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BASTION – FROM BASIC TO TRANSLATIONAL RESEARCH IN ONCOLOGY

Report on the stay of Dr Rut Klinger at the Department of Immunology, Medical University of Warsaw, Warsaw, Poland within the 7PR21/BASTION/WP1 (Twinning)

Between the 19th of July 2015 and 11thAugust 2015 Dr Rut Klinger was visiting the laboratory of Prof. Jakub Golab (under direct supervision of DrRadoslawZagozdzon) at Department of Immunology, Medical University of Warsaw. The stay at Medical University of Warsaw was carried out within the confines of BASTION twinning programme.The overall scientific goal of Dr Klinger's stay was to generate a cysteine-tagged PRDX1 overexpression systems utilizing mammalian viral vectors.

Dr Zagozdzon has been working for several recent years on oxidative stress-related mechanisms in cancer. He has focused specifically onperoxiredoxin (PRDX) protein family and has recently published his work onPRDX1 in breast cancer in collaboration with Dr. Klinger's home research group (O'Leary *et al*., 2014). PRDX1 is a multifunctional protein, acting as a H_2O_2 scavenger, molecular chaperone and immune modulator. Its differential expression has been described in many tumours and in this published work the role of PRDX1 in breast cancer has been described as an independent predictor of improved outcomes in ER-positive breast cancer.

During her stay in laboratory at Warsaw Medical University, Dr Klinger was working on generation of PRDX1 expressing constructs with cysteine-tags added on both gene ends using molecular cloning approaches. Thesewould subsequently be used for Dr Zagozdzon's research in the area described above. Created vectors would be applied to establish stable lentiviral-based genetically modified cell models and could be used to efficiently purify PRDX1 proteins for subsequent analyses. Dr Klingerhas been cloningcys-taggedPRDX1 gene insert into HIV-based SFFVlentiviral systems used previously in DrZagozdzon's lab. It allowed her to exchange information between the lab regarding the molecular cloning protocols. At the same time generation of these lentiviral constructs would allow genetic modification of multiple cell models that could progress the course of research of both teams.

Dr Klinger has also added her expertise and participated in work regarding other stable genetically modified cancer cell models (such as breast cancer MCF7-based models) related to DrZagozdzon's research in the area.

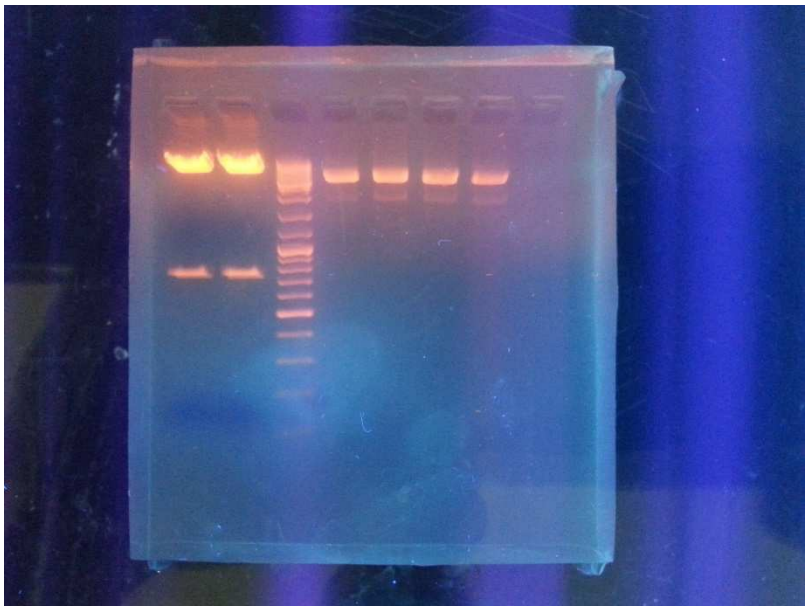

Fig.1 Example of images documenting one of the stages of molecular cloning aiming at generation of genetically modified constructs

Fig. 2 Dr Rut Klinger at work in the laboratory at Department of Immunology