



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

Project No. 316254

BASTION

“From Basic to Translational Research in Oncology”

Deliverable D1.3

Report on publications resulting from secondments

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Introduction

Deliverable D1.3 corresponds to the task T1 (T1.1-T.1.11) in WP1, that was delivered in time.

Secondments executed during BASTION project resulted in publication of 12 experimental and 2 review papers in peer-reviewed international scientific journals. Moreover, 4 manuscripts are in preparation and 1 is submitted.

For all twinning and networking tasks within WP1 the following papers were published in months 1 – 42 of the Project (color coding – **in red** – MUW BASTION members, **in green** – twinning partners and/or members of twinning partner's team participating in secondments):

1. Task 1.1.

MUW: Task leader - Prof. Jakub Golab

Foreign Partners: KUL Belgium (Prof. Patrizia Agostinis), additional partner: University College Dublin, Ireland (Prof. William Gallagher)

Subject: Induction of systemic antitumor immunity by the combination of photodynamic therapy (PDT) and endoplasmic reticulum stress-inducing compounds

No	Publication details	Impact Factor	Pdf No
1	Garg AD, Martin S, Golab J , Agostinis P . Danger signalling during cancer cell death: origins, plasticity and regulation. Cell Death Differ. 2014 Jan;21(1):26-38.	8,184	1-2
2	Dudek-Perić AM , Ferreira GB, Muchowicz A, Wouters J, Prada N, Martin S, Kiviluoto S, Winiarska M , Boon L, Mathieu C, van den Oord J, Stas M, Gougeon ML, Golab J , Garg AD, Agostinis P . Antitumor immunity triggered by melphalan is potentiated by melanoma cell surface-associated calreticulin. Cancer Res. 2015 Apr 15;75(8):1603-14	9,329	1-3
3	Dudek-Peric A , Garg A, Golab J , Agostinis P . Melanoma targeting with the loco-regional chemotherapeutic, Melphalan: from cell death to immunotherapeutic efficacy. Oncoimmunology 2015 (in press)	6,266	x
4	Winiarska M , Bojarczuk K, Pyrzynska B, Bil J, Siernicka M, Dwojak M, Bobrowicz M, Miazek N, Zapala P, Zagozdzon A, Krol M, Syta A, Podszywalow-Bartnicka P, Pilch Z, Dabrowska-Iwanicka A, Juszczynski P, Efremov DG, Slabicki M, Zenz T, Le Roy A, Olive D , Rygiel TP, Leusen JH, Golab J . Inhibitors of SRC kinases impair antitumor activity of anti-CD20 monoclonal antibodies. MAbs. 2014;6(5):1300-13. Epub 2014 Oct 30.	4,558	2-1
5	Garg AD , Golab J , Agostinis P . Immunogenic cell death and damage-associated molecular patterns in cancer: classifications and tabulations. Frontiers Immunol (manuscript submitted)	---	X
6	Bojarczuk K, Siernicka M, Dwojak M, Bobrowicz M, Pyrzynska	10,431	2-2



	B, Gaj P , Karp M, Giannopoulos K, Efremov DG, Fauriat C , Golab J , Winiarska M . B-cell receptor pathway inhibitors affect CD20 levels and impair antitumor activity of anti-CD20 monoclonal antibodies. <i>Leukemia</i> 05/2014; 28(5):1163-1167.		
7	Siernicka M, Winiarska M , Bajor M , Firczuk M, Muchowicz A, Bobrowicz M, Fauriat C , Golab J , Olive D , Zagozdzon R . Adenanthin, a new inhibitor of thiol-dependent antioxidant enzymes, impairs the effector functions of human natural killer cells. <i>Immunology</i> , 8 Jul 2015, DOI: 10.1111/imm.12494	3,795	2-3

2. Task 1.2.

MUW: Task leader – Dr. Magdalena Winiarska

Foreign Partner: Universite de la Mediterranee, Marseille, France (Prof. Daniel Olive)

Subject: Application of anti-CD20 monoclonal antibody-mediated immunotherapy in cancer treatment.

No	Publication details	Impact Factor	Pdf No
1	Winiarska M , Bojarczuk K, Pyrzynska B, Bil J, Siernicka M, Dwojak M, Bobrowicz M, Miazek N, Zapala P, Zagozdzon A, Krol M, Syta A, Podszywalow-Bartnicka P, Pilch Z, Dabrowska-Iwanicka A, Juszczynski P, Efremov DG, Slabicki M, Zenz T, Le Roy A, Olive D , Rygiel TP, Leusen JH, Golab J . Inhibitors of SRC kinases impair antitumor activity of anti-CD20 monoclonal antibodies. <i>MAbs</i> . 2014;6(5):1300-13. Epub 2014 Oct 30.	4,558	2-1
2	Bojarczuk K, Siernicka M, Dwojak M, Bobrowicz M, Pyrzynska B , Gaj P , Karp M, Giannopoulos K, Efremov DG, Fauriat C , Golab J , Winiarska M . B-cell receptor pathway inhibitors affect CD20 levels and impair antitumor activity of anti-CD20 monoclonal antibodies. <i>Leukemia</i> 05/2014; 28(5):1163-1167.	10,431	2-2
3	Siernicka M, Winiarska M , Bajor M , Firczuk M, Muchowicz A, Bobrowicz M, Fauriat C , Golab J , Olive D , Zagozdzon R . Adenanthin, a new inhibitor of thiol-dependent antioxidant enzymes, impairs the effector functions of human natural killer cells. <i>Immunology</i> , 8 Jul 2015, DOI: 10.1111/imm.12494	3,795	2-3
4	Dudek-Perić AM, Ferreira GB, Muchowicz A, Wouters J, Prada N, Martin S, Kiviluoto S, Winiarska M , Boon L, Mathieu C, van den Oord J, Stas M, Gougeon ML, Golab J , Garg AD, Agostinis P . Antitumor immunity triggered by melphalan is potentiated by melanoma cell surface-associated calreticulin. <i>Cancer Res</i> . 2015 Apr 15;75(8):1603-14	9,329	1-3

3. Task 1.3.



MUW: Task leader – Dr Tomasz Stokłosa

Foreign Partner: University Hospital of Ulm, Germany (Prof. Lars Bullinger)

Subject: Investigation of the potential targets and markers of sensitivity to tyrosine kinase inhibitors in chronic lymphocytic leukaemia.

No	Publication details	Impact Factor	Pdf No
1	Giannopoulos K, Machnicki MM , Karczmarczyk A, Bojarska-Junak A, Karp M, Głodkowska-Mrowka E , Kowal M, Pawelec A, Hus M, Bullinger L , Stokłosa T : In vivo, ex vivo and in vitro dasatinib activity in chronic lymphocytic leukemia.	manuscript in preparation	x

First manuscript regarding potential activity of dasatinib (tyrosine kinase inhibitor, TKI) in chronic lymphocytic leukemia is in preparation. Second publication requires additional time. Major aim of our project (started in cooperation with team of prof. Lars Bullinger from Ulm University) was to discover gene signature and described genes involved in response to promising novel targeted therapies with TKIs in chronic lymphocytic leukemia (CLL), in order to define a group of patients who may benefit from such treatments. We have applied high-throughput methodology to analyze gene expression profile, namely RNA sequencing on next-generation sequencing platform. First visits in Bullinger's laboratory in 2013 enabled us to analyze a pilot cohort of CLL patient samples in regard to their response to TKIs. However, to obtain more data and deep insight, we had to collect more samples and in this year additional visit to Ulm to conduct necessary experiments was executed in May/June by Marcin Machnicki, member of dr T. Stokłosa team. Additional short-term visit to Ulm by Dr Stokłosa in August 2015 should speed up process of data analysis with dedicated software for NGS obtained by Bullinger's team and preparation and publication of the second manuscript.

4. Task 1.4.

MUW: Task leader – Prof. Zbigniew Gaciong

Foreign Partner: Karolinska Institutet, Stockholm, Sweden (Prof. Cecilia Soderberg-Naucler)

Subject: Vascular mechanism of tumor dissemination.

No	Publication details	Impact Factor	Pdf No
1	Yaiw KC, Mohammad AA, Taher C, Wilhelmi V, Davoudi B, Strååt K, Assinger A, Ovchinnikova O, Shlyakhto E, Rahbar A, Kovtonyuk O , Religa P , Butler L, Khan Z, Streblov D, Pernow J, Söderberg-Nauclér C . Human cytomegalovirus induces upregulation of arginase II: possible implications for vasculopathies. Basic Res Cardiol. 2014 Mar;109(2):401.	5,955	4-6



5. Task 1.5.

MUW: Task leader - Dr Pawel Wlodarski

Foreign Partner: Radboud University Medical Center Nijmegen, the Netherlands (Prof. Jack Schalken), additional partner: Saarland University, Germany (Prof. Friedrich A. Grässer)

Subject: Inhibitors of metalloproteases in prostate cancer.

There are no publication resulting from the twinning available yet. Both teams continue collaboration and the results of this project should be published in 2016.

6. Task 1.6.

MUW: Task leader – Dr Krystian Jazdzewski

Foreign Partners: University of Ferrara, Italy (Dr. Stefano Volinia), additional partner: Leeds Institute for Molecular Medicine, University of Leeds, UK (Dr. Sean Lawler)

Subject: The role of microRNAs sequence variations in response to cancer treatment.

No	Publication details	Impact Factor	Pdf No
1	Gaj P, Nowis D, Volinia S. Immunophenotypic identities of clinical samples predict overall survival in cytogenetically normal AML patients.	manuscript in preparation	x

7. Task 1.7.

MUW: Task leader Dr Piotr Religa

Foreign Partner: Karolinska Institutet, Stockholm, Sweden (Prof. Monica Nister)

Subject: Studies of circulating tumour cells in diagnostics of colon cancer.

No	Publication details	Impact Factor	Pdf No
1	Grudzinska MK, Kurzejamska E, Bojakowski K, Soin J, Lehmann MH, Reinecke H, Murry CE, Soderberg-Naucler C, Religa P. Monocyte chemoattractant protein 1-mediated migration of mesenchymal stem cells is a source of intimal hyperplasia. <i>Arterioscler Thromb Vasc Biol.</i> 2013 Jun;33(6):1271-9	5,533	4-1
2	Taher C, de Boniface J, Mohammad AA, Religa P, Hartman J, Yaiw KC, Frisell J, Rahbar A, Söderberg-Naucler C. High prevalence of human cytomegalovirus proteins and nucleic acids in primary breast cancer and metastatic sentinel lymph nodes. <i>PLoS</i>	3,534	4-2



	One. 2013;8(2):e56795.		
3	Taher C, Frisk G, Fuentes S, Religa P , Costa H, Assinger A, Vetvik KK, Bukholm IR, Yaiw KC, Smedby KE, Bäcklund M, Söderberg-Naucler C , Rahbar A. High prevalence of human cytomegalovirus in brain metastases of patients with primary breast and colorectal cancers. <i>Transl Oncol</i> . 2014 Dec;7(6):732-40.	2,558	4-3
4	Butler LM, Dzabic M, Bakker F, Davoudi B, Jeffery H, Religa P , Bojakowski K, Yaiw KC, Rahbar A, Söderberg-Naucler C . Human Cytomegalovirus Inhibits Erythropoietin Production. <i>J Am Soc Nephrol</i> . 2014 Apr 10.	9,466	4-4
5	Assinger A, Kral JB, Yaiw KC, Schrottmaier WC, Kurzejamska E, Wang Y, Mohammad AA, Religa P , Rahbar A, Schabbauer G, Butler LM, Söderberg-Naucler C . Human cytomegalovirus-platelet interaction triggers toll-like receptor 2-dependent proinflammatory and proangiogenic responses. <i>Arterioscler Thromb Vasc Biol</i> . 2014 Apr;34(4):801-9	5,533	4-5
6	Yaiw KC, Mohammad AA, Taher C, Wilhelmi V, Davoudi B, Strååt K, Assinger A, Ovchinnikova O, Shlyakhto E, Rahbar A, Kovtonyuk O , Religa P , Butler L, Khan Z, Streblov D, Pernow J, Söderberg-Naucler C . Human cytomegalovirus induces upregulation of arginase II: possible implications for vasculopathies. <i>Basic Res Cardiol</i> . 2014 Mar;109(2):401.	5,955	4-6

8. Task 1.8.

MUW: Task leader – Prof. Sławomir Majewski / Prof. Rafal Ploski

Foreign Partner: University of Cologne, Germany (Prof. Herbert Pfister)

Subject: Molecular and genomic studies of HPV-associated carcinogenesis.

No	Publication details	Impact Factor	Pdf No
1	Sperling T, Oldak M, Walch-Rückheim B, Wickenhauser C, Doorbar J, Pfister H , Malejczyk M, Majewski S , Keates AC, Smola S. Human papillomavirus type 8 interferes with a novel C/EBP β -mediated mechanism of keratinocyte CCL20 chemokine expression and Langerhans cell migration. <i>PLoS Pathogens</i> 2012;8(7):23, e1002833	8,136	8-1
2	Sakowska-Wanat J*, Trzeciak L* , Silling S, Pollak A, Rydzanicz M, Stawinski P, Sobczyk-Kopciol A, Pfister H , Ploski R , Majewski S : A novel splice site mutation c.449-1G>T of TMC8 gene in a female with epidermodysplasia verruciformis with pronounced genital carcinogenesis: molecular study and literature review. * equal contribution	manuscript in preparation	x



9. Task 1.9.

MUW: Task leader – Dr Dominika Nowis

Foreign Partner: University of Verona, Italy (Dr Gaetano Vattemi)

Subject: Targeting of proteostatic mechanisms with specific inhibitors of proteasome and protein folding in cancer and normal cells for patient-oriented, personalized and more effective cancer treatment.

No	Publication details	Impact Factor	Pdf No
1	O’Leary PC, Terrile M, Bajor M, Gaj P, Hennessy BT , Mills GB, Zagozdzon A, O’Connor DP, Brennan DJ, Connor K, Li J, Gonzalez-Angulo AM, Sun HD, Pu JX, Pontén F, Uhlén M, Jirström K, Nowis D , Crown JP, Zagozdzon R, Gallagher WM . Peroxiredoxin-1 protects estrogen receptor α from oxidative stress-induced suppression and is a protein biomarker of favorable prognosis in breast cancer. <i>Breast Cancer Res.</i> 2014;16(4):R79.	5,490	1-1
2	Gaj P, Nowis D, Volinia S . Immunophenotypic identities of clinical samples predict overall survival in cytogenetically normal AML patients.	manuscript in preparation	x
3	Guglielmi V , Tinelli M, Nowis D , Marini M, Manganotti P, Tomelleri G, , Paoli L, Meneghini V, Malatesta M, Sadowski R, Wilczynski GM, Vattemi G . Bortezomib-induced muscle toxicity in multiple myeloma.	manuscript in preparation	x

10. Task 1.10.

MUW: Task leader – Dr Radoslaw Zagozdzon – new group leader

Foreign Partner: Royal College of Surgeons Dublin, Ireland (Dr Bryan Hennessy)

Subject: Evaluation of peroxiredoxins 1 and 2 along with the thioredoxin-thioredoxin reductase system as potential biomarkers in B cell lymphomas.

No	Publication details	Impact Factor	Pdf No
1	O’Leary PC, Terrile M, Bajor M, Gaj P, Hennessy BT , Mills GB, Zagozdzon A, O’Connor DP, Brennan DJ, Connor K, Li J, Gonzalez-Angulo AM, Sun HD, Pu JX, Pontén F, Uhlén M, Jirström K, Nowis D , Crown JP, Zagozdzon R, Gallagher WM . Peroxiredoxin-1 protects estrogen receptor α from oxidative stress-induced suppression and is a protein biomarker of favorable prognosis in breast cancer. <i>Breast Cancer Res.</i> 2014;16(4):R79.	5,490	1-1



11. Task 1.11.

MUW: Task leader – Dr. Tomasz Stoklosa

Foreign Partner: London Genetics and Science|Business Publishing

Subject: Transfer of know-how and stimulation of innovation-driven research to bring research results from bench to the bedside.

This task was not designed to result in scientific publications.

12. Analysis of added value

Execution of Work Package 1 during second reporting period (18-42 months) of BASTION project was a great opportunity for researchers from MUW to gain know-how from partnering Institutions and was a unique chance to bring together experts from various disciplines willing to share their expertise and resources. In many situations execution of twinning visits allowed to finish several projects and publish the results in respected journals even before the end of the BASTION project as exemplified by publications listed above in Tasks 1.1 1.2, 1.4 , 1.7, 1.8, 1.9 and 1.10 (total of 14 publications, including 12 original articles). Moreover several manuscripts are either submitted or in preparation. In other situations, twinning visits enabled researchers from MUW and partnering institutions to widen the scope of their scientific projects, beyond what is available within their own institution and to combine the available technologies which should also result in several publications in the near future. Some obstacles prevented full execution of planned twinings. In most cases such obstacles were unpredictable and related to either personal issues (such as maternity leave, job change) or institutional issues, such as extremely busy schedule of some investigators (especially related to incoming visits of researchers from partnering laboratories). As suggested by external evaluators, during first evaluation round in January 2015, some incoming visits were rescheduled for shorter time or changed for short outgoing missions. Such changes allowed us to intensify twinning in the last 6 months of the project duration and successfully implement remaining visits. In summary, WP1 execution allowed increased scientific dialogue between partnering academic institutions and MUW and gave excellent training opportunity for the recruited staff, both at MUW and at the partnering organizations, which already resulted in several publications in respected scientific journals.

Conclusions

Work Package 1 comprises of exchange of know-how and best practice through twinning. The major goal of those bilateral visits was to bring together a highly skilled and complementary assembly of European researchers from academic and clinical centers and



researchers from MUW participating in BASTION. Similarly to other large-scale projects there were several, initially unresolved and unforeseen issues (in most cases of administrative type, in some cases personal issues such as maternity) regarding twinning via secondments, which were being gradually cleared. This however, caused some delays and rescheduling of selected twinning visits for 2015. Nevertheless, thanks to intensification of twinings in 2015, almost all the visits planned for 19-40 months of the project have been successfully completed. Those secondments, which were successfully accomplished were extremely valuable. Not only each researcher was given practical training in new technologies provided either locally or via visits to partnering laboratories, but also in many situations, there were unexpected benefits of such efforts such as new collaborations and new research projects undertaken as a result of this collaborations. More than a dozen of publications already published in top scientific journals and several manuscripts in the process of publication are direct proof of the benefits of WP1 execution. To conclude, the research work of the majority of groups complemented one another. This synergy should be even more enhanced by further exchange of know-how between BASTION and partnering institutions and will definitely result in further scientific achievements. It must be emphasized that BASTION project covered only the costs of visits. The research activities were covered by own funds of each of the partnering institutions.

Dr. Dominika Nowis
WP1 Leader
Dr. Tomasz Stokłosa
WP1 Co-leader

Prof. Jakub Golab
BASTION Project Coordinator
Warsaw, August 2015