Capacities/Research Potential
FP7-REGPOT-2012-2013-1

Project No. 316254

BASTION

"From Basic to Translational Research in Oncology"

Deliverable D2.2

Report from organized workshops

Project start date:	1.09.2012
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Introduction

Deliverable D2.2 corresponds to the Task T2.1 "Organization of 5 workshops" in Work Package 2, that was delivered in time without any difficulties. The main objective of the Task T2.1 rests in sharing the experience and know-how during events organized for research community and academia. The leader of the Task 2.1 is Prof. Zbigniew Gaciong, the Chairman of the Department of Internal Medicine, Hypertension and Vascular Diseases. Within the Task 2.1 of WP2 we planned 5 thematic workshops:

- Cancer Genetics for Medical Community (workshop coordinator: Prof. K. Jażdżewski) – *the workshop took place on the 17th of June 2013 and was described in the previous deliverable D2.1,* (T2.1.2)*;*
- Techniques in Analysis of Cancer Vascular Biology (workshop coordinator: Prof. Z. Gaciong), (T2.1.3);
- Application of Flow Cytometry in Molecular Oncology (workshop coordinator: Dr. M. Winiarska); (T2.1.1);
- Genome-Wide Methods in Cancer Genetics (workshop coordinator: Prof. Rafal Ploski), (T2.1.4);
- Molecular Diagnostics in Cancer (workshop coordinators: Prof. Z Gaciong/Dr. P. Religa), (T2.1.5)

Summary of Workshops

The first workshop in the present reporting period, entitled "Techniques in Analysis of Cancer Vascular Biology" took place on 6th of June 2014 and concerned cancer vascular biology. Five invited speakers, who are top-notch experts in the field, gave presentations for invited guests, students and researchers. Prof. Józef Dulak, president of the European Vascular Biology Organization, and Dr. Agnieszka Łoboda, assistant professor from the Jagiellonian University in Kraków, introduced the participants to the mechanisms and latest advances in angiogenesis. Prof. Yihai Cao from Karolinska Institutet, the world-famous researcher in vascular biology, delivered presentation about regulation of angiogenesis. The

two other scientists from Karolinska Institutet, Dr. Jonas Fuxe and Dr. Piotr Religa gave speeches about, respectively, epithelial and mesenchymal transition in tumor biology, and circulating tumor cells and tumor vasculature. Interest in the workshop and attendance exceeded the organizers' expectations. The event hosted over 180 participants, whereas in the preliminary scope of the projects, we assumed the presence of about 100 people. Due to the high attendance, the event turned out to be the powerful promotional tool of the whole BASTION project, its ideas and the team members. As it was planned, participants learnt basic techniques of vascular imaging and functional analysis of vessels. The workshop was attended by clinicians, researchers and industry-based scientists interested in the field of vascular biology.

The second workshop from the series envisaged in the project proposal concerned the practical application of flow cytometry in molecular oncology. The event gained momentum as compared to the previous one. It was a two-day event, organized on 15-16 October 2014. The number of speakers, as well as attendees, also increased. During the first, scientific day, seven invited guests, the leading experts in the field, presented various aspects of flow cytometry, as well as related issues, in molecular oncology. The audience were given the broad overview of this technology, including its advantages and disadvantages, the novel applications and research directions. The meeting was opened by Dr. Przemysław Juszczyński, scientific director of the Institute of Hematology and Blood Transfusion in Warsaw, who delivered presentation "FOXO1 is an effector of B-cell receptor pathway inhibition in DLBCL." Then followed the lecture of Dr. Dimitar Efremov, head of the Molecular Hematology Group of the International Centre for Genetic Engineering and Biotechnology in Rome, entitled "B cell receptor in the pathogenesis and treatment of chronic lymphocytic leukemia." Dr. Dinis Calado, the group leader from the Cancer Research UK, talked about employment of stochastic combinatorial activation of oncogenes to study cooperative events in cancer, and Patrick Engleberts, from the Genmab A/S in Utrecht, gave the speech about the therapeutic challenges for type I CD20 antibodies in cancer immunotheraphy. Dr. Ewa Zuba-Surma, the group leader in Department of Cell Biology at the Jagiellonian University in Krakow, delivered presentation on the classical and imaging cytometry in identification of microvesicles and rare cell populations, and Dr. Cyril Fauriat, the junior principal investigator in the Centre de Rechercheen Cancérologie de Marseille, on the application for flow cytometry in immunomonitoring in cancer: development of NK cells

after HSCT. The first day meeting was closed with the lecture of Dr. Katarzyna Piwocka, head of the Laboratory of Cytometry at the Nencki Institute In Warsaw, on the prosurvival pathways in chronic myeloid leukemia cells and the search for novel therapeutic targets. During the second day, two representatives of the Becton Dickinson, Rafał Januszewski and Marzena Biernacka, presented the brief overview of the flow cytometry technology. The event aroused considerable interest at the university and among researchers. The number of participants was higher in comparison to the previous workshops, and significantly exceeded assumptions from the project plan. The workshop was attended by over 290 people, including physicians, scientists, PhD students, and medical students.

The next workshop in the series was organized on 28th of October 2014 and concerned genomic studies in cancer. Five world-class experts in the field introduced the audience with broad spectrum of genome-wide methods in cancer genetics. The event was opened with a case study by Dr. Arkadiusz Piotrowski from the Medical University of Gdańsk entitled "From custom genomic microarrays through target enrichment sequencing assays to identification of mutations predisposing to an inherited disorder: a case of multiple schwannomas". Then followed presentation of Dr. Ellen Heitzer from the Medical University in Graz "Tracking tumor-specific changes from plasma" and the lecture by Dr. Aleksandra Kołodziejczyk from EMBL-European Bioinformatics Institute & Welcome Trust Sanger Institute, Cambridge, on single cell genomics - technologies and applications. Dr. Luca Quagliata from the Institute of Pathology, University Hospital in Basel, delivered the presentation "Making the switch in Molecular Pathology: from classical sequencing approach to NGS with IonTorrent, an opportunity for diagnostics and research." The event was closed with the lecture "Sensitive and accurate detection of mutations using Pacific Biosciences Circular Consensus Sequencing" by Dr. Alexander Garvin, chief scientific officer in Droplet Diagnostics, France. The attendance during the event was the highest from among all the workshops organized, and exceeded 350 participants. Thanks to the large publicity and the excellent speakers of international renown, the event considerably contributed to strengthening the brand of the BASTION project among the research community and academia.

The last workshop within the scope of BASTION project was organized on 6th of June 2015 and was focused on modern cancer diagnostics. The excellent speakers presented the importance of molecular medicine in prognosis and treatment of cancer as well as molecular

diagnostic procedures. Dr. Karin Schuetze from CellTool in Germany started the meeting with the presentation on application of Raman microscopy to diagnostic of cancer. Prof. Christer Ericsson from Karolinska Institutet gave the lecture "Progress in CTC research and application" which was followed by the study on epigenetics, the presentation entitled "Epigenetic regulation of myelopoiesis" by Dr. Andreas Lennartsson, the researcher also affiliated with Karolinska Institutet. In the second part of the workshop, the world-class clinicians and researchers with outstanding achievements, Prof. Jan Lubiński and Prof. Cezary Szczylik, gave exciting speeches about their recent studies and ongoing projects. Prof. Lubiński, head of Department of Genetics and Pathology at the Pomeranian Medical University in Szczecin, in his lecture focused on genetic diagnostics in cancer, whereas Prof. Szczylik, head of Department of Oncology and of Laboratory of Molecular Oncology at the Military Institute of Medicine in Warsaw, presented the development in the field of personalized health care in cancer treatment. The event was attended by almost 100 participant, which equals the number that was envisaged in the project proposal.

The last three workshops were followed by a practical extension intended to give the selected audience a chance to get a real hands-on laboratory experience in the chosen techniques. The practical part of the workshop "Application of Flow Cytometry in Molecular Oncology" was organized on 6th of May 2015. The theoretical part of the workshop "Genome-Wide Methods in Cancer Genetics", was followed by a series of four separate extensions, which took place in November and December 2014. The workshop "Molecular Diagnostics in Cancer" was accompanied by a series of four practical extensions, which were organised in July in August 2015.

The practical extensions were indispensable in order to present the full potential of the techniques and methods described during theoretical parts of the workshops. Apart from the excellent opportunity to exchange know-how and experience, the extensions gave the possibility to start collaboration with the ablest young researchers. To apply for the participation in the practical extensions, we invited the researchers from the Medical University of Warsaw and the adjacent Ochota Campus, which hosts a number of biomedical research institutions.

The detailed reports from the organized workshops are available on BASTION website: www.bastion.wum.edu.pl The reports are enclosed to the Deliverable 2.2. in the form of Attachments No 1, 2, 3 and 4.

Conclusions

The workshops were organized on a grand scale, far beyond the initial scope envisaged in the plan. The BASTION project leaders and team members, as well as the university staff and administration have shown a great sense of commitment to meet the expectations of the European Commission, the academic community and the public. The honorary patronage over the conference was held by the Polish Ministry of Science and Higher Education and the Ministry of Health. The media patronage over the workshops was taken by the leading portals focused on health care and biotechnology. The speakers who delivered presentations are among the world leaders in the field of translational oncology. The events attracted the attention of academia, scientists and representatives of pharmaceutical industry. . During the workshops, we have received a lot of inquiries about the possibilities, within the framework of the BASTION project, of the follow-up in laboratories. The practical parts of the workshops received a very positive feedback from participants and indeed, created an added value to the project, opened new possibilities for future collaboration with selected young researchers and improved the research potential of the laboratories and research centers at the Medical University of Warsaw. The workshops have become one of the pillars of the entire project and a great promotional tool of the BASTION project idea. These meetings became the platform for the exchange of knowledge, experience sharing and networking, thus reaching one of the main objectives of WP2 and the goals of the whole project. They contributed towards creating a pro-innovative environment at the Medical University of Warsaw and were an important step to fulfill MUW's aspiration to become a leading research center in Central and Eastern Europe in the field of translational research. Finally, thanks to the workshops, BASTION team leaders showed students and young researchers that the Medical University of Warsaw creates the environment where they can develop their potential, carry out their scientific investigations and create the ethos of researchers.

Corresponding budget

Although the number of participants during three out of four workshops organized within this reporting period considerably exceeded the initial plan, the workshop organization cost were kept within the budget limits, which made the cost-effectiveness ratio very profitable.

In order to organize the practical part of three last workshops, we have made a request to the Project Officer for the relocation of funds between tasks and categories. Following the approval of the Project Officer, we purchased reagents necessary to carry out laboratory analyses in the practical parts. The reason behind such relocation was the importance of the practical training, in order to demonstrate the application of methods and techniques discussed during the theoretical parts of the workshops.

PERSONNEL, TRAVEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR BENEFICIARY "1" FOR 36M			
	Item description	**Amount/* [EUR]**	**Explanations**
WP2 Task 2.1	Personnel costs	42,300.39	Salaries of the WP2 Co-leader (2,59PM); Tasks leaders (2,33PM), supporting staff of WUM (7,41PM)
	Travel	1,701.17	Task 2.1.1–travel, accommodation and supper for invited speakers
		1,450,88	Task 2.1.3 – travel, accommodation and supper for invited speakers
		1,769,67	Task 2.1.4 – travel, accommodation and supper for invited speakers
		2,774,77	Task 2.1.5 – travel, accommodation and supper for invited speakers
	Subcontracting	6,582.93	Organization of workshop within Task 2.1.1& 2.1.4- catering
		1,514.08	Organization of workshop within Task 2.1.3 - catering
		1,772,73	Organization of workshop within Task 2.1.5 - catering

	Other costs	38,784.24	Training materials for practical part of Workshop 2.1.1; gadgets, dinner for invited speakers, refreshments for participants of practical workshop.
		700.76	Dinner for invited speakers, folders within Workshop 2.1.3 - catering
		24,362.11	Training materials for practical part of Workshop 2.1.4; folders
		25,082,64	Training materials for practical part of Workshop 2.1.5; refreshments for participants of practical workshop
TOTAL DIRECT WP2 COST T2.1		148 796,37	

/* - exact costs for M19-M36 will be presented in the 2nd Period Report and Form C (October 2015)

Ewa Debudaj
PR specialist

Anna Fogler
PR specialist

Prof. Jakub Golab
BASTION Project Coordinator

Warsaw, September 2015

Attachments

Attachment No 1

1. Report from the organized workshop:

Techniques in analysis of cancer vascular biology

Medical University of Warsaw

6th of June 2014

Prof. Zbigniew Gaciong
T2.1.3 Leader

BASTION project Task:T2.1.3

The workshop was organized by the Department of Internal Medicine, Hypertension and Vascular Diseases of the Medical University of Warsaw, as a part of the BASTION project.

Picture 1: Venue of the workshop "Techniques in analysis of cancer vascular biology"

The speakers during the conference were the leading experts in the field of cancer vascular biology: Dr Agnieszka Łoboda assistant professor at the Department of Medical Biotechnology, the Faculty of Biochemistry, Biophysics and Medical Biotechnology Jagiellonian University, Prof. Józef Dulak – President of the European Vascular Biology Organization; Dr Jonas Fuxe from the Karolinska Institutet; Dr Piotr Religa from the Karolinska Institutet and prof. Yihai Cao from the Karolinska Institutet.

The honorary patronage over the conference was held by the Ministry of Science and Higher Education and the Ministry of Health. The media patronage of the event were the biggest magazine focused on health care sector RynekZdrowia, portal laborant.pl, the biggest portal in Poland focused on biotechnology biotechnologia.pl and the national television TVP Info.

Picture 2: Prof. Jozef Dulak during his lecture

Prof. Józef Dulak, PhD, DSc, is the head of the Department of Medical Biotechnology, Faculty of Biochemistry, Biophysics and Biotechnology of the Jagiellonian University in Krakow, Poland. He is a doctor honoris causa of the University of Orleans, France, a corresponding member of the Polish Academy of Arts and Sciences and the president of the European Vascular Biology Organization (EVBO). He is also the coordinator of the International Associated Laboratory (LIA), supported by CNRS, France and Jagiellonian University. Prof. Dulak is also a member of the Committee of Biochemistry and Biophysics and the Committee of Biotechnology of the Polish Academy of Sciences and a member of the Committee for Evaluation of Scientific Institutions (KEJN) at the Ministry of Science and Higher Education. Prof. Dulak is in the editorial board of Arteriosclerosis, Thrombosis and Vascular Biology, the Vascular Cell and Folia Biologica. His research interest include stem cell biology, vascular biology and medicine, gene and cell therapy, cancer biology, microRNAs, inflammation and oxidative stress-driven mechanisms of diseases. Prof. Dulak is the author of more than 140 papers, which have been cited almost 4000 times, and his H-index is 33. Prof. Dulak has been awarded the Polish Academy of Arts and Sciences Tadeusz Browicz prize (2011), and the prize of the Ministry of Science and Higher Education (2006). The research of Prof. Dulak and his co-workers are supported by grants from the National Science Center, National Center for Research and Development, Ministry of Science and Higher Education, Foundation for Polish Science. Prof. Jozef Dulak told the audience about the recent advances in angiogenesis: microRNA and metabolism.

Picture 3: Prof. Yihai Cao during his presentation

Prof. Yihai Cao is the international leading scientist in vascular biology who is a highly talented, imaginative and creative scientist. His scientific originality has led to establish a new research field of controlling metabolic diseases by targeting angiogenesis. Cao will continue to do groundbreaking research and lead the field of angiogenesis research. Cao, born in Shandong, China, received his medical training at the Medical School, Shandong University in 1983. 1983-1986, he received further basic and clinical training from the Chinese Academy of Medical Sciences and from the Ludwig Institute for Cancer Research, Switzerland. He obtained his Ph.D. degree in 1993 from the Karolinska Institutet, followed by a 3-yr postdoctoral training period at the Harvard Medical School, Children's Hospital (Dr Judah Folkman's Laboratory), Boston, Massachusetts. He returned to the Karolinska Institutet in 1996 and became a full professor in 2004. He received an honorary medical degree (M.D.) from Copenhagen University, Denmark in 2006. He is currently a guest professor at the Linköping University, Sweden. He has been recently appointed as a honorary professor at the Leicester University, UK and has been nominated to become an adjunct professor at the Copenhagen University, Denmark. He is also honored a professorship at the Shinshu University Japan. He received the Fernström research prize. In 2010, Dr Cao received a distinguished professor award at the Karolinska Institutet. Dr Cao also received the ERC-advanced research grant award for being the top scientist in Europe. His research interests include molecular mechanisms of pathological angiogenesis that contributes to obesity, metabolic diseases, diabetic complications, cancer, metastasis, and cardiovascular diseases, with emphasis on clinical relevance and translational research. He has published more than 170 research articles, which have been cited more than 13 900 times. Prof. Cao gave the lecture on the regulation of angiogenesis, and inhibitors of this process.

Picture 4: Dr Jonas Fuxe

Dr Jonas Fuxe received his PhD training in Cell, Molecular & Tumor Biology at the Ludwig Institute for Cancer Research/Karolinska Institute (KI) in Stockholm, Sweden. After completing his medical studies at KI he went for a postdoc at the Cardiovascular Research Institute and Comprehensive Cancer Center, University of California San Francisco (UCSF). At UCSF, Dr. Fuxe worked in Donald M. McDonald's research group to identify cellular and molecular mechanisms of vascular remodeling in chronic inflammation. Upon returning to Sweden in 2007, Dr Fuxe was appointed a faculty position at KI. Currently, Dr Fuxe is an Associate Professor at the Department of Medical Biochemistry and Biophysics (MBB), KI. His research focuses primarily on the role of epithelial-mesenchymal transition (EMT) in tumor cell invasion and metastasis. Dr Fuxe told the audience about epithelial and mesenchymal transition in tumor biology.

Picture 5: Dr Agnieszka Łoboda

Agnieszka Łoboda, PhD, holds the position of the assistant professor at the Department of Medical Biotechnology, the Faculty of Biochemistry, Biophysics and Medical Biotechnology Jagiellonian University, Krakow, Poland. Agnieszka Łoboda obtained her PhD from Jagiellonian University in 2006. Her research interest includes molecular and cellular basis of angiogenesis as well as its role in diseases, like in cancer and kidney disorders. She investigates the mechanisms of regulation of angiogenic gene expression in hypoxia (low oxygen concentration) which is one of the pathophysiological signatures of growing tumors. Dr Łoboda has co-authored 45 papers, has held as well as participated in several research grants. Recently she was a co-editor of the book "Angiogenesis and Vascularisation – Cellular and Molecular Mechanisms in Health and Diseases" published by Springer. Dr Łoboda was awarded many prestigious prizes, including START scholarship from the Foundation for Polish Science, L'Oreal Poland Award for Women in Science, stipend for outstanding young scientists from the Minister of Science and Higher Education as well as the magazine POLITYKA scholarship 'Stay with us' for young and talented researchers. Dr Łoboda told the audience about the mechanisms of angiogenesis.

Picture 6: Dr Piotr Religa giving lecture about circulating tumor cells and tumor vasculature

Piotr Religa, M.D., Ph.D. is a graduate of the Medical University of Warsaw (class of 1997). His Ph.D. thesis (Department of Vascular Surgery, Karolinska Institutet, Stockholm, Sweden, 2003) was on the Development of Intimal Hyperplasia in Transplant Arteriosclerosis. His Ph.D. supervisors was Prof. Ulf Hedin and Prof. Johan Thyberg. Starting from 2003 till 2006 he took postdoctoral fellowship at Microbiology and Tumor Biology Center, Karolinska Institutet, Stockholm, Sweden at Prof. Yihai Cao. In 2008 till 2009 he took postdoc at Center for Cardiovascular Biology UW Medicine, Department of Pathology, Seattle US at Prof. Charles Murry and in the Seattle Cancer Care Alliance at Dr Daniel Sabath.

Dr Religa told the audience about the circulating tumor cells and tumor vasculature.

The workshop was an excellent opportunity for the interviews. The workshop speakers gave interviews for TV and portals focusing on medical sector**.**

Picture 7: Prof. Cao giving an interview

The conference hosted over a 180 participants, including medical doctors, basic scientists, PhD students and medical students. All the participants had the chance to discuss important issues during coffee and lunch breaks. The number of participants is almost 2 times higher than the project scope description estimated, at the same time the cost of organizing the conference were not exceeded. This gives very good cost effectiveness ratio for the event.

The speakers, except Prof. Cao, did not agree to share the presentation for the administration purposes that have been presented during the event.

Agenda of the workshop:

Klinika Chorób Wewnętrznych
Nadciśnienia Tętniczego i Angiologii
Warszawski Uniwersytet Medyczny

Serdecznie zaprasza na międzynarodową konferencję naukową

Techniki analityczne używane w biologii naczyń nowotworów
(Techniques in analysis of cancer vascular biology)

6 czerwca 2014, godzina 9.00-15.30
Miejsce obrad: Centrum Dydaktyczne
Warszawskiego Uniwersytetu Medycznego
ul. Księcia Trojdena 2a, Aula B

Honorowy przewodniczący konferencji: prof. Józef Dulak Head of Department of Medical Biotechnology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University.

PROGRAM:

Od 9.00	**Rejestracja uczestników**
9.30-9.45	**Otwarcie konferencji i powitanie**
	Prof. Józef Dulak
9.45-10.15	**Mechanisms of angiogenesis**
	Dr Agnieszka Łoboda (Department of Pathology, Warsaw Medical University)
10.15-10.30	**Q&A**
10.30-11.00	**Recent Advances in Angiogenesis: microRNA and metabolism**
	Prof. Józef Dulak (President of European Vascular Biology Organization)
11.00-11.15	**Q&A**
11.15-11.30	**Przerwa kawowa**
11.30-12.00	**Epithelial and mesenchymal transition in tumor biology**
	Dr Jonas Fuxe (Karolinska Institutet)
12.00-12.15	**Q&A**
12.15-12.45	**Circulating tumor cells and tumor vasculature**
	Dr Piotr Religa (Karolinska Institutet)
12.45-13.00	**Q&A**
13.00 -14.00	**Obiad**
14.00 -14.30	**Regulation of angiogenesis, inhibitors**
	Prof. Yihai Cao (Karolinska Institutet)
14.30 -14.45	**Q&A**
Od 14.45	**Przerwa kawowa**

Informacje i zgłoszenia na konferencję:
bastion@wum.edu.pl, 22 572 04 65
www.bastion.wum.edu.pl/warsztaty/

Patronat honorowy:

Patroni medialni:

Rynek Zdrowia · Laborant.pl · Biotechnologia.pl · TYP INFO

Projekt finansowany przez Unię Europejską w ramach 7 Programu Ramowego.

Attachment No 2

2. Report from the organized workshop:

Application of flow cytometry in molecular oncology

Medical University of Warsaw

15-16th of October, 2014

Dr. Magdalena Winiarska
T2.1.1 Leader

BASTION project Task:T2.1.1

The workshop was organized by the Department of Immunology, Medical University of Warsaw, as a part of the BASTION project.

Picture 1: The reception desk of the workshop "Application of flow cytometry in molecular oncology"

The speakers during the workshop were the leading experts in the field of flow cytometry in molecular oncology: Przemysław Juszczyński from the Institute of Hematology and Blood Transfusion, (Warsaw); Dimitar Efremov from the Molecular Hematology, International Centre for Genetic Engineering and Biotechnology (Rome); Dinis Calado from the Cancer Research UK, London Research Institute (London); Patrick Engelberts from the Genmab A/S (Utrecht); Ewa Zuba-Surma from the Jagiellonian University, Malopolska Centre for Biotechnology (Cracow); Cyril Fauriat from the Centre de Recherche en Cancérologie de Marseille; Katarzyna Piwocka from the Nencki Institute of Experimental Biology (Warsaw); Rafal Januszewski from the Becton Dickinson and Marzena Biernacka from the Becton Dickinson.

The honorary patronage over the conference was held by the Ministry of Science and Higher Education and the Ministry of Health. Partners of the event ware: infoNFZ.pl; Termedia publishing house, Openmediaca, Life Science OpenSpace; Klaser Life Science Cracow. The media patronage of the event were the Rynek Zdrowia magazine, MedTube, Laborant.pl service, Biotechnologia.pl service, eOnkologia.pl service, Medycyna Praktyczna magazine, Lekarz Onkolog service, Naukowiec.org service and Gazeta Lekarska magazine.

Picture 2: Dr Przemysław Juszczyński during his presantation

Przemysław Juszczyński, PhD graduated from the Medical University of Lodz in 2000 with an MD degree. Thereafter, he enrolled the PhD program in the Department of Hematology, the Medical University of Lodz under the supervision of Prof. Krzysztof Warzocha. In 2001, he trained at the Dept. of Hematology and Hematologic Malignancies Diagnostic Services, Leeds General Infirmary, Leeds, UK. In 2002, he defended his dissertation "Genetic polymorphisms in the tumor necrosis factor (TNF) locus influence non-Hodgkin's lymphoma outcome" and obtained PhD degree. His work was recognized and awarded by the START fellowship from Foundation for Polish Science. Right afterwards, he received ICRETT fellowship from International Union Against Cancer (Geneva, Switzerland) and KOLUMB fellowship from Foundation for Polish Science, and in August 2003 began his postdoctoral training at the Dana Farber Cancer Institute, Harvard Medical School, Boston, MA in Prof. Margaret Shipp laboratory. He completed multiple bioinformatic courses at the Whitehead Institute for Biomedical Research, Massachusetts Institute of Technology, Cambridge, MA. In 2006, he joined Harvard Medical School junior faculty as an Instructor in Medicine. In 2010, he started work in the Institute of Hematology and Transfusion Medicine, where he obtained DSc (habilitation) degree and was appointed as associate professor. Since 2011, Prof. Juszczyński hold the position of Scientific Director of the Institute. In the same year, he received a TEAM grant "Tumor suppressor function of FOXO1 in diffuse large B-cell lymphomas: mechanisms of regulation and personalized rational targeting strategies" from the Foundation for Polish Science. Professor is an active member of the American Association for Cancer Research and American Society of Hematology. Prof. Juszczyński gave an exciting lecture entitled "FOXO1 is an effector of B-cell receptor pathway inhibition in DLBCL".

Picture 3: Dr Dimitar Efremov giving the lecture

Dimitar Efremov, PhD is Staff Scientist and Head of the Molecular Hematology Group of the International Centre for Genetic Engineering and Biotechnology (ICGEB), located in Rome, Italy. Dr. Efremov obtained his MD degree in 1986 at the Faculty of Medicine in Skopje, Macedonia, where he also completed his specialization in internal medicine and training in hematology. He received fellowships from the Medical College of Georgia, Augusta, GA, and from the International Centre for Genetic Engineering and Biotechnology, Trieste, Italy, and obtained his PhD degree in 1994 from the Faculty of Medicine, Limburg University, Maastricht, The Netherlands. In 1994 he became Staff Scientist at the International Centre for Genetic Engineering and Biotechnology in Trieste, Italy, where he remained until 1998. Later he returned to the Department of Hematology, Faculty of Medicine, Skopje, Macedonia, where he was appointed as an Associate Professor of Internal Medicine. In 2003, he moved again to Italy and established the ICGEB Molecular Hematology Group and the ICGEB Monterotondo Outstation.

Dr. Efremov's primary research interest is chronic lymphocytic leukemia, particularly investigation of the cellular and molecular mechanisms governing the development and progression of the disease and identification of novel targeted therapies. He has also contributed in other research areas, including B-cell lymphoma, hemoglobinopathies, autoimmunity, allergy and bone marrow transplantation. He has authored or co-authored more than 100 articles in peer-reviewed medical journals, including Blood, Journal of Clinical Investigation, Journal of Experimental Medicine, Leukemia and the Proceedings of the National Academy of Sciences USA. For his research he has received grants from several national and international organizations, including the Leukemia & Lymphoma Society and

the Italian Association for Cancer Research. Dr. Efremov gave an exciting lecture on the "B cell receptor in the pathogenesis and treatment of chronic lymphocytic leukemia."

Picture 4: Dinis Calado presenting his studies

Dinis Calado joined the Cancer Research UK, London Research Institute in London as a group leader in 2013 after his postdoctoral work at Harvard Medical School in Boston. His research aims to elucidate mechanisms by which healthy cells of the hematopoietic system become cancerous, with major focus on B lymphocytes. Using state-of-the-art mouse genetics, he has generated bona fide mouse models of cancer, including Diffuse Large B cell Lymphoma, and Burkitt's Lymphoma, and has identified in vivo subpopulations of B cells with high c-Myc expression, that may represent precursors of these diseases. His research was published in Cell, Science, Cancer Cell, Immunity, Journal of Experimental Medicine, among others. Dinis Calado gave the lecture on the "Stochastic Combinatorial Activation of Oncogenes to Study Cooperative Events in Cancer."

Picture 5: Dr Ewa Zuba-Surma giving the presentation

Ewa Zuba-Surma, PhD, DSC Graduated from Jagiellonian University in Krakow and Pomeranian Medical University in Szczecin (DSc). Dr Zuba-Surma finished her 4-year postdoctoral fellowships in Institute of Molecular Cardiology and Stem Cell Biology Institute at the University of Louisville, KY,USA. At present, Dr Zuba-Surma is an adjunct and group leader in the Department of Cell Biology at the Faculty of Biochemistry, Biophysics and Biotechnlogy at the Jagiellonian University in Krakow. She is also a Leader of Stem Cell Biotechnology Laboratory and Head of Flow Cytometric Research group in Malopolska Centre for Biotechnology in Cracow.

Dr Zuba-Surma is the author of more than 70 publications in stem cell and flow cytometry fields and co-authors of one patent and nine patent applications in stem cell field. She is awarded by several national and international prices and stipends for scientific achievements including ISAC President's Award for Excellence, Award of Prime Minister of Republic of Poland for habilitation.

Dr. Zuba-Surma's primary research interest focuses on characterization of stem/ primitive cell populations and their derivatives (microvesicles; MVs) for their applications in regenerative medicine – with the special focus on repair of infarcted myocardium and ischemic tissues. Dr. Zuba-Surma involves also in research on application of selected stem cell population and their derivatives (MVs) in ischemic tissue regeneration. Dr. Zuba-Surma does also novel flow cytometric technologies for identification and visualization of cells. Dr. Zuba-Surma, delivered the presentation on the "Classical and imaging cytometry in identification of microvesicles and rare cell populations."

Picture 6: Dr Cyril Fauriat during his lecture

Cyril Fauriat, PhD graduated from studies in Biochemistry, Cellular and Molecular Biology, Immunology and Physiology from the University of Aix-Marseille III (France). Thereafter, he enrolled the PhD program in the Immunology, University of Aix-Marseille II (France). From 2006 till 2009, he did Postdoctoral Research Fellowship in Karolinska Institutet, Stockholm. From 2011, he is working as the junior principal investigator in the Centre de Recherche en Cancérologie de Marseille. In 2004, he received Young investigator award International from Society of Natural Immunity and from International Society for Analytic Cytology. He is the author of 21 publications with 570 citations. H-index: 15.Dr. Fauriat, gave the interesting lecture on the "Application for flow cytometry in immunomonitoring in cancer: development of NK cells after HSCT."

Picture 7: Dr Katarzyna Piwocka

Katarzyna Piwocka, PhD is head of the Laboratory of Cytometry at the Nencki Institute In Warsaw since 2010. She obtained her PhD degree in 2001 at the Nencki Institute, and completed her postdoctoral training at the Cork Cancer Research Centre in Ireland, where she was involved in the studies of chronic myeloid leukemia. She returned to the Laboratory of Molecular Bases of Aging, and in 2010 she was awarded in the open competition and established the Laboratory of Cytometry at the Nencki Institute. Her scientific activities aims to elucidate the prosurvival pathways activated in chronic myeloid leukemia cells, participating in the disease progression and development of resistance. She contributed to discovery of novel protective mechanism activated by BCR-ABL oncoprotein in CML cells, which can be the prospective therapeutic target in CML. Her group collaborates with scientist from different national institutions as well as the McGill University in Canada, Temple University in USA, Groningen Research Institute of Pharmacy in Netherlands and others. For her research she has received grants from several national and international organizations, including National Science Centre, Ministry of Science and Higher Education, the Leukemia & Lymphoma Society of Canada. Dr. Piwocka gave an exciting lecture on the "Prosurvival pathways in chronic myeloid leukemia cells - looking for novel therapeutic targets."

The speakers Rafal Januszewski and Marzena Biernacka from Becton Dickinson did not agree to share the presentation for the administration purposes that have been presented during the event.

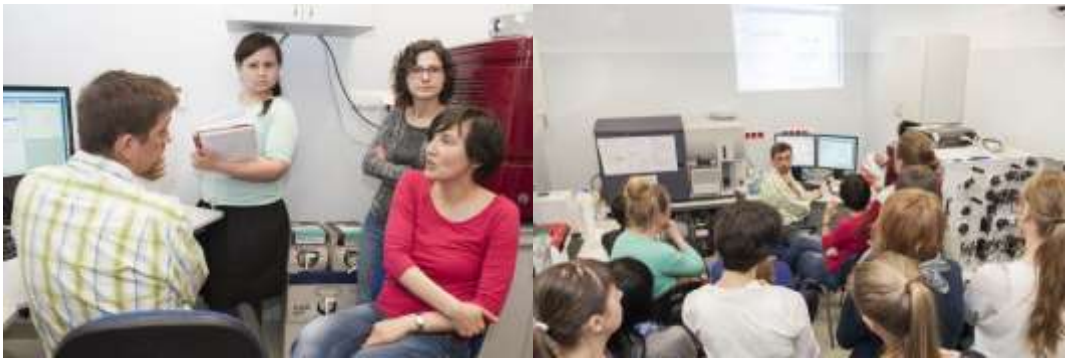
Picture 8: Rafał Januszewski during the presentation

The conference hosted over a 290 participants, including medical doctors, basic scientists, PhD students and medical students. All the participants had the chance to discuss important issues during coffee and lunch breaks. The number of participants is almost 3 times higher than the project scope description estimated, at the same time the cost of organizing the conference were not exceeded. This gives an excellent cost effectiveness ratio for the event.

The main event was followed by a practical extension of the workshop (organized on 6thof May, 2015) intended to give the selected audience a chance to get a real laboratory hands-on experience in flow cytometry techniques.

Picture 9: Attendees of the practical extension of the workshop

Selected participants of the workshop were encouraged to apply for this extension, design their own flow cytometry panels and specify their needs as far as flow cytometry assays are concerned. The most interesting panels were selected and the successful applicants were invited to participate in all steps of the flow cytometry analysis: designing a proper panel of antibodies and fluorochromes, preparation of the samples and flow cytometer, sample acquisition and analysis with various available softwares.



Picture 10 & 11: Attendees of the practical extension of the workshop

Department of Immunology provided the laboratory space and all necessary equipment, including the access to flow cytometers (FACS Aria III, FACS Scan, FACS Acurri) and appropriate software with all mandatory human support and assistance.

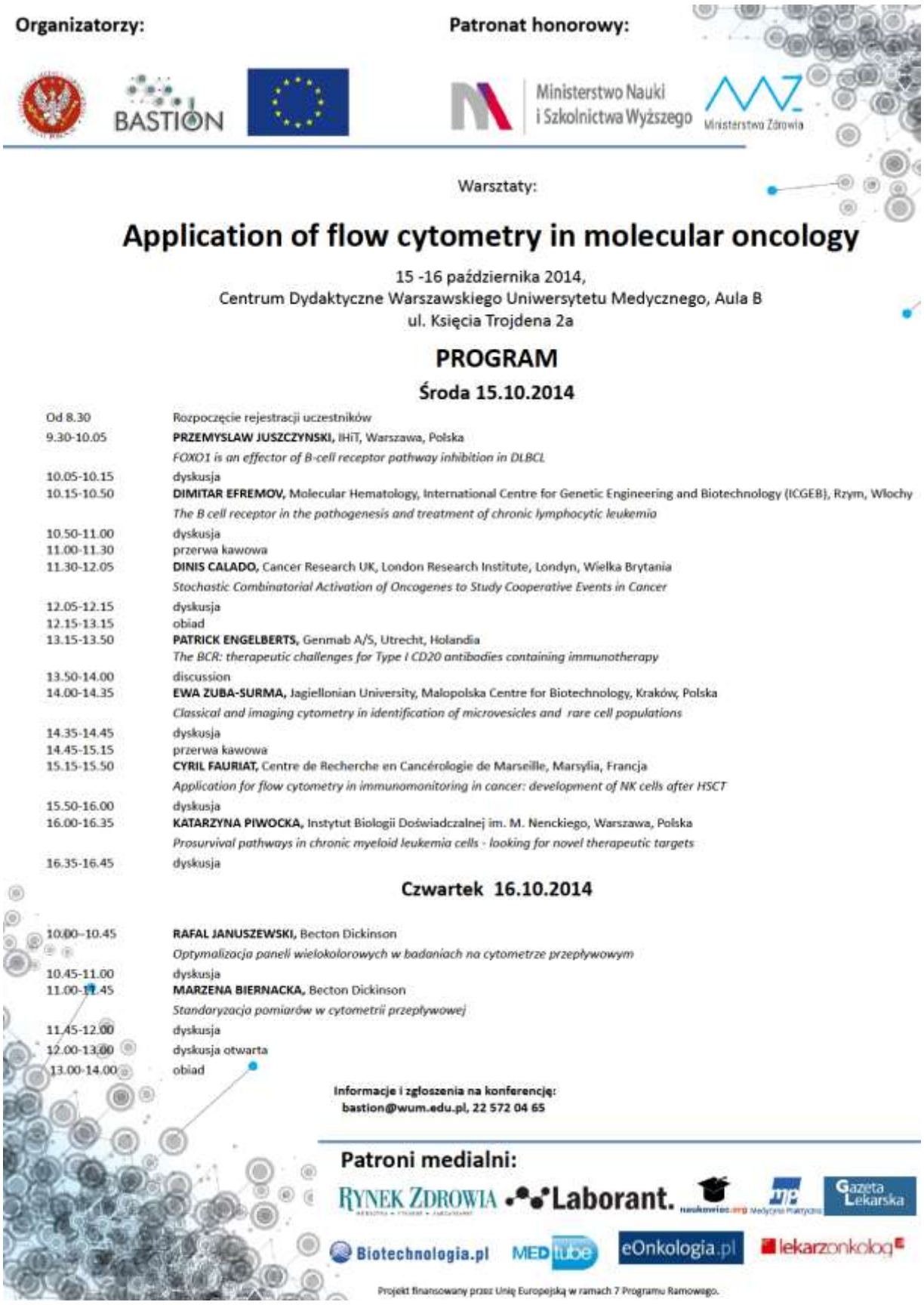
Several methods were used and following experiments were designed and performed:

- multicolor and multiparameter analysis of surface markers
- intracellular staining of proteins using several protocols for permeabilization of cells

- analysis of “rare” cell populations (exemplified by endothelial progenitor cells)
- quantitative assessment of cytokines using CBA Flex Set
- detection of necrotic/apoptotic cells with various dyes

This practical extension served as an excellent opportunity to exchange research ideas and share knowledge on current activities. Moreover, it promoted our flow cytometry core facility, attracted new collaborators and expanded the research potential of the Medical University of Warsaw. For postdocs employed within BASTION project, practical training created a unique opportunity to increase their scientific activity and to start new cooperation studies, both within the Medical University of Warsaw and with external laboratories.

Agenda of the theoretical part of the workshop:



Organizatorzy:

Patronat honorowy:

Ministerstwo Nauki i Szkolnictwa Wyższego

Ministerstwo Zdrowia

Warsztaty:

Application of flow cytometry in molecular oncology

15 -16 października 2014,
Centrum Dydaktyczne Warszawskiego Uniwersytetu Medycznego, Aula B
ul. Księcia Trojdena 2a

PROGRAM

Środa 15.10.2014

Od 8.30	Rozpoczęcie rejestracji uczestników
9.30-10.05	**PRZEMYSLAW JUSZCZYNSKI,** IHiT, Warszawa, Polska *FOXO1 is an effector of B-cell receptor pathway inhibition in DLBCL*
10.05-10.15	dyskusja
10.15-10.50	**DIMITAR EFREMOV,** Molecular Hematology, International Centre for Genetic Engineering and Biotechnology (ICGEB), Rzym, Włochy *The B cell receptor in the pathogenesis and treatment of chronic lymphocytic leukemia*
10.50-11.00	dyskusja
11.00-11.30	przerwa kawowa
11.30-12.05	**DINIS CALADO,** Cancer Research UK, London Research Institute, Londyn, Wielka Brytania *Stochastic Combinatorial Activation of Oncogenes to Study Cooperative Events in Cancer*
12.05-12.15	dyskusja
12.15-13.15	obiad
13.15-13.50	**PATRICK ENGELBERTS,** Genmab A/S, Utrecht, Holandia *The BCR: therapeutic challenges for Type I CD20 antibodies containing immunotherapy*
13.50-14.00	discussion
14.00-14.35	**EWA ZUBA-SURMA,** Jagiellonian University, Malopolska Centre for Biotechnology, Kraków, Polska *Classical and imaging cytometry in identification of microvesicles and rare cell populations*
14.35-14.45	dyskusja
14.45-15.15	przerwa kawowa
15.15-15.50	**CYRIL FAURIAT,** Centre de Recherche en Cancérologie de Marseille, Marsylia, Francja *Application for flow cytometry in immunomonitoring in cancer: development of NK cells after HSCT*
15.50-16.00	dyskusja
16.00-16.35	**KATARZYNA PIWOCKA,** Instytut Biologii Doświadczalnej im. M. Nenckiego, Warszawa, Polska *Prosurvival pathways in chronic myeloid leukemia cells - looking for novel therapeutic targets*
16.35-16.45	dyskusja

Czwartek 16.10.2014

10.00–10.45	**RAFAL JANUSZEWSKI,** Becton Dickinson *Optymalizacja paneli wielokolorowych w badaniach na cytometrze przepływowym*
10.45-11.00	dyskusja
11.00-11.45	**MARZENA BIERNACKA,** Becton Dickinson *Standaryzacja pomiarów w cytometrii przepływowej*
11.45-12.00	dyskusja
12.00-13.00	dyskusja otwarta
13.00-14.00	obiad

Informacje i zgłoszenia na konferencję:
bastion@wum.edu.pl, 22 572 04 65

Patroni medialni:

RYNEK ZDROWIA · Laborant. · naukowiec.org · Medycyna Praktyczna · Gazeta Lekarska · Biotechnologia.pl · MEDtube · eOnkologia.pl · lekarzonkolog

Projekt finansowany przez Unię Europejską w ramach 7 Programu Ramowego.

Attachment No 3

3. Report from the organized workshop:

Genome-wide methods in cancer genetics

Medical University of Warsaw

28th of October, 2014

Prof. Rafał Płoski
T2.2.4 Leader

BASTION project Task:T2.1.4

Picture 1: The reception desk of the workshop "Genome-wide methods in cancer genetics"

The workshop was organized by the Department of Medical Genetics, Medical University of Warsaw, as a part of the BASTION project.
During the event five invited experts covered all leading technological approaches to genomic studies in cancer. This was followed by a series of practical extensions lasting 3-4 days, in course of which selected attendees participated in complete next generation sequencing procedures at the Department of Medical Genetics.

The honorary patronage over the workshop was held by the Ministry of Science and Higher Education and the Ministry of Health. Partners of the event ware: infoNFZ.pl; Termedia publishing house, Openmedica, Life Science OpenSpace; Cluster Life Science Cracow.

The media patronage of the event were the Rynek Zdrowia magazine, MedTube, Laborant.pl service, Biotechnologia.pl service, eOnkologia.pl service, Medycyna Praktyczna magazine, Lekarz Onkolog service, Naukowiec.org service and Gazeta Lekarska magazine.
The speakers invited for the event were experts in the field of genome-wide methods in cancer genetics: dr Arkadiusz Piotrowski from the Medical University of Gdańsk (Poland); dr Ellen Heitzer from the Medical University in Graz (Austria); Aleksandra Kołodziejczyk from EMBL-European Bioinformatics Institute & Welcome Trust Sanger Institute, Cambridge (UK); dr Luca Quagliata from the Institute of Pathology, University Hospital, Basel (Switzerland) and dr Alex Garvin from the Droplet Diagnostics, Mulhouse (France).

Picture 2: Dr Arkadiusz Piotrowski presenting his case study

Arkadiusz Piotrowski, PhD, is focusing on the role of structural genomic rearrangements in human diseases, with the emphasis on cancer research (primarily breast cancer) and rare hereditary disorders (schwannomatosis/neurofibromatoses). He specializes in a development of custom microarrays as well as next generation sequencing solutions to study the above mentioned as well as other aspects of human genetics. He is working as an assistant professor at the Faculty of Pharmacy, Medical University of Gdańsk, Poland. He is also affiliated on collaborative basis with the Department of Genetics, University of Alabama in Birmingham.

Dr. Piotrowski presented a lecture entitled “From custom genomic microarrays through target enrichment sequencing assays to identification of mutations predisposing to an inherited disorder: a case of multiple schwannomas”. It was an elegant case study proving a principle that even though the next generation sequencing is capable of analyzing a whole genome, it may be fruitless unless it is prefocused on a certain genome region, based on data generated with more classical genetic tools.

Picture 3: Dr Ellen Heitzer during her lecture

Ellen Heitzer, PhD, has been primarily interested in genetics and epigenetics of cancer. She became an expert in utilizing freely circulating neoplastic DNA and neoplastic cells as sources of genetic material. She has successfully applied this methodology for studies on copy number variations in neoplasms, on dissemination of breast cancer and glioblastoma, on assessing the prognosis of colorectal cancer and its genomic evolution under treatment pressure. She is affiliated with the Institute of Human Genetics, Medical University of Graz.

Dr. Heitzer gave an exciting lecture on "Tracking tumor-specific changes from plasma". Of a particular interest was the fact that a very informative spectrum of copy number variations in the sample can be obtained at a really low cost. However, one needs to keep in mind that a bioinformatic pipeline developed in-house for this study has not been published so far, so any followers would need to re-develop a similar method beforehand.

Picture 4: Aleksandra Kołodziejczyk giving the lecture

Aleksandra Kołodziejczyk specializes in single cell transcriptomics, developing methodology as well as applying the technology to study stem cells and immune cells. She is currently a PhD student in EMBL-European Bioinformatics Institute and Wellcome Trust Sanger Institute in Cambridge (UK).

She presented the fascinating lecture on "Single cell genomics - technologies and applications", outlying the available spectrum of single cell genomic methods, their advantages and shortcomings. The lecturer was extensively referring to her own experience and discussed a number of methodological issues plus some basic research concepts, such as burst transcription and low copy transcripts and its impact on results. Possible applications in oncology were discussed, such as studies on tumor heterogeneity and cancer stem cell component (especially important for therapy assessment and selection) as well as studies of samples of limited quantity/volume, what is quite common in certain clinical settings.

Picture 5: Dr Luca Quagliata delivering his presentation

Luca Quagliata, PhD began his career from studies on anti-metastatic interventions in breast cancer. Recently, he focuses primarily on liver carcinogenesis, characterizing specific molecular alterations occurring during this process, especially regarding long noncoding RNAs, and studies their functional relevance. Since May 2012, he is responsible for the NGS unit at the Institute of Pathology in Basel, which provides diagnostic and research services for the University Hospital of Basel.

Dr Quagliata gave an interesting lecture entitled "Making the switch in Molecular Pathology: from classical sequencing approach to NGS with IonTorrent, an opportunity for diagnostics and research". He surprised most of the Polish audience with the presentation of a complete

oncogenetic analysis workflow operating in a "standard" pathomorphology lab, which – within a couple of days – allows to sequence a panel of cancer-related genes from the sample and supplement the results by therapeutic suggestions based on identified mutations. As it appears, in Switzerland such analysis may suffice to embark on a therapeutic experiment with a compound obtained from pharmaceutical industry on an individual basis. The lecture inspired a lot of discussions about the shape and the future (or presence?!) of personalized medicine that were continued during the coffee break and at the dinner that followed.

Picture 6: Dr Alexander Garvin

Alexander Garvin, PhD has a long record of application research, often in cooperation with industry, focusing primarily on detection of mutations and polymorphisms. He designed a test for truncating mutations in BRCA1 and BRCA2, developed methods for LOH and mutation detection in single cells for oncology and obstetrics, refined genetic analyses for forensics, investigated applicability of MALDI-TOF for mutation studies. At present he is Chief Scientific Officer in Droplet Diagnostics, France and cooperates with Pacific Biosciences on adapting PacBio proprietary technology (Single molecule real time, SMRT) for cancer research.

Dr Garvin gave a lecture on "Sensitive and accurate detection of mutations using Pacific Biosciences Circular Consensus Sequencing". He presented a rationale for developing a DNA test for colorectal cancer and explained why SMRT sequencing is particularly well-suited for this task. Of general importance was also the explanation that error ratio in SMRT sequencing can be easily regulated at the cost of output, what gives extra flexibility to the method and allows for better tailoring to the researcher's needs (long reads being useful for de-novo

sequencing, short accurate reads being required for mutation scan / diagnostic purposes)

The conference hosted over 350 participants, including medical doctors, basic scientists, PhD students and medical students. All could actively participate in Q&A sessions and continue the discussions during coffee and lunch breaks. The number of participants exceeded the estimations from the project scope over threefold, while the costs of the event were kept within pre-planned limits, giving an excellent cost-effectiveness ratio for the event.

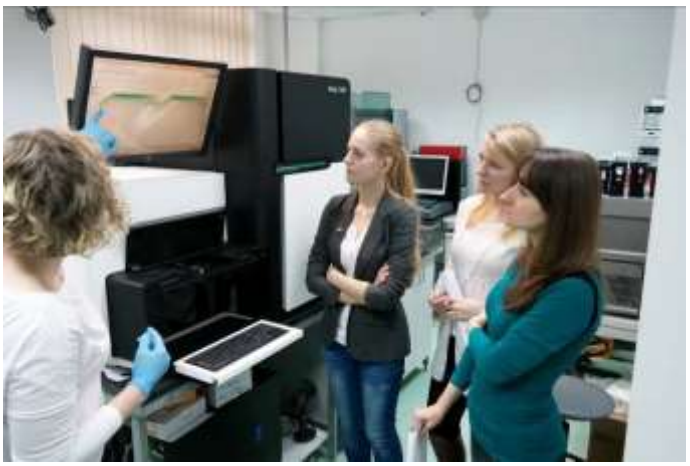
The main event was followed by a practical extension of the workshop that was intended to give the selected audience a chance to participate in the whole procedure of next generation sequencing applied to studies of neoplasms. All participants of the workshop were encouraged to apply for this extension. They were asked to submit a short description of what they are particularly interested to achieve with NGS methodology. That would have enabled us to tailor the extension to their needs and let them bring their own samples for analysis, what arguably is the best possible way to promote the new technology.

Overall, 26 applications were submitted, of which 18 were initially selected and 17 ultimately qualified. Four separate practical extensions were finally held due to the varying scopes of desired analysis:

- methylome sequencing extension (RRBS – relative representation bisulphite sequencing) – 12-14 November – 4 applications (incl. one calling for RRBS and WES)

Picture 7: Attendees of the practical extension: part 1

- transcriptome sequencing (RNAseq) extension - 2-3 December - 3 applications



Picture 8: Attendees of the practical extension: part 2

- cancer gene panel sequencing (targeted sequencing) extension – 3-5 December - 5 applications (incl. one that also called for RRBS)

Picture 9: Attendees of the practical extension: part 3

- whole exome sequencing (WES) extension – 9-11 December – 7 applications, including 2 cross-scope ones (1 also included RRBS, 1 also included panel); this extension was ultimately split into two groups

Picture 10: Attendees of the practical extension: part 4

During the extension invited researchers participated in the whole procedure of sample processing and sequencing (beginning from isolated DNA or RNA) and were given an introduction (with presentation) to data analysis.

The extensions also made for an excellent opportunity to exchange research ideas and share information on current activities. Some of the participants appear to be good candidates for long-term cooperation, both in clinical research (such as characterizing extreme cancer survivors, unusual cases of disease progression or disease recurrence or very rare tumor types) and in basic studies (such as miRNA impact on transcriptome in particular cancers, mechanisms of resistance to targeted therapies, predicting sensitivity to chemotherapy or nonstandard drug therapies). We certainly look forward to develop a closer collaboration with selected participants and we will work towards this goal.

Agenda of the theoretical part of the workshop "Genome-wide methods in cancer genetics":

Organizers:

Honorary patronage:

Ministerstwo Nauki i Szkolnictwa Wyższego

Ministerstwo Zdrowia

Workshop

Genome-wide methods in cancer genetics

(Wykorzystanie technik analizy genomu w badaniach nowotworów)

28th October 2014,
Centrum Dydaktyczne Warszawskiego Uniwersytetu Medycznego, Aula B
ul. Księcia Trojdena 2a

AGENDA

8:30 - 9:15	Registration
9:15 - 9:30	Opening and foreword **Prof. RAFAŁ PŁOSKI,** Warsaw Medical University
9:30-10:15	***From custom genomic microarrays through target enrichment sequencing assays to identification of mutations predisposing to an inherited disorder: a case of multiple schwannomas*** **dr ARKADIUSZ PIOTROWSKI**, Medical University of Gdańsk, Poland
10:15-10:30	Discussion
10:30-10:45	Coffee break
10:45-11:30	***Tracking tumor-specific changes from plasma*** **dr ELLEN HEITZER,** Medical University in Graz, Austria
11:30-11:45	Discussion
11:45-12:30	***Single cell genomics - technologies and applications*** **ALEKSANDRA KOŁODZIEJCZYK,** EMBL-European Bioinformatics Institute & Welcome Trust Sanger Institute, Cambridge UK
12:30-12:45	Discussion
12:45-13:45	Lunch
13:45-14:15	***Making the switch in Molecular Pathology: from classical sequencing approach to NGS with IonTorrent, an opportunity for diagnostic and research,*** **dr LUCA QUAGLIATA**, Institute of Pathology, University Hospital, Basel, Switzerland
14:15-14:30	Discussion
14:30-14:45	Coffee break
14:45-15:15	***Sensitive and accurate detection of mutations using Pacific Biosciences Circular Consensus Sequencing*** **dr ALEX GARVIN,** Droplet Diagnostics, Mulhouse, France
15:15-15:30	Discussion
15:30	Closing the workshop

Further informations and applications:
bastion@wum.edu.pl, 22 572 04 65

Media patronage:

RYNEK ZDROWIA · Laborant.pl · Gazeta Lekarska · Biotechnologia.pl · MEDLIBE · eOnkologia.pl · lekarzonkolog

Projekt BASTION jest finansowany z Siódmego Programu Ramowego Unii Europejskiej w zakresie badań i rozwoju technologicznego, grant nr 316254.

Attachment No 4

4. Report from the organized workshop:

Molecular diagnostics in cancer

8th of June, 2015

Prof. Zbigniew Gaciong
Prof. R Religa
T2.1.5 Leaders

Ewa Debudaj
PR Specialist

BASTION project Task:T2.1.5

Picture 1: The reception desk of the workshop "Molecular diagnostics in cancer"

The workshop was organized by the Department of Internal Medicine, Hypertension and Vascular Diseases of the Medical University of Warsaw, as a part of the BASTION project.
The goal of the workshop was to introduce participants to the field of modern cancer diagnostics. During the event, five invited experts gave presentations about new techniques of cancer diagnostics, but also about the role of molecular medicine in prognosis and treatment of cancer.

The speakers invited for the event are top-notch experts in the field: Dr. Karin Schütze from CellTool, Germany, Prof. Christer Ericsson and Dr. Andreas Lennartsson from Karolinska Institutet, Sweden, Prof. Jan Lubiński from the Pomeranian Medical University in Szczecin, Poland, and finally Prof. Cezary Szczylik from the Military Institute of Medicine in Warsaw, Poland.

Picture 2: The chairman, Dr. Piotr Religa

The workshop was opened by Dr. Piotr Religa, who presented introduction to the field and

gave short overview of recent methods that are used for cancer screening, diagnostic and planinig of treatment. This part of the workshop was necessary to present progress in the area of modern cancer diagnostic that was presented by the other speakers.

Picture 3: Dr. Karin Schuetze

Dr. Karin Schuetze is focused on engineering Raman systems for biomedical applications and established a demo&service lab for research collaborations and contract research. In 2006, she and her husband Raimund Schütze received the "Berthold LeibingerInnovationspreis" and were nominated for the "DeutscherZukunftspreis" of Germany's Federal President. Karin Schütze has published about 80 articles. She has expertise in non-contact cell handling and enrichment based on innovative photonic technologies with focus on developing complex photonic systems into easy-to handle tools and dedicated application protocols.

Dr. Schuetze gave an exciting lecture on "Application of Raman microscopy to diagnostic of cancer". The Raman microscopy is a technique that is widely used in chemistry and physics. Moreover, it is the technique that can help in automatic diagnostic of histological and cytological samples of cancer.

Picture 4: Prof. Christer Ericsson

Prof. Christer Ericsson is currently a research scientist at the department of Microbiology, Tumor and Cell Biology (MTC), at Karolinska Institute (Stockholm, Sweden) and the chief scientific officer (CSO) of the medical technology company iCellate.

He presented the lecture "Progress in CTC research and application" . His presentation was focused on clinical application of circulating tumor cells in cancer diagnostic, but also related to different methods for isolation and identification of CTC.

Picture 5: Dr Andreas Lennartsson

Dr. Andreas Lennartsson did his PhD at Lund University in Sweden 2004, where he studied transcriptional regulation of myeloid differentiation. He has shown how DNA methylation changes during normal myelopoiesis (Rönnerblad M et al. Blood 2014) and how different mutations influence the epigenetic landscape in acute myeloid leukemia (Deneberg et al Blood 2011, Qu Y. et al. Epigenetics 2014). He is also a member of the international

FANTOM consortium that recently published the landmark articles about transcriptomics in "all" human cell types (Forrest A. et al Nature 2014 and Andersson R et al. Nature 2014).

Dr. Andreas Lennartsson in his lecture "Epigenetic regulation of myelopoiesis" presented general overview of epigenetics. Later, he talked about his own research in FANTOM consortium.

Picture 6: Prof. Jan Lubiński

Prof. Jan Lubiński, who heads the Department of Genetics and Pathology at the Pomeranian Medical University in Szczecin, is a world-class research leader in the field of hereditary cancers. He published approx. 450 papers in prestigious research journals including: The Journal of the American Medical Association (JAMA), Journal of the National Cancer Institute (JNCI), Nature Genetics, Lancet Oncology, Cancer Research, Journal of Clinical Oncology, The New England Journal of Medicine (NEJM) and many others. Prof. Lubiński is also a founder and editor-in-chief of the journal Hereditary Cancer in Clinical Practice. He was granted 15 patents in Poland and 10 internationally.

Prof. Lubinski presented lecture "Genetic diagnostics in cancer", which was focused on the development of registry of cancer family syndromes and the first world-wide demonstration of genetic contribution to all cancers using the model of breast cancers from homogenous Polish population.

Picture 7: Prof. Cezary Szczylik

Prof. Cezary Szczylik currently holds the position of professor in clinical oncology at the Military Institute of Medicine in Warsaw where he also heads the Department of Oncology and of Laboratory of Molecular Oncology. In 1984, together with prof. W. Jędrzejczak, he successfully transplanted allogenic bone marrow for the first time in Poland, and in 1985 he followed with autologous transplant. His research results were published, among others, in Science, Lancet Oncology, The New England Journal of Medicine (NEJM), Cancer, Journal of Clinical Oncology, Journal of the National Cancer Institute (JNCI).

Prof. Cezary Szczylik: in his lecture "Personalized health care in cancer treatment" presented results of his own research related to:

1) characterization of the clear cell renal carcinoma stem cells, 2) gene expression profiling of renal cancer stem cells in microenvironmental model of carcinogenesis, 3) oxygen concentration as regulator of proliferation and survival of renal cancer stem cells and 4) participation of the complex of interleukin-6 and soluble forms of the receptor (complex IL-6/IL-6sR) in renal cancer cells communicate with cells of the target tissue metastasis.

The conference hosted approx. 100 registered participants, including medical doctors, basic scientists, PhD students and medical students. All of them had the possibility to actively participate in Q&A sessions and continue the discussions during coffee and lunch breaks.

The speakers did not agree to share the presentations due the confidentiality of the presented studies in progress.

Picture 8: The audience

Picture 9: The audience

Agenda of the workshop “Molecular Diagnostic in Cancer”:

The main event was followed by a practical extension of the workshop, which was organized in a form of five separate meetings:

1. Exome analysis (Genome-wide) using the next generation sequencing platform IonProton (LifeTechnologies) – a practical workshop.

A five-day practical workshop concerning exome analysis was carried out as a part of the BASTION project from 30th of July to 4th of August and on 13th of August 2015. The workshops took place at the Department of Internal Medicine, Hypertension and Vascular Diseases, Medical University of Warsaw.

The aim of the training was to present the principles of IonTorrent sequencing technology, the methodology and practical approaches to analyze a whole human exome using IonProton – the next generation sequencing platform. The participants analyzed their own samples. Those samples were used in all stages of the training such as the library construction, which is based on genomic DNA hybridization with probes capturing exons – protein coding regions. Workshop included also preparation of enriched, template-positive Ion Sphere Particles, loading the sequencing chip and finally performing sequencing.

Also the interactive classes were conducted, which provided basic information on genome analysis and carried out analysis of data obtained during sequencing.

The workshop was organized by the team of the Laboratory of the Department of Internal Medicine, Hypertension and Vascular Diseases. The workshop was attended by 3 employees of the Medical University of Warsaw and one of the Institute of Hematology and Blood Transfusion.

Picture 10: Exome analysis workshop

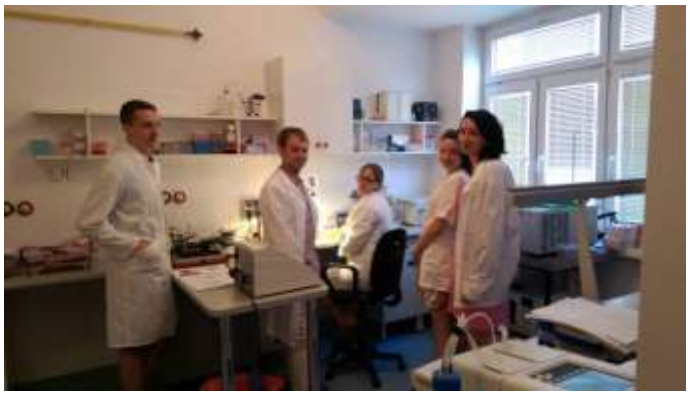
2. Transcriptome analysis (RNA-seq)– a practical workshop.

A four-day practical workshop concerning transcriptome analysis (RNA-seq) was carried out as a part of the BASTION project from 5th to 7th of August and on August 13th. The workshops took place at the Department of Internal Medicine, Hypertension and Vascular Diseases, Medical University of Warsaw.

The aim of the training was to present the principles of IonTorrent sequencing technology, the methodology and practical approaches to analyze a whole transcriptome (RNA-seq) using IonProton – the next generation sequencing platform. The workshop was focused on study of gene expression and mRNA isoforms.

The participants carried out the library construction using mRNA. Workshop included also preparation of enriched, template-positive Ion Sphere Particles for sequencing, loading the sequencing chip and finally performing sequencing.
Data obtained in the course of training were analyzed during interactive classes, which provided basic information on data processing and methods of transcriptome analysis.

The workshop was organized by the team of the Laboratory of the Department of Internal Medicine, Hypertension and Vascular Diseases. The workshop was attended by one scientist of the Medical University of Warsaw and 4 employees of the Institute of Hematology and Blood Transfusion.



Picture 11: Transcriptome analysis workshop

3. Large gene panel analysis using the next generation sequencing platform IonProton – a practical workshop.

A three-day practical workshop concerning sequencing of gene panels was carried out as a part of the BASTION project from 10th to 13th of August. The workshops took place at the Department of Internal Medicine, Hypertension and Vascular Diseases, Medical University of Warsaw.

The aim of the training was to present the principles of IonTorrent sequencing technology, the methodology and practical approaches to analyze a genomic regions of interest using IonProton – the next generation sequencing platform.

The participants carried out the library construction using long amplicons, amplified in a reaction with self-designed primers. Workshop included also preparation of enriched, template-positive Ion Sphere Particles, loading the sequencing chip and finally performing sequencing.
Data obtained in the course of training were analyzed during interactive classes, which provided basic information on data processing and genes panel analysis.
The workshop was organized by the team of the Laboratory of the Department of Internal Medicine, Hypertension and Vascular Diseases. The workshop was attended by one researcher of Medical University of Warsaw and two employees of the Warsaw University of Life Sciences.

Picture 12: Large gene panel analysis

4. High throughput automated DNA isolation and purification using Janus biorobots and Chemagen MSM1 platform – a practical workshop.

During a one day (August 18th, 2015) practical workshop participants had opportunity to get familiar with automated high throughput DNA isolation and purification technology based on magnetic beads. Combined use of Janus biorobot with chemagic Magnetic Separation Module I enables simultaneous isolation of DNA from up to 96 blood samples.

The workshops were organized by the team of the Laboratory of the Department of Internal Medicine, Hypertension and Vascular Diseases. The workshop was attended by 2 employees of Medical University of Warsaw, 2 of the Institute of Hematology and Blood Transfusion and one form the Institute of Cardiology.

5. SNP genotyping using FlexMap3D (Luminex) bead based multiplex methodology and Janus (PerkinElmer) biorobots – a practical workshop.

A three-day practical workshop concerning multiplex SNP genotyping method was carried out as a part of the BASTION project from 18th to 20th of August. The workshops took place at the Department of Internal Medicine, Hypertension and Vascular Diseases, Medical University of Warsaw.

The aim of the training was to present the principles of bead based multiplex genotyping methodology. The training was focused on Direct Hybridization method of genotyping.

The participants took part in preparation of PCR reaction as well as assembly of hybridization reaction both automated by the use of Janus biorobots (PerkinElmer).

Workshop included also creating genotyping protocol and performing 3-plex SNP analysis on FlexMap3D platform. It was shown how to apply cluster analysis to evaluate genotyping results.

The workshop was organized by the team of the Laboratory of the Department of Internal Medicine, Hypertension and Vascular Diseases. The workshop was attended by 2 employees of Medical University of Warsaw, 2 of the Institute of Hematology and Blood Transfusion and one form the Institute of Cardiology.

Picture 13: DNA isolation and SNP genotyping workshops

Links to the lists of participants

Reports from all organized workshops, as well as the lists of participants of each workshop, are available on the BASTION project website. Because of the large file size of the lists (scans in PDF format), we did not attached them to the Report on Organized Workshops and instead, we present below the link to the lists on the BASTION website:

http://bastion.wum.edu.pl/en/raporty/

Due to the large size of the files with speakers' presentations, we do not include them in the Report. All the presentations, which speakers agreed to share, are available on request.

Emails with acknowledgments received after organization of workshop "Molecular Diagnostics in Cancer"

	Re: workshop in Poland - DETAILS
Od:	"karin.schuetze@celltool.de" <k.schuetze@celltool.de>
Data:	8 Czerwca 2015, 7:41 pm, Pn
Do:	"Ewa Debudaj" <edebudaj@wum.edu.pl>
Kopia:	"Dr. Piotr Religa" <Piotr.Religa@ki.se>
Priorytet:	Normalny
Opcje:	Pokaż cały nagłówek | Podgląd wesji do wydruku | Pobierz jako plik | Podgląd szczegółów wiadomości | Dodaj do książki adresowej

Dear Ewa

I enjoyed very much the workshop and especially your kind and perfect organization.

I felt like a Princess when be taken from the Airport and driven around by a Chauffeur in those nice Mercedes limousines. Also the Hotel was quite impressive as well as all the food etc.

I really regret that I could not join the dinner tonight - may be next time :-)

We did some inspiring networking - lets see what will arise of this in near future

See you somewhen again somewhere

best regards

Karin

.....

Dr. Karin Schütze
CellTool GmbH - Am Neuland 1 - 82347 Bernried

Meet us next:

WITE 2015 (June 10-12) Würzburg Initiative on Tissue Engineering - www.wite.org

Phone: +49 8158 90640 20
Mobile: +49 172 754 7728
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Geschäftsführung:
Dr. Karin Schütze CEO; Raimund Schütze CTO
Firmensitz Tutzing; HRB 174 589
www.celltool.de
431 914

Temat:	Re: workshop in Poland - DETAILS
Od:	"Christer Ericsson" <Christer.Ericsson@ki.se>
Data:	9 Czerwca 2015, 9:22 pm, Wt
Do:	"Piotr Religa" <Piotr.Religa@ki.se> (więcej)
Kopia:	"Anna Fogler" <anna.fogler@wum.edu.pl>
Priorytet:	Normalny
Opcje:	Pokaż cały nagłówek | Podgląd wesji do wydruku | Pobierz jako plik | Podgląd szczegółów wiadomości | Dodaj do książki adresowej

Guys,
Thanks for a very well organised, interesting and pleasurable workshop with intriguing collaboration opportunities.
Best regards,
Christer

Christer Ericsson, PhD
http://ki.se/en/mtc/christer-ericsson-project
Department of Microbiology, Tumor and Cell Biology (MTC)
Nobels väg 16
KI Solna Campus Karolinska Institutet
Box 280
SE-171 77 Stockholm
Sweden

Temat:	Re: workshop in Warsaw
Od:	"Andreas Lennartsson" <andreas.lennartsson@ki.se>
Data:	11 Czerwca 2015, 11:46 am, Cz
Do:	"Ewa Debudaj" <edebudaj@wum.edu.pl>
Kopia:	"Anna Fogler" <anna.fogler@wum.edu.pl> (więcej)
Priorytet:	Normalny
Opcje:	Pokaż cały nagłówek | Podgląd wesji do wydruku | Pobierz jako plik | Podgląd szczegółów wiadomości | Dodaj do książki adresowej

Thank you Ewa,
It was my pleasure. Very well organized and I really enjoyed my visit.

Best regards
-andreas

Skickat från min iPhone