**Partner Search offer in Horizon 2020**

**Date (2014/07/14)**

**(\*) Description of the expertise offered (up to 1000 characters)**

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| **Structural analysis and stability of DNA and RNA alternative structural motifs have been our main focus of interest for the last decade; e.g. cruciform, Z-DNA and G-quadruplex. Short sequences can fold into a wide variety of different structures, some of which display very high affinities toward specific target molecules such as small ligands, proteins (transcription factors), nucleic acids, cells and cell surface proteins; there is even some evidence of affinities to bacteria and viruses. These structures, commonly known as aptamers, demonstrate levels of specificity which are comparable to antibodies. Aptameric G-quadruplexes have also shown a great potential for the further development of nano-devices, such as basic components in microarrays, microfluidics, biosensors and electrochemical assays. Therefore, G-quadruplexes are ones of the most attractive structures because they also play a key role during the DNA/RNA processing in cellular systems. Many factors influence the formation of this structure, e.g. concentration of monovalent metal ions, dehydrating agents and various ligands. Scientific interest in such ligands rapidly increases due to their anticancerogenic potential.** |

**Keywords describing the expertise offered (up to 10 words)**

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| **Alternative structural motifs in DNA and RNA, DNA-ligand interactions, G-quadruplexes, aptamers, stability, topology, biosensors, circular dichroism, electrophoresis, human papillomaviruses** |

**Potential Contribution to the Project Proposal:**

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| |  |  | | --- | --- | |  | Research development | |  | Innovation | |  | Prototype / Model | |  | IPR Know-How | |  | Dissemination and Outreach | |  | Capacity Building | |  | Hosting/Sending Secondments | |  | Networking | |  | Other: | |

**(\*) Relevant topic in work programme**

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| **PHC-16-2015: Tools and technologies for advanced therapies (RIA)**  **PHC-33-2015: New approaches to improve predictive human safety testing (RIA)**  **PHC-03-2015: Understanding common mechanisms of diseases and their relevance in co-morbidities (RIA)**  **PHC-09-2015: PHC 9 – 2015: Vaccine development for poverty-related and neglected infectious diseases: HIV/AIDS (RIA)**  **HCO-12-2015: ERA NET: Antimicrobial resistance (ERA-NET Co-fund)** |

**Former participation in FP or other international cooperation projects**

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| **Bio-NMR Intranet: Structures of G-quadruplexes originating from Human papilloma viruses** |

**Organisation information**

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| **Organisation and country:**  **Dept. of Biochemistry at Institution of Chemistry, Faculty of Sciences, Pavol Josef Safarik University in Kosice, Slovak Republic** |
| **Type of organisation:**   |  |  | | --- | --- | |  | Enterprise | |  | SME | |  | Academic | |  | Research institute | |  | Public Body | |  | Other: | |
| **Former participation in FP European projects?**   |  |  | | --- | --- | |  | YES | |  | NO | |
| **Web address:**  [**http://www.upjs.sk/en/faculty-of-science/**](http://www.upjs.sk/en/faculty-of-science/) **or** [**http://kosice.upjs.sk/~kbch/document.php?name=links&lang=sk**](http://kosice.upjs.sk/~kbch/document.php?name=links&lang=sk) |
| **Description of the organisation:**  **Pavol Jozef Šafárik University was established in 1959 as the second classical University in Slovakia. The current structure of P. J. Šafárik University includes four faculties – Faculty of Medicine, Faculty of Science, Faculty of Law and Faculty of Public Administration. At our University there is studying more than 5 700 students. There are 1250 University staff members (500 teachers and 95 research staff).**  **The University provides education in three main cycles - bachelor’s, master’s, doctor´s and PhD. studies in different fields. The process of education is provided in both, Slovak and English language. Safarik University in Košice provides higher education based on the newest scientific findings in a wide international context. The University co-operates very intensively with academic institutions all around the world.**  **Institute of Chemistry at the Faculty of Sciences is one of the 5 institutions covering the fundamental research activities at the university. Our department of Biochemistry is one of the smallest departments. The department is included in the Section II - The Life and Chemical Sciences. In the frame of the accreditation of all the scientific institutions based on the Act of the universities and Slovak academy of Science the Faculty of Sciences is ranged in the category A\*, i. e. the excellent organization with the greater part of research fulfilling the international standard.**  **The scientific activity of the Institute is currently focused on the biochemistry of nucleic acids research, their interaction with various ligands and developing of biomaterials suitable for design of new biosensors and technologies. The research is associated with the development of new experimental methods. Most activities concentrate to the fundamental, applied and industry oriented research of the biological systems.** |

**Target Partner Sought:**

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| |  | | --- | |  | |  | | | Are you a coordinator of a project proposal looking for partners? | |  | | | Are you looking for participation in project proposal as a partner? |   **Organisation details:**   |  |  | | --- | --- | |  | Enterprise | |  | SME | |  | Academic | |  | Research institute | |  | Public Body | |  | Other: |   **Target Partner Country:**   |  |  | | --- | --- | |  | Any Country | |  | Third Country | |  | Member State or Associated Country | |  | Specific Country: | |

**(\*) Contact details**

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| **Contact person:** | **Prof. assoc. Viktor Viglasky, PhD.** |
| **Telephone:** | **+421 55 2341262** |
| **E-mail:** | [**viktor.viglasky@upjs.sk**](mailto:viktor.viglasky@upjs.sk) **or** [**vviglasky@yahoo.com**](mailto:vviglasky@yahoo.com) |
| **Country:** | **Slovak Republic** |

**(\*) Mandatory**

***Please fill in the form and return it to the National Contact Point in charge. For a full list of National Contact Points in Slovakia visit our website*** [***http://www.cvtisr.sk/cvti-sr-vedecka-kniznica/podpora-vedy/narodne-kontaktne-body-pre-horizont-2020/kontakty.html?page\_id=6725***](http://www.cvtisr.sk/cvti-sr-vedecka-kniznica/podpora-vedy/narodne-kontaktne-body-pre-horizont-2020/kontakty.html?page_id=6725)