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).

ID konania/ID of the procedure: [1] Kód VTC/Code of the research/artistic/other output (RAOO):[1]	

OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person [2]		Miertuš
OCA2. Meno hodnotenej osoby / Name awarded to the assessed person [2]		Stanislav
OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person [2]		prof. Ing. DrSc. Dr.h.c
OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff [3]		https://www.portalvs.sk/regzam/detail/19551
OCA5. Oblasť posudzovania / Area of assessment [4]		17. Chémia/ 17. Chemistry
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output *Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6*		vedecký výstup / scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output		1981
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) [5]		
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA [6]		
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ 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 [7]	https://www.sciencedirect.com/science/article/abs/pii/0301010481850902?via%3Dihub
	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	Miertuš, S., Scrocco, E., Tomasi, J.: Electrostatic interaction of a solute with a continuum. A direct utilization of AB initio molecular potentials for the prevision of solvent effects. Chemical Physics, 1981, 55/1, s. 117 – 129. https://doi.org/10.1016/0301-0104(81)85090-2
	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) *Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).*	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.)	https://ui.adsabs.harvard.edu/abs/1981CP.....55..117M/abstract
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	autor / author
	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. [8] *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	

OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English [9] *Rozsah do 200 slov / Range up to 200 words*	A method is presented which utilizes the calculation of the molecular electrostatic potential or the electric field at a discrete number of preselected points to evaluate the environmental effects of a solvent on the properties of a molecular system. No limitations are imposed on the composition and dimension of the solute, on the goodness of the corresponding wavefunction, or on the shape of the cavity in the dielectric. Several levels of approximation, which evidence the effect of self-polarization of the system of surface charges, the influence of the tails of the solute charge distribution going beyond the limits of the cavity, and the effect of the polarization of the solute, are examined and
OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output *Rozsah do 200 slov / Range up to 200 words*	Miertuš, S., Scrocco, E., Tomasi, J.: Electrostatic interaction of a solute with a continuum. A direct utilization of AB initio molecular potentials for the prevision of solvent effects. Chemical Physics, 1981, 55/1, s. 117 – 129 [I.F.(2019) = 1,771; citácie SCOPUS: 6987; za posl. 5 rokov (2015-2019): 2001. 1. Hidalgo, J.R., Neske, A., Iramain, M.A., Alvarez, P.E., Bongiorno, P.L., Brandán, S.A.: Experimental isolation and spectroscopic characterization of squamocin acetogenin combining FTIR, FT-Raman and UV–Vis spectra with DFT calculations. (2020) Journal of Molecular Structure, 1219, art. no. 128610. 2. Karrouchi, K., Brandán, S.A., Sert, Y., El-marzouqi, H., Radi, S., Ferbinteanu, M., Faouzi, M.E.A., Garcia, Y., Ansar, M.: Synthesis, X-ray structure, vibrational spectroscopy, DFT, biological evaluation and molecular docking studies of (E)-N′-(4-(dimethylamino)benzylidene)-5- methyl-1H-pyrazole-3-carbohydrazide.(2020) Journal of Molecular Structure, 1219, art. no. 128541. 3. Dmitrieva, O.A., Ivanova, Y.B., Semeikin, A.S., Mamardashvili, N.Z.: Fluorescence properties and quantum-chemical modeling of tert-butyl-substituted porphyrazines: Structural and ionization effect.(2020) Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 240, art. no. 118601. 4. Rădulescu-Grad, M.E., Visa, A., Milea, M.S., Lazău, R.I., Popa, S., Funar-Timofei, S.: Synthesis, spectral characterization, and theoretical investigations of a new azo-stilbene dye for acrylic resins.(2020) Journal of Molecular Structure, 1217, art. no. 128380. 5. Liu, Y., Xu, Q., Sun, J., Wang, L., He, D., Wang, M., Yang, C.: Insights for vibronic effects on spectral shapes of electronic circular dichroism and circularly polarized luminescence of aza[7]helicene.(2020) Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 239, art. no. 118475.
OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Výsledky vo vybranej publikácii vytvorili nielen základnú predstavu o vplyve rozpúšťadla na molekulové vlastnosti vybraných látok ale tiež poskytla metodiku výpočtu daných vlastností, ktorá sa využíva dodnes pri rôznych metódach stanovenia látok v potravinárskom, chemickom alebo farmaceutickom priemysle. The results in the selected publication created not only a basic idea of the influence of the solvent on the molecular properties of selected substances, but also provided a methodology for calculating the given properties, which is still used today in various methods of determining substances in the food, chemical or pharmaceutical industries.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Uvádzaná metodika prístupu k počítaniu vlastností reakčných činidiel pri pokročilých metódach stanovenia v rámci analytickej chémie stále rezonuje tak na úrovni najnovších poznatkov publikovaných vo významných indexovaných časopisoch a preto je nevyhnutnou súčasťou diskusií so študentmi v treťom stupni vzdelávania, ktorí sa v rámci svojho štúdia môžu s daným prístupom oboznámiť a následne ho využiť pri vlastnej vedeckej práci. The presented methodology for the approach to calculating the properties of reagents in advanced methods of determination in the framework of analytical chemistry still resonates at the level of the latest knowledge published in important indexed journals and is therefore an essential part of discussions with students in the third level of education who, as part of their studies, can deal with the given get acquainted with the approach and subsequently use it in their own scientific work.

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).

ID konania/ID of the procedure: [1] Kód VTC/Code of the research/artistic/other output (RAOO):[1]	

OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person [2]		Miertuš
OCA2. Meno hodnotenej osoby / Name awarded to the assessed person [2]		Stanislav
OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person [2]		prof. Ing. DrSc. Dr.h.c
OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff [3]		https://www.portalvs.sk/regzam/detail/19551
OCA5. Oblasť posudzovania / Area of assessment [4]		17. Chémia/ 17. Chemistry
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output *Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6*		vedecký výstup / scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output		1982
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) [5]		
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA [6]		
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ 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 [7]	
	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	Miertus, S., Tomasi, J.: Approximate evaluations of the electrostatic free energy and internal energy changes in solution processes. Chemical Physics, 1982, vol. 65, iss. 2, pp. 239-245. 10.1016/0301-0104(82)85072-6
	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) *Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).*	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.)	https://www.sciencedirect.com/science/article/abs/pii/0301010482850726
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	autor / author
	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. [8] *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	

OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English [9] *Rozsah do 200 slov / Range up to 200 words*	A recently proposed procedure for introducing solvent effects in the molecular hamiltonian of a solute is here re-elaborated to get approximate solutions of the corresponding classical electrostatic problem. The basic feature of the original procedure, i.e. the direct utilization of a quantum-mechanical ab initio description of the solute charge distribution in the “continuum” solution model, with cavities of arbitrary shape, is maintained. The meaning of supplementary assumptions introduced in classical calculation 0is discussed, and a comparison is made with analogous evaluations obtained with other approaches.
OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output *Rozsah do 200 slov / Range up to 200 words*	Lashanizadegan, M., Kamali, F., Ghiasi, M., Mirzazadeh, H. Cu(II) and Mo(VI) Schiff base complexes immobilized on magnetic multiwalled carbon nanotubes: Oxidation of olefins and theoretical study (2024) Journal of Molecular Structure, 1295, art. no. 136606, . Romo-Gutiérrez, A., Cisneros-García, Z.N., Rodríguez-Zavala, J.G. Enhancing photovoltaic performance: Exploring quinoxaline donors in conjunction with Y6 and BTP-4Br small molecule acceptors via DFT calculations (2023) Materials Today Communications, 37, art. no. 107382, . Jung, S., Cheung, W.-L., Li, S.-J., Wang, M., Li, W., Wang, C., Song, X., Wei, G., Song, Q., Chen, S.S., Cai, W., Ng, M., Tang, W.K., Tang, M.-C. Enhancing operational stability of OLEDs based on subatomic modified thermally activated delayed fluorescence compounds (2023) Nature Communications, 14 (1), art. no. 6481, . Chahkandi, B., Chahkandi, M. An accurate DFT study within conformational survey of the d-form serine–alanine protected dipeptide (2023) BMC Chemistry, 17 (1), art. no. 138, . Bhomick, P.C., Supong, A., Kumar, S., Sema, A.I., Merry, T., Sinha, D. Utilization of Pinus kesiya and Schima wallichii Biomass-Derived Activated Carbon for Methylene Blue Removal: Adsorption Performance and Mechanistic Insights (2023) Water Conservation Science and Engineering, 8 (1), art. no. 48, .
OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Výsledky vo vybranej publikácii vytvorili nielen základnú predstavu o vplyve rozpúšťadla na molekulové vlastnosti vybraných látok ale tiež poskytla metodiku výpočtu daných vlastností s využitím kvantovej mechaniky, ktorá sa využíva dodnes pri rôznych metódach stanovenia látok v potravinárskom, chemickom alebo farmaceutickom priemysle. The results in the selected publication created not only a basic idea of the influence of the solvent on the molecular properties of selected substances, but also provided a methodology for calculating the given properties based on quantum-mechanical description, which is still used today in various methods of determining substances in the food, chemical or pharmaceutical industries.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Uvádzaná metodika prístupu k počítaniu vlastností reakčných činidiel na základe kvantovej mechniky pri pokročilných metódach stanovenia v rámci analytickej chémie stále rezonuje tak na úrovni najnovších poznatkov publikovaných vo významných indexovaných časopisoch a preto je nevyhnutnou súčasťou diskusií so študentmi v treťom stupni vzdelávania, ktorí sa v rámci svojho štúdia môžu s daným prístupom oboznámiť a následne ho využiť pri vlastnej vedeckej práci. The presented methodology for the approach to calculating the properties of reagents based on quantum-mechanical description in advanced methods of determination in the framework of analytical chemistry still resonates at the level of the latest knowledge published in important indexed journals and is therefore an essential part of discussions with students in the third level of education who, as part of their studies, can deal with the given get acquainted with the approach and subsequently use it in their own scientific work.

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).

ID konania/ID of the procedure: [1] Kód VTC/Code of the research/artistic/other output (RAOO):[1]	

OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person [2]		Miertuš
OCA2. Meno hodnotenej osoby / Name awarded to the assessed person [2]		Stanislav
OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person [2]		prof. Ing. DrSc. Dr.h.c
OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff [3]		https://www.portalvs.sk/regzam/detail/19551
OCA5. Oblasť posudzovania / Area of assessment [4]		17. Chémia/ 17. Chemistry
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output *Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6*		vedecký výstup / scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output		2011
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) [5]		
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA [6]		
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ 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 [7]	https://pubmed.ncbi.nlm.nih.gov/21636741/
	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	Kongkamnerd, J. Milani, A., Cattoli, G., Terregino, C., Capua, I., Beneduce, L., Gallotta, A., Pengo, P., Fassina, G., Monthakantirat, O., Umehara, K., De-Eknamkul, W., Miertus, S.: The quenching effect of flavonoids on 4-methylumbelliferone, a pontential pitfall in fluorimetric neuraminidase inhibiton assays. J. Biolol. Screen., 2011, 16 (7), 755-764. 10.1177/1087057111409221
	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) *Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).*	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.)	https://pubmed.ncbi.nlm.nih.gov/21636741/
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	autor / author
	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. [8] *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	

OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English [9] *Rozsah do 200 slov / Range up to 200 words*	Many assays aimed to test the inhibitory effects of synthetic molecules, and naturally occurring products on the neuraminidase activity exploit the hydrolysis of 2'-O-(4-methylumbelliferyl)-N-acetylneuraminic acid (4-MUNANA). The amount of the released product, 4-methylumbelliferone (4-MU), is then measured fluorimetrically. The authors attempted an analysis of the inhibitory properties of 35 naturally occurring flavonoids on neuraminidase N3, where only 29 of them were sufficiently soluble in the assay medium. During the analysis, the authors noticed a strong quenching effect due to the test compounds on the fluorescence of 4-MU. The quenching constants for the flavonoids were determined according to the Stern-Volmer approach. The extent of fluorescence reduction due to quenching and the magnitude of the fluorescence reduction measured in the inhibition assays were comparable: for 11 of 29 compounds, the two values were found to be coincident within the experimental uncertainty. These data were statistically analyzed for correlation by calculating the pertinent Pearson correlation coefficient. Inhibition and quenching were found to be positively correlated (r = 0.71, p(uncorr) = 1.5 × 10(-5)), and the correlation was maintained for the whole set of tested compounds. Altogether, the
OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output *Rozsah do 200 slov / Range up to 200 words*	Gattani, A., Agrawal, A., Khan, M.H., Gupta, R., Singh, P. Evaluation of catalytic activity of human and animal origin viral neuraminidase: Current prospect (2023) Analytical Biochemistry, 671, art. no. 115157, . Campbell, A.C., Tanner, J.J., Krause, K.L. Optimisation of neuraminidase expression for use in drug discovery by using hek293-6e cells (2021) Viruses, 13 (10), art. no. 1893, . Zang, Y., Miao, Y., Wu, T., Cheng, Z. Development of a thin-layer chromatography bioautographic assay for neuraminidase inhibitors hyphenated with electrostatic field induced spray ionisation-mass spectrometry for identification of active Isatis indigotica root compounds (2021) Journal of Chromatography A, 1638, art. no. 461597, . He, X., Schuchman, E.H., Simonaro, C.M. A New Fluorescent Method to Detect Sulfamidase Activity in Blood, Tissue Extracts and Dried Blood Spots (2021) Journal of Inborn Errors of Metabolism and Screening, 9, art. no. e20200021,
OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Využitie fluorimetrických metód stanovenia enzýmovej aktivity je bežné v labotórmej diagnostike rôznych ochorení. Predmetná práca popisuje úskalia pri stanovení enzýmovej aktivity vybraným fluorogénnym markerom vplyvom prítomných látok so schopnosťou absorbovať žiarenie uvoľnované ako odozva prebiehajúcej enzýmom katalyzovanej reakcie pri stanovení jeho aktivity, čo spôsobilo v mnohých prípadoch prehodnotenie prístupu k stanovenie daných enzýmových aktivít v komplexných analytických vzorkách.The use of fluorimetric methods for determining enzyme activity is common in the laboratory diagnosis of various diseases. The work in question describes pitfalls in the determination of enzyme activity with a selected fluorogenic marker due to the presence of substances with the ability to absorb radiation released as a response to the ongoing enzyme-catalyzed reaction in the determination of its activity, which in many cases caused a reassessment of the approach to the determination of given enzyme activities in complex analytical samples.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Metódy stanovenia látok, vrátane enzýmov, sú základom pre štúdium analytickej chémie. Možné problémy, ktoré môžu nastať, či už pri rutinných stanoveniach s netradičnými vzorkami, alebo pri vývoji nových metód stanoveniach, sú súčasťou výučby, aby problémom, s ktorými sa stretávali výskumníci v rámci svojich tém, bolo možné predísť ešte pred ich vznikom. Methods for the determination of substances, including enzymes, are the basis for the study of analytical chemistry. Possible problems that may arise, either in routine determinations with non-traditional samples or in the development of new determination methods, are part of the teaching, so that the problems encountered by researchers within their topics can be prevented before they arise.

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).

ID konania/ID of the procedure: [1] Kód VTC/Code of the research/artistic/other output (RAOO):[1]	

OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person [2]		Miertuš
OCA2. Meno hodnotenej osoby / Name awarded to the assessed person [2]		Stanislav
OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person [2]		prof. Ing. DrSc. Dr.h.c
OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff [3]		https://www.portalvs.sk/regzam/detail/19551
OCA5. Oblasť posudzovania / Area of assessment [4]		17. Chémia/ 17. Chemistry
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output *Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6*		vedecký výstup / scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output		2022
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) [5]		ID = 464621
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA [6]		https://app.crepc.sk/?fn=detailBiblioFormChildCPTFA&sid=23402970C26F32DFE7C5788723&seo=CREP%C4%8C-detail-%C4%8Cl%C3%A1nok
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ 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 [7]	
	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	Legerská, B., Chmelová, D., Ondrejovič, M., Miertuš, S.: The TLC-Bioautography as a tool for rapid enzyme inhibitors detection - a review. Critical Reviews in Analytical Chemistry. 52, 2, 2022, 275-293. 10.1080/10408347.2020.1797467
	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) *Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).*	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.)	https://www.tandfonline.com/doi/abs/10.1080/10408347.2020.1797467
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	autor / author
	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. [8] *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	

OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English [9] *Rozsah do 200 slov / Range up to 200 words*	Microorganisms and plants can be important sources of many compounds with potential pharmaceutical applications. Extraction of these matrices is one of the ways of identifying the presence of inhibitory active substances against enzymes whose high activity leads to serious human diseases including cancer, Parkinson's or Crohn's diseases. The isolation and purification of inhibitors are time-consuming and expensive steps in the analysis of the crude extract and therefore, it is necessary to find a fast, efficient, and inexpensive method for screening extracts of interest. TLC-Bioautography combines the separation of the extract on a thin layer with its subsequent biological analysis. TLC-Bioautography methods have been developed for several classes of enzymes including oxidoreductases, hydrolases and isomerases, and there is a potential for developing functional methods for other classes of enzymes. This review summarizes known TLC-Bioautography methods and their applications for determining the presence of enzyme inhibitors in extracts and compares the effectiveness of different methodological approaches. It also indicates the current state and perspective of the development of TLC-Bioautography and its possible future applications.
OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output *Rozsah do 200 slov / Range up to 200 words*	Poole, C.F. Sample preparation for planar chromatography (2023) Journal of Separation Science, 46 (18), art. no. 2300071, . Filimonova, S.M., Melnikov, E.S., Kaufmann, J.O., Shchepochkina, O.Y., Eremin, S.A., Gravel, I.V., Raysyan, A. Exploring the anti-α-amylase activity of flavonoid aglycones in fabaceae plant extracts: a combined MALDI-TOF-MS and LC–MS/MS approach (2023) International Journal of Food Science and Technology, 58 (7), pp. 3902-3911. Siddiquee, Z., Parveen, R., Ahmad, S. Effect-Directed Assays and Biological Detection Approaches Coupled with Thin-Layer Chromatography as an Evolving Hyphenated Technique: A Comprehensive Review (2023) Combinatorial Chemistry and High Throughput Screening, 26 (15), pp. 2679-2717. Wilson, I.D., Poole, C.F. Planar chromatography – Current practice and future prospects (2023) Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 1214, art. no. 123553, . Cabezudo, I., Salazar, M.O., Ramallo, I.A., Furlan, R.L.E. Effect-directed analysis in food by thin-layer chromatography assays (2022) Food Chemistry, 390, art. no. 132937, .
OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Práca poskytuje informácie o bioanalytickej metóde spájajúcej chromatografickú separáciu a biologické testovanie enzýmových aktivít. Výsledná metóda je vhodná tak pre výskum v oblasti farmácie a medicíny, ako aj pre zlepšenie analytického stanovenia vybraných enzýmov v komplexných vzorkách s typickým obsahom balastných zložiek interferujúcich pri stanovení. The work provides information on a bioanalytical method combining chromatographic separation and biological testing of enzyme activities. The resulting method is suitable both for research in the field of pharmacy and medicine, as well as for improving the analytical determination of selected enzymes in complex samples with a typical content of ballast components interfering with the determination.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Metóda podrobne popísaná v danej publikácii prináša nový pohľad na využitie tradičnej metódy stanovenie látok v komplexných zmesiach s využitím enzýmom katalyzovanej reakcie v podobe detekčného činidla. Tieto informácie dopĺňajú poznatky z analytickej chémie, ktoré študenti nadobuli v predchádzajúcom štúdiu, o nové možnosti ich využitia. The method described in detail in this publication brings a new perspective on the use of the traditional method of determining substances in complex mixtures using an enzyme-catalyzed reaction in the form of a detection reagent. This information supplements the knowledge of analytical chemistry that students acquired in the previous study with new possibilities of their use.

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).

ID konania/ID of the procedure: [1] Kód VTC/Code of the research/artistic/other output (RAOO):[1]	

OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person [2]		Miertuš
OCA2. Meno hodnotenej osoby / Name awarded to the assessed person [2]		Stanislav
OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person [2]		prof. Ing. DrSc. Dr.h.c
OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff [3]		https://www.portalvs.sk/regzam/detail/19551
OCA5. Oblasť posudzovania / Area of assessment [4]		17. Chémia/ 17. Chemistry
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output *Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6*		vedecký výstup / scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output		2019
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) [5]		ID = 136527
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA [6]		https://app.crepc.sk/?fn=detailBiblioFormChildID9QD&sid=8CC1582F9CFC8AB06FE2374462&seo=CREP%C4%8C-detail-%C4%8Cl%C3%A1nok
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ 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 [7]	
	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	Hľasová, Z., Košík, I., Ondrjeovič, M., Miertuš, S., Katrlík, J.: Methods and current trends in determination of neuraminidase activity and evaluation of neuraminidase inhibitors. Critical Reviews in Analytical Chemistry. 49, 4, 2019, 350-367.10.1080/10408347.2018.1531692
	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) *Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).*	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.)	https://pubmed.ncbi.nlm.nih.gov/30582732/
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	autor / author
	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. [8] *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	

OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English [9] *Rozsah do 200 slov / Range up to 200 words*	This review focuses on the methods and current trends in determination of neuraminidases (NAs) activity and evaluation of neuraminidase inhibitors (NAIs) by means of biochemical assays. These methods can be used, in principle, for any type of sialidase, with regard to substrate specificity and optimal conditions for enzymatic reaction. Considering the range of organisms producing sialidases, this review omits cell-based assays (plaque assays and study of cytopathic effect) and animal model studies, which are reviewed elsewhere concerning specific organisms. The present review also provides the brief introductory survey of role of sialic acids and neuraminidases, but main focus is on the methods of determining neuraminidase activity and evaluating neuraminidase inhibitors. The future prospect of improvement in analytical techniques regarding the enzymatic activity of sialidases is briefly outlined.
OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output *Rozsah do 200 slov / Range up to 200 words*	Gattani, A., Agrawal, A., Khan, M.H., Gupta, R., Singh, P. Evaluation of catalytic activity of human and animal origin viral neuraminidase: Current prospect (2023) Analytical Biochemistry, 671, art. no. 115157, . Casto-Boggess, L.D., Holland, L.A., Lawer-Yolar, P.A., Lucas, J.A., Guerrette, J.R. Microscale Quantification of the Inhibition of Neuraminidase Using Capillary Nanogel Electrophoresis (2022) Analytical Chemistry, 94 (46), pp. 16151-16159. Okada, S., Fukai, Y., Tanoue, Y., Nasser, H., Fukuda, T., Ikeda, T., Saitoh, H. Basic structure and cytocompatibility of giant membrane vesicles derived from paraformaldehyde-exposed human cells (2022) Journal of Biochemistry, 171 (3), pp. 339-347. Cheng, L., Yang, F., Tang, L., Qian, L., Chen, X., Guan, F., Zhang, J., Li, G. Electrochemical Evaluation of Tumor Development via Cellular Interface Supported CRISPR/Cas Trans-Cleavage (2022) Research, 2022, art. no. 9826484, . Yuan, L., Zhao, Y., Sun, X.-L. Sialidase substrates for Sialdiase assays - activity, specificity, quantification and inhibition (2020) Glycoconjugate Journal, 37 (5), pp. 513-531.
OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Práca prináša nové informácie z oblasti bioanalytickej chémie stanovovania neuraminidázy, kľúčového enzýmu umožňujúceho virulenciu vírusu chrípky, ako aj potenciálnych inhibítorov, ktoré je možné využiť v podobe novo-vyvíjaných liečiv. Preto dopad výstupu je možné vidieť predovšetkým v medicíne a farmácii. The work brings new information from the field of bioanalytical chemistry for the determination of neuraminidase, a key enzyme enabling the virulence of the influenza virus, as well as potential inhibitors that can be used in the form of newly developed drugs. Therefore, the impact of the output can be seen primarily in medicine and pharmacy.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process *Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak* *Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English*	Práca prináša unikátne porovnanie dvoch prístupov pre stanovenie aktivity vybraného enzýmu, ktoré priamo zapadajú do výučby pokročilých metód v analytickej a bioanalytickej chémii. The work brings a unique comparison of two approaches for determining the activity of a selected enzyme, which directly fit into the teaching of advanced methods in analytical and bioanalytical chemistry.