>1</sup> |  |

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| OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person <sup>2</sup>                                                                                                                                                                                 | Bilková                                                                                                                                                                                                                                                                                                                                            |
| OCA2. Meno hodnotenej osoby / Name awarded to the assessed person <sup>2</sup>                                                                                                                                                                                          | Andrea                                                                                                                                                                                                                                                                                                                                             |
| OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person <sup>2</sup>                                                                                                                                                                                     | doc., Mgr. PhD./Assoc. prof., Mgr., Ph.D.                                                                                                                                                                                                                                                                                                          |
| OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff <sup>3</sup>                                                                                                           | <a href="https://www.portalvs.sk/regzam/detail/3694">https://www.portalvs.sk/regzam/detail/3694</a>                                                                                                                                                                                                                                                |
| OCA5. Oblasť posudzovania / Area of assessment <sup>4</sup>                                                                                                                                                                                                             | Bakalársky študijný program Zdravotnícke a diagnostické pomôcky/ Study programme Medical and Diagnostic devices                                                                                                                                                                                                                                    |
| OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output<br><i>Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6 options (see Explanations for OCA6).</i>                                                       | vedecký výstup / scientific output                                                                                                                                                                                                                                                                                                                 |
| OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output                                                                                                                                                                 | 2021                                                                                                                                                                                                                                                                                                                                               |
| OCA8. ID záznamu v CREPČ alebo CREUČ (ak je) / ID of the record in the Central Registry of Publication Activity (CRPA) or the Central Registry of Artistic Activity (CRAA) <sup>5</sup>                                                                                 | 417088                                                                                                                                                                                                                                                                                                                                             |
| OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA <sup>6</sup>                                                                                                                                                                    | <a href="https://app.crepcc.sk/?m=detailbibliografic&amp;sid=77C953E32258083447CA04EDF">https://app.crepcc.sk/?m=detailbibliografic&amp;sid=77C953E32258083447CA04EDF</a>                                                                                                                                                                          |
| :pČ alebo CREUČ / Characteristics of the output that is not registered in CRPA or CRAA                                                                                                                                                                                  | OCA10. Hyperlink na záznam v inom verejne prístupnom registri, katalógu výstupov tvorivých činností / Hyperlink to the record in another publicly accessible register, catalogue of research/ artistic/other outputs <sup>7</sup>                                                                                                                  |
|                                                                                                                                                                                                                                                                         | <a href="https://www.scopus.com/record/display.uri?eid=2-s2.0-85110745403&amp;origin=resultslist&amp;sort=plf-f">https://www.scopus.com/record/display.uri?eid=2-s2.0-85110745403&amp;origin=resultslist&amp;sort=plf-f</a>                                                                                                                        |
|                                                                                                                                                                                                                                                                         | OCA11. Charakteristika výstupu vo formáte bibliografického záznamu CREPČ alebo CREUČ, ak výstup nie je vo verejne prístupnom registri alebo katalógu výstupov / Characteristics of the output in the format of the CRPA or the CRAA bibliographic record, if the output is not available in a publicly accessible register or catalogue of outputs |
|                                                                                                                                                                                                                                                                         | N/A                                                                                                                                                                                                                                                                                                                                                |
| OCA12. Typ výstupu (ak nie je výstup registrovaný v CREPČ alebo CREUČ) / Type of the output (if the output is not registered in CRPA or CRAA)<br><i>Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).</i> |                                                                                                                                                                                                                                                                                                                                                    |
| OCA13. Hyperlink na stránku, na ktorej je výstup sprístupnený (úplný text, iná dokumentácia a podobne) / Hyperlink to the webpage where the output is available (full text, other documentation, etc.)                                                                  | <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8399434/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8399434/</a>                                                                                                                                                                                                                          |
| OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution                                                                                                                                                                                 | Stanovenie hypotézy a cieľov, návrh metód výskumu, získanie výsledkov, príprava rukopisu / Determination of hypothesis and aims, design of research methods, obtaining results, preparation of manuscript                                                                                                                                          |

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| <p>Charakteristika výstupu, ktorý nie je registrovaný v CRE</p> | <p>OCA15. Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod. / Annotation of the output with contextual information concerning the description of creative process and the content of the research/artistic/other activity, etc. <sup>8</sup></p> <p><i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i></p> <p><i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i></p> | <p>Na stabilizáciu nanodisperzií striebra sa použili heterocyklické kationové povrchovo aktívne látky s obsahom fosforu alkyldimetylfenylfosfoliumbromidy s alkylovým reťazcom obsahujúcim 14 - 18 atómov uhlíka. Zeta potenciál strieborných nanodisperzií sa pohybuje od +35 do +70 mV, čo indikuje tvorbu stabilných nanočastíc striebra (AgNP). Heptadecylové a oktaedecylové homológy s dlhým reťazcom zo série povrchovo aktívnych látok poskytli AgNP najintenzívnejší stabilizačný účinok, čo viedlo k vysokým pozitívnym hodnotám zeta potenciálu a menšiemu priemeru AgNP. Porovnanie s neheterocyklickými alkytrimetylfosfóniovými povrchovo aktívnymi látkami s rovnakou dĺžkou alkylového reťazca ukázalo lepšiu stabilitu a pozitívnejšie hodnoty zeta potenciálu pre nanodisperzie striebra stabilizované heterocyklickými fosfóliovými povrchovo aktívnymi látkami. Na stanovenie biologickej aktivity testovaných AgNP boli realizované štúdie antimikrobiálnej aktivity a cytotoxicity. Zatiaľ čo výsledky cytotoxicity odhalili zvýšenú úroveň inhibície rastu buniek HepG2 v porovnaní s cytotoxicitou roztokov povrchovo aktívnych látok bez striebra, zvýšený antimikrobiálny účinok testovaných AgNP proti mikrobiálnym patogénom nebol pozorovaný. Porovnanie cytotoxicity AgNP stabilizovaných rôznymi</p> |
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| <p>OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English <sup>9</sup></p> <p><i>Rozsah do 200 slov / Range up to 200 words</i></p>                                                                                                                                                                                                 | <p>Phosphorus-containing heterocyclic cationic surfactants alkyltrimethylphenylphosphonium bromides with the alkyl chain length 14 - 18 carbon atoms were used for the stabilization of silver nanodispersions. Zeta potential of silver nanodispersions ranges from +35 to +70 mV indicates the formation of stable silver nanoparticles (AgNPs). Long-chain heptadecyl and octadecyl homologs of the surfactants series provided the most intensive stabilizing effect to AgNPs, resulting in high positive zeta potential values and smaller diameter of AgNPs. A comparison with non-heterocyclic alkyltrimethylphosphonium surfactants of the same alkyl chain length showed better stability and more positive zeta potential values for silver nanodispersions stabilized with heterocyclic phosphonium surfactants. Investigations of biological activity of tested AgNPs are represented by the studies of antimicrobial activity and cytotoxicity. While cytotoxicity results revealed an increased level of HepG2 cell growth inhibition as compared with the cytotoxicity level of silver-free surfactant solutions, no enhanced antimicrobial action of tested AgNPs against microbial pathogens was observed. The comparison of cytotoxicity of AgNPs stabilized with various non-heterocyclic ammonium and phosphonium surfactants shows that AgNPs capped with heterocyclic</p> |
| <p>OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output</p> <p><i>Rozsah do 200 slov / Range up to 200 words</i></p>                                                                                                                                                         | <p>[n1] 2021 - Juhasz, A. - Seres, L. - Varga, N. - Ungor, D. - Wojnicki, M. - Csapo, E.: Nanomaterials, Vol. 11, No. 12, 2021 ; Art. No. 3288 ; SCOPUS</p> <p>[n1] 2022 - Moreira, J.B. - Terra, A.L.M. - Kuntzler, S.G. - De Moraes, M.G. - Costa, J.A.V. - Chapter 18: Sustainable Materials for Sensing and Remediation of Noxious Pollutants . - s.l. : Elsevier,2022 ; S. 285 - 295 ; SCOPUS</p> <p>[n1] 2022 - Chupakhin, O.N. - Rusinov, V.L. - Varaksin, M.V. - Ulomskiy, E.N. - Savateev, K.V. - Butorin, I.I. - Du, W.S. - Zhiyongc;C. V.N.: International Journal of Molecular Sciences, Vol. 23, No. 23, 2022 ; art. no. 14537 ; SCOPUS</p> <p>[n1] 2023 - Hassan Huseen Amasha, R. - Darwish Saddig Jastaniah, S. - Haleem Al-qaim, Z. - Hussam, F. - Shakir, A. - Kazemnejadi, M.: Inorganic Chemistry Communications, Vol. 149, 2023; art. no. 110375; SCOPUS</p> <p>[n1] 2023 - Gil-Korilis, A. - Cojocar, M. - Berzosa, M. - Gamazo, C. - Andrade, N.J. - Ciuffi, K.J.: Applied Clay Science, Vol. 240, 2023; art. no. 106968; SCOPUS</p>                                                                                                                                                                                                                                                                                                                                     |
| <p>OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice</p> <p><i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i><br/> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i></p>                                  | <p>Rastúca rezistencia patogénov na štandardné liečivá motivuje k hľadaniu nových látok s antimikróbnym potenciálom. Táto práca sa zaoberá aj objasnením vzťahu medzi chemickou štruktúrou molekuly a jej biologickými účinkami. / The growing resistance of pathogens to standard drugs motivates the search for new substances with antimicrobial potential. This work also deals with the elucidation of the relationship between the chemical structure of the molecule and its biological effects.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process</p> <p><i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i><br/> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i></p> | <p>Zistené výsledky môžu byť prezentované v rámci prednášok v programoch Farmácia, Zdravotnícke a diagnostické pomôcky a Manažment a zdravotnícke technológie ako predstavenie postupov výskumu a vývoja nových potenciálnych antimikróbných látok a spôsobov overenia ich účinnosti a bezpečnosti. /The results can be presented in lectures in study programmes Pharmacy, Medical and diagnostic aids, and Management and health technologies as a presentation of research approaches in the development of new potential antimicrobial substances and methods used for testing of their effectiveness and safety.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |