

# Proteomics

<b>RECOOP HST Research Activity Inventory</b>			
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	<b>Institute of Molecular Biology and Genetics of NASU</b>		
Title of the Research Activity	Regulation of functional diversity of Down syndrome-related intersectin adaptor protein involved in endocytosis, cell signaling and actin rearrangements		
Department (complete address)	Principal Investigator or Head of the Research Group		
<b>Department of Functional Genomics</b> <b>150 Zabolotnogo str</b> <b>03143 Kyiv</b> <b>Ukraine</b>	Name: <b>Rynditch Alla</b>		
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E-mail: <a href="mailto:rynditch@imbg.org.ua">rynditch@imbg.org.ua</a> <a href="mailto:rynditch@yahoo.com">rynditch@yahoo.com</a>			
<b>Abstract</b>	Maximum 500 characters		
Intersectin 1 (ITSN1) gene localized on chromosome 21 has been proposed as one of the main candidates for involvement in endocytic dysfunction associated with cognitive abilities. Previously, we have found seven novel splice variants of the human and mouse ITSN1 genes that result in generation of protein isoforms with different domain composition. The objective of this project is to identify how alternative splicing modulates ITSN1 function in endocytosis and whether a particular spliced ITSN1 isoforms are associated with cognition.			
<b>Methods used</b>	Maximum 300 characters		
We plan to analyze the binding activity of ITSN1 isoforms towards protein interactors using pull-down, immunoprecipitation and SPR, as well as to increase the list of ITSN1 interactors by testing a few putative novel partners. We also plan to determine impact of different ITSN1 isoform on cell processes using RNA interference.			
<b>Related references (max 3)</b>	Indicate the impact factor of the cited reference		
1. Tsyba, L.O., Skrypkina, I.Ya., Rynditch, A.V., Nikolaienko, O., Ferenez, G., Fortna, A. and Gardiner K. (2004) Alternative splicing of mammalian Intersectin 1: domain associations and tissue specificities. Genomics, 84, 106-113. Impact factor - 4,089. 2. Gryaznova, T.A., Tsyba, L.O., Skrypkina, I.Ya., Dergay, O.V., Dergay, M.V., Kropyvko, S.V., Nikolaienko, O.K., Ferenets, G.O., Rynditch, A.V. (2006) Regulation of intersectin 1 interaction with dynamin 1 and Sos1 by brain-specific alternative splicing. In "Factors of experimental evolution of organisms" Kiev: Logos, v.3, 165-169.			
<b>Related Inventions Disclosures and Patents</b>			
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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<b>Organization</b>	Unit for Pharmaceutical Analytics Department of Biochemistry and Medical Chemistry Medical School
<b>Area of the Research</b>	BIOTECHNOLOGY, GENERIC TOOLS AND MEDICAL TECHNOLOGIES FOR HUMAN HEALTH Proteomics
<b>Title of the Research Activity</b>	Liquid chromatography (HPLC), mass spectrometry, chromatographic load, fullerene, proteomics, wineanalysis, rezveratrol
<b>Department (complete address)</b>	<b>Principal Investigator or Head of the Research Group</b>
Department of Biochemistry and Medical Chemistry, Medical School, University of Pécs, H-7624 Pécs, Szigeti út 12, Hungary	Name: Prof. Dr.OHMACHT, Róbert
	Title: Prof. Dr
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<b>Abstract</b>	Maximum 500 characters
<p><b>Research area</b></p> <p>Liquid chromatography – liquid chromatography adsorbents: silica-gel based high coverage reverse phase loads (C18,C30), columns charged to micro- and nano-HPLC, fullerene base or nanotube base chromatography loads. Loads for large selectivity solid phase extraction.</p> <p>Proteomics: our research is focused on the so-called biomarkers characteristic of individual pathological conditions and the determination of the protein profiles of complex biological and clinical samples. MALDI TOF/TOF and LC-MS/MS investigations are used to identify medical-biologically important proteins and their enzymatic chemical modifications from products of protein digestion. The research team in cooperation with several laboratories and pharmaceutical companies are investigating the covalent and intermolecular interrelation of potential chemical agents of drugs.</p> <p>The analytics of bio-compounds in terms of liquid chromatography, mass spectrometry: separation of plant agents (carotins, polipherols), vitamins, medical compounds and compounds with curative effects. Our investigations primarily focus on the physiological effects of wine products, e.g.: their protecting, curative and preventive roles in cardiological diseases. We also concentrate on the possible physiological role of non-qualified fullerenes and fullerene derivates in biocompatible solutions.</p> <p><b>Human resources</b></p> <p>full professor (1), assistant professor (1), teaching assistants (2), PhD students (2), technicians (2),members of the Students Researchers Associations (2-4)</p> <p><b>Special instruments</b></p> <p>3 liquid chromatographs (Dionex; 1 of the year of 2000, 1 of the year of 2005, 1 of the year of 2006), 1 quadrupol mass spectrometer (Finnigan, of the year of 2000), 1 iontrap</p>	

MS-MS mass spectrometer (Bruker, of the year of 2005), 1 MALDI-TOF-TOF mass spectrometer (Bruker, of the year of 2005), 1 UV-VIS spectrophotometer (Jasco V-550 of the year of 2005), full laboratory equipment for preparing samples and for lesser preparatory tasks.

**Products and services**

wine qualification, wine analysis, the analysis of peptides and proteins with liquid chromatography and mass spectrometry; analysis of organic substances with liquid chromatography or with mass spectrometry using quadrupol – ESI, APCI iontrap - MS-MS ESI, nanoESI, MALDI-TOF, MALDI-TOF-TOF

<b>Methods used</b>	Maximum 300 characters
<b>Related references (max 3)</b>	Indicate the impact factor of the cited reference
<b>Related Inventions Disclosures and Patents</b>	Patent: Silicon dioxide based adsorbents for chromatography and their use in separation of organic compounds and proteins Applicant: not PTE)

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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.					
<b>Organization</b>	University of Szeged				
<b>Area of the Research</b>	Proteomics, biomarkers, neurodegenerative diseases				
<b>Title of the Research Activity</b>	Proteomic changes in different regions of human brains				
<b>Department (complete address)</b>		<b>Principal Investigator or Head of the Research Group</b>			
Department of Medical Chemistry, Faculty of Medicine, University of Szeged 6720 Szeged, Dóm tér 8, Hungary		Name: Tamas Janaky			
		Title: associate professor			
		Tel: (36)62-545-137			
		Fax: (36)62-545-971			
		E-mail: janaky@mdche.szote.u-szeged.hu			
<b>Abstract</b>	Maximum 500 characters				
<p>The main goal of our research is to study the molecular background of psychiatric diseases (anxiety and depression) at protein level. The research strategy based on the comparison of proteomic changes in different regions of human brains and brains from animal models of these diseases.</p> <p>Our other research topic is the identification of proteins involved in Alzheimer's and Parkinson's diseases and to find small molecules inhibiting interaction of these proteins with misfolded proteins.</p>					
<b>Methods used</b>	Maximum 300 characters				
1D and 2D gel-electrophoresis, off-gel electrophoresis and chromatography to separate peptides and proteins; protein identification by "peptide mass fingerprinting", LC/MS/MS and MALDI-TOF mass spectrometry, quantitative determination of protein expression by mass spectrometry; bioinformatics					
<b>Related references (max 3)</b>	Indicate the impact factor of the cited reference				
Verdier Y, Huszar E, Penke B, Penke Z, Woffendin G, Scigelova M, Fulop L, Szucs M, Medzihradzsky K, <b>Janaky T.:</b> Identification of synaptic plasma membrane proteins co-precipitated with fibrillar beta-amyloid peptide. <i>J Neurochem.</i> <b>94</b> , 617-28 (2005) impact factor=4.969					
Janáky, T., Szabó, Z., Szeliné-Szomor, J., Szego, É., Kékesi, K., Juhász, G., Lévy, G.: Changing of brain proteom in animal models of psychiatric disease, sent for publication					
Balog, J., Csorba, A., Kekesi, K., Juhasz, G., Janaky, T.: Proteomic validation of rat synaptosomic preparates, sent for publication					
<b>Related Inventions Disclosures and Patents</b>					
Planning grant application (please mark your selection with X)		FP7		NIH	
Only participating in projects (please mark your selection with X)		FP7	x	NIH	