

Toxicology

| RECOOP HST Research Activity Inventory | |
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| Please complete the template for each selected project your organization would like to share with the partners of the RECOOP HST Consortium and would like to invite other organizations to write FP7 or NIH proposals. | |
| Organization: Slovak Medical University | |
| Research Groups in the Department | |
| Group | Head (name and e-mail address) |
| Toxicology and Teratology | Dagmar Zeljenková, MVDr, PhD dagmar.zeljenkova@szu.sk |
| Genetic toxicology | Elena Szabova, RNDr. PhD elena.szabova@szu.sk |
| Biobanking | Dagmar Zeljenková, MVD, PhD dagmar.zeljenkova@szu.sk |
| Ecotoxicology | Jevgenij Kovrižnych, RNDr jevgenij.kovriznych@szu.sk |
| Teratological Information Centre | Elena Szabova, RNDr. PhD elena.szabova@szu.sk |
| Congenital Malformations Monitoring Program | Elena Szabova, RNDr. PhD elena.szabova@szu.sk |
| Respiratory toxicology | Marta Hurbánková, PhDr, PhD marta.hurbankova@szu.sk |
| Toxicological testing and expertises | Jana Szokolayová, MUDr jana.szokolayova@szu.sk |
| Animal surgery for testing methods | Katarina Ambrušová, MVDr katarina.ambrusova@szu.sk |
| 2. Main areas of ongoing research in the Department | |
| <ul style="list-style-type: none"> • Toxicological methods using laboratory animals, including combined chronic toxicity, carcinogenicity and teratogenicity studies • Genetic Toxicology methods in vivo and in vitro • Ecotoxicological methods using Fish model • Respiratory toxicity using laboratory animals • Biobanking of environmental and biological samples • Improving environmental health research and management in newly associated states • Teratological Information Centre • International database for International collaborative research on craniofacial anomalies <p>Toxicological testing and expertises in toxicology and health safety of chemicals and other xenobiotics</p> | |
| 3. Methods used in the Department | |
| <ul style="list-style-type: none"> • Toxicological methods using laboratory animals (all types) according to OECD, FDA, EPA, Pharmacopoea, under GLP and Specific pathogen free conditions • Cryogen archiving of all types of biological samples (separate DNA banking and Environmental banking) • Genotoxicity in vivo and in vitro • Surgery methods on laboratory animals • Creation of International databases –epidemiological studies | |

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| Organization | Faculty of Military Health Sciences, University of Defence | | |
| Area of the Research | Medical countermeasures against intoxications caused by chemical warfare agents; Toxicology; Pharmaceutical discovery and development | | |
| Title of the Research Activity | Countermeasure Against Chemical Terrorism – Development of New Antidotes Against Nerve Agents | | |
| Department (complete address) | Principal Investigator or Head of the Research Group | | |
| Center of Advanced Studies Faculty of Military Health Sciences, University of Defence Trebesska 1575 500 01 Hradec Kralove Czech Republic | Name: Kamil KUCA | | |
| | Title: Dr. | | |
| | Tel: +420 973 251 523 | | |
| | Fax: +420 495 518 094 | | |
| | | | E-mail: kucakam@pmfhk.cz |
| Abstract | Maximum 500 characters | | |
| Mutual project between Czech Republic (Faculty of Military Health Sciences) and Korea (Korea Research Institute of Chemical Technology) focused on the development of new antidotes against nerve agents and pesticides intoxications. Synthesis of new acetylcholinesterase reactivators and their in vitro evaluation are the aim of this project. | | | |
| Methods used | Maximum 300 characters | | |
| Chemical synthesis of new acetylcholinesterase reactivators. Potentistatic method for the determination of activity of cholinesterase reactivators. | | | |
| Related references (max 3) | Indicate the impact factor of the cited reference | | |
| Park NJ., Jung YS., Musilek K., Jun D., Kuca K.: Potency of several structurally different acetylcholinesterase reactivators to reactivate house fly and bovine acetylcholinesterase inhibited by paraoxon and DFP. Bulletin of Korean Chemical Society. 2006, 27, 9, 1401-1409 (IF 0.91) | | | |
| Oh K.A., Yang G.Y., Jun D., Kuca K., Jung Y.S.: Bis-pyridiumaldoxime reactivators connected with CH ₂ O(CH ₂) _n OCH ₂ linkers between pyridinium rings and their reactivity against VX. Biorganic & Medicinal Chemistry Letters. 2006, 16(18), 4852-4855 (IF 2.47) | | | |
| Kuca K., Jun D., Bajgar J.: Currently used cholinesterase reactivators against nerve agent intoxication: comparison of their effectivity in vitro. Drug and Chemical Toxicology. 2007, 30(1), 31-40 (IF 0.98) | | | |
| Related Inventions Disclosures and Patents | none | | |
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| Planning grant application (please mark your selection with X) | FP7 | <input type="checkbox"/> | NIH <input type="checkbox"/> |
| Only participating in projects (please mark your selection with X) | FP7 | <input type="checkbox"/> | NIH <input type="checkbox"/> |

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| Please complete the template for each selected project your organization would like to share with the partners of the RECOOP HST Consortium and would like to invite other organizations to write FP7 or NIH proposals. | | | |
| Organization | Faculty of Military Health Sciences, University of Defence | | |
| Area of the Research | Medical countermeasures against intoxications caused by chemical warfare agents; Molecular diagnostics; Toxicology; Molecular biology; 3D tissue and organ cultures; Pharmaceutical discovery and development | | |
| Title of the Research Activity | New method of prophylaxis, decontamination, diagnosis and therapy in the case of intoxication with nerve agents and sulfur mustard | | |
| Department (complete address) | Principal Investigator or Head of the Research Group | | |
| ¹ Department of Toxicology ² Center of Advanced Studies Faculty of Military Health Sciences, University of Defence Trebesska 1575, 500 01 Hradec Kralove Czech Republic | Name: Jiri Bajgar | | |
| | Title: Assoc. Prof | | |
| | Tel: +420 973 251 507 | | |
| | Fax: +420 495 518 094 | | |
| E-mail: bajgar@pmfhk.cz | | | |
| Abstract | Maximum 500 characters | | |
| <p>Development of our knowledge about the prophylactic efficacy of cholinesterase preparation against nerve agent intoxication by means of toxicological methods and the decision about directions of new approach to prophylaxis to achieve better prophylactic effect in low doses at inhalation exposure.</p> <p>Verification of decontamination effect based on reverse micellar systems against chemical warfare agents in vivo and decision on further research direction.</p> <p>Evaluation of efficacy of potential AChE reactivators and to find the reactivator able to reactivate nerve agent-inhibited AChE regardless of the type of nerve agent.</p> <p>The validation of the method estimating of DNA cross-links induced by sulphur mustard in cells incubated in vitro. By means of this method, to test a possible influence of selected antimutagens/combinations on the effect of sulphur mustard. The antimutagenic effect will be also verified by the observation of the induction of chromosomal damage in bone marrow cells of mice.</p> | | | |
| Methods used | Maximum 300 characters | | |
| Chemical synthesis. Method for determination of activity of cholinesterases according to Ellman. Potentiostatic titration for determinations of above mentioned activities. Titration for evaluation of catalytic properties of developed micellar systems. Comet-assay for the observation of the induction of chromosomal damage. In vivo animal experiments. | | | |
| Related references (max 3) | Indicate the impact factor of the cited reference | | |
| Musilek K., Holas O., Hambalek J., Kuca K., Jun D., Dohnal V., Dolezal M.: Synthesis of Bispyridinium Compounds bearing Propane Linker and Evaluation of their Reactivation Activity against Tabun- and Paraoxon-Inhibited Acetylcholinesterase. Letters in Organic Chemistry. 2006, 3(11), 831-835 (IF 1.66) | | | |
| Kuca K., Cabal J., Jun D., Musilek K.: In vitro reactivation potency of acetylcholinesterase reactivators – K074 and K075 – to reactivate tabun inhibited human brain cholinesterases. Neurotoxicity Research. 2007 (In press) (IF 1.66) | | | |
| Bajgar J., Hajek P., Slizova D., Krs O., Fusek J., Kuca K., Jun D., Bartosova L., Blaha V. Changes of acetylcholinesterase activity in different rat brain areas following intoxication with nerve agents: biochemical and histochemical study. Chemico-Biological Interactions. 2007, 165, 14-21 (IF 1.96) | | | |
| Related Inventions Disclosures and Patents | none | | |
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| Planning grant application (please mark your selection with X) | | FP7 | NIH |
| Only participating in projects (please mark your selection with X) | | FP7 | NIH |

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| Please complete the template for each selected project your organization would like to share with the partners of the RECOOP HST | |
| Organization | Lviv National Medical University |
| Area of the Research | DISEASE PREVENTION or ENVIRONMENTAL HEALTH |
| Title of the Research Activity | Chemical-toxicological investigation of poisonings by Amanita species mushrooms |
| Department (complete address) | Principal Investigator or Head of the Research Group |
| Toxicological and Analytical Chemistry Department Lviv National Medical University, 69 Pekarska st., Lviv 79010, Ukraine. | Name: BIDNYCHENKO YURIY, PhD |
| | Title: Associate Professor |
| | Tel 38 0322 786437 |
| | Fax: :+380-322-757734 |
| | E-mail: bidnyuri@meduniv.lviv.ua ; analytox@gmail.com |
| Abstract | Maximum 500 characters |
| <p>Chemical-toxicological investigation of oligopeptide toxins of Amanita species mushrooms:</p> <ul style="list-style-type: none"> – Development of express-tests for diagnosing of acute intoxication by Amanita mushrooms during 12-24 hours after ingestion using blood and urine of poisoned persons. – Development of chemical and instrumental methods for forensic examination of human body tissues and liquids in case of fatal poisoning. Applying these techniques for establishment of type of poison and species of poisonous mushroom. | |
| Methods used | Maximum 300 characters |
| <ul style="list-style-type: none"> – Applying high-performance liquid chromatography with mass-spectrometry for identification and quantification of hepta-peptides (phalloidins) and octa-peptides (amanitins) of Amanita phalloides (death toadstool) mushroom in human body fluids. – Using solid-phase extraction for biological liquids samples treatment. | |
| Related references (max 3) | Indicate the impact factor of the cited reference |
| <ol style="list-style-type: none"> 1. HPLC determination of mushroom peptide toxins at forensic-chemical examination. – American laboratory, 2000. – Vol. 32. – No 9. – P. 14. (IF 0.306) 2. Detecting Mushroom peptide Toxins in Body Fluids by capillary Electrophoresis. – LCGC North America, 2001. – Vol. 19. – No 9. – P. 1000-1002. (IF 0.810) 3. Using CE/MS for detection of Mushroom Peptide Toxins in Body Fluids. – Proceeding of the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy – PittCon, March 9-14, 2003. – Orlando, Florida. – 860-6P. | |
| Related Inventions Disclosures and Patents | |