

## 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>                                                                                                 | Paul Hrabovská                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| OCA2. Meno hodnotenej osoby / Name awarded to the assessed person <sup>2</sup>                                                                                                          | Anna                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person <sup>2</sup>                                                                                                     | doc., PharmDr., PhD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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/3719">https://www.portalvs.sk/regzam/detail/3719</a>                                                                                                                                                                                                                                                                                                                                                                                                                               |
| OCA5. Oblasť posudzovania / Area of assessment <sup>4</sup>                                                                                                                             | Doktorandský študijný program Klinická farmácia/PhD.Study Programme Clinical                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 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</i>    | vedecký výstup / scientific output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output                                                                                 | 2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA <sup>6</sup>                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Charakteristika výstupu, ktorý nie je registrovaný v CRPA alebo 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.webofscience.com/wos/woscc/full-record/WOS:000341803700012">https://www.webofscience.com/wos/woscc/full-record/WOS:000341803700012</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                                                                                                                                                                                |
|                                                                                                                                                                                         | ADC - Typ dokumentu: článok; Autori: Dominika Dingova, Jacqueline Leroy, Abel Check, Vladimír Garaj, Eric Krejci, Anna Hrabovská; Názov zdroja: Analytical iochemistry dokument (print)) (elektronický dokument); Rok, ročník, číslo 2014, č. 462 5Rozsahs. 67-75. doi: 10.1016/j.ab.2014.05.031.                                                                                                                                                                                                                                 |
|                                                                                                                                                                                         | 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>                                                                                                                                                                                                                                                           |
|                                                                                                                                                                                         | článok/ article                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                         | 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.sciencedirect.com/science/article/pii/S003269714002504?via%3Dihub">https://www.sciencedirect.com/science/article/pii/S003269714002504?via%3Dihub</a>                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                         | OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                                         | dizajn projektu, vytýčenie hypotéz, získanie finančnej podpory, dizajn a uskutočnenie experimentov, analýza dát, sformovanie záverov, odborné vedenie projektu, príprava manuskriptu a podstúpenie článku na publikáciu ako korešpondujúci autor / project design, setting hypotheses, obtaining financial support, design and implementation of experiments, data analysis, formation of conclusions, professional project management, preparation of manuscript and submitted article for publication as a corresponding author |

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| <p>Charakteristika výstupu, ktorý nie je registrovaný v CREPČ alebo CREUČ / Characteris</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>Ellmanov test je najbežnejšie používanou metódou na meranie aktivity cholinesterázy. Je lacná, rýchla a spoľahlivá, ale pri použití na biologické vzorky má svoje obmedzenia. Problémy vznikajú z kyseliny 5,5-ditiobis(2-nitrobenzoovej) (DTNB), ktorá je nestabilná, interaguje s voľnými sulfhydrylovými skupinami vo vzorke a môže ovplyvniť aktivitu cholinesterázy. Uvádžame, že DTNB je stabilnejší v 0,09 M Hepes s 0,05 M tlmivým roztokom fosforečnanu sodného ako v 0,1 M tlmivom roztoku fosforečnanu sodného, čím sa výrazne znižuje pozadie. Použitie enzýmovovo viazaného imunosorbentného testu (ELISA) na obohatenie tkanivových homogenátov o cholinesterázu pri ochudobnení vzorky o sulfhydrylové skupiny eliminuje nežiaduce interakcie s DTNB, čo umožňuje merať nízku aktivitu cholinesterázy v biologických vzorkách. Aby sme eliminovali možnú interferenciu DTNB s enzýmovou hydrolýzou, zavádzame modifikáciu štandardného Ellmanovho testu. Najprv sa tioestery hydrolyzujú cholinesterázou za vzniku tiocholínu v neprítomnosti DTNB. Potom sa reakcia zastaví inhibítorom cholinesterázy a vytvorený tiocholin sa odhalí pomocou DTNB a kvantifikuje sa pri 412 nm. Táto modifikácia Ellmanovej metódy skutočne zvyšuje aktivitu butyrylcholinesterázy o 20 až 25 %. / Ellman's assay is the most commonly used method to measure cholinesterase activity. It is cheap, fast, and reliable, but it has limitations when used for biological samples. The problems arise from 5,5-dithiobis(2-nitrobenzoic acid) (DTNB), which is unstable, interacts with free sulfhydryl groups in the sample, and may affect cholinesterase activity. We report that DTNB is more stable in 0.09 M Hepes with 0.05 M sodium phosphate buffer than in 0.1M sodium phosphate buffer, thereby notably reducing background. Using enzyme-linked immunosorbent assay (ELISA) to enrich tissue homogenates for cholinesterase while depleting the sample of sulfhydryl groups eliminates unwanted interactions with DTNB, making it possible to measure low cholinesterase activity in biological samples. To eliminate possible interference of DTNB with enzyme hydrolysis, we introduce a modification of the standard Ellman's assay. First, thioesters are hydrolyzed by cholinesterase to produce thiocholine in the absence of DTNB. Then, the reaction is stopped by a cholinesterase inhibitor and the produced thiocholine is revealed by DTNB and quantified at 412 nm. Indeed, this modification of Ellman's method increases butyrylcholinesterase activity by 20 to 25%.</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>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>(1) Ghafour-boroujerdi, E; Rahmani, S; (...); Hassani, S: Investigation of alpha-lipoic acid effect on memory impairment considering strain-dependent differences in mice; Sep 15 2021   Jun 2021 (Early Access)   LIFE SCIENCES 281; IF 5,037 / Q1 ; (2) Kukkar, P; Kukkar, D; (...); Kim, KH: Colorimetric biosensing of organophosphate pesticides using enzymatic nanoreactor built on zeolitic imidazolate-8 Jul 2021   Apr 2021 (Early Access)   MICROCHEMICAL JOURNAL 166, IF 4.821, Q1 / (3) Dubrovskii, Y; Murashko, E; (...); Babakov, V: Mass spectrometry based proteomic approach for the screening of butyrylcholinesterase adduct formation with organophosphates May 15 2019   TALANTA 197 , pp.374-382, IF 6.057, Q1 / (4) Petrov, K; Zueva, I; (...); Masson, P: C-547, a 6-methyluracil derivative with long-lasting binding and rebinding on acetylcholinesterase: Pharmacokinetic and pharmacodynamic studies Mar 15 2018   NEUROPHARMACOLOGY 131 , pp.304-315, IF 5.251, Q1 / (5) Ciriello, R; Lo Magro, S and Guerrieri, A: Assay of serum cholinesterase activity by an amperometric biosensor based on a co-crosslinked choline oxidase/overoxidized polypyrrole bilayer Feb 21 2018   ANALYST 143 (4) , pp.920-929, IF 4.616, Q1</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>n/a</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>Optimalizovaná metodika je využívaná vo výučbe v povinnom predmete Toxikológia magisterského štúdia a v doktorandskom štúdiu; prvý autor bol v to čase doktorandom hodnotenej osoby / Optimized method is used in teaching in the compulsory subject Toxicology of the master's study and in the doctoral study; the first author was a PhD student of the assessed person</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |