VACTRAIN
TWINNING ON DNA-BASED CANCER VACCINES
This project has received funding from the European Union's Horizon 2020 Research and innovation programme under grant agreement No 692293

TWINNING ON DNA-BASED CANCER VACCINES

Karolinska Institutet

Individual Research Trainings

"TUMOR CHALLENGE" 1st round, June 26 - July 27, 2017

MTC/Karolinska Institutet, Stockholm, Sweden

TRAINEES Researchers from Riga Stradins University, Latvia, Riga (RSU) Dzeina Mezale , MD, PhD student, VACTRAIN trainee; and Dr Juris Jansons.
From INNVOIMMUNE project: Ekaterina Pankova, Philip Podshwadt (Master students)

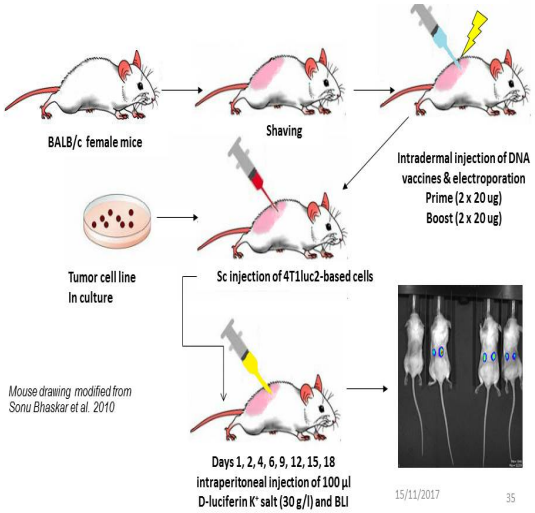
Weekly seminars on which trainees presented and discussed their results.

COACHES Prof Britta Wahren, MSc Stefan Petkov, Dr Ilya Gordeychuk, Dr Mohammad Mushtaq.
Assisting: Mina Saleem, Urszula Rykaszewska

ELEMENTS TO TRAIN

1.DNA immunization and follow up of expression of introduced gene by *in vivo* imaging (1 week);
2.Implantation of tumor cells and follow up of tumor growth by morphometric measurements and in vivo imaging (2-3 weeks);
3.Euthanasia of mice, organ collection, fixation of tissues, preparation of paraffin blocks, sectioning, histochemical and immune histochemical staining (2-3 weeks;)
4.From spleens, isolation of splenocytes, characteristics of cell viability, staining of cell surface receptors, intracellular staining for cytokine production; same procedures ofter thawing of frozen splenocyte; operation of flow cytometer, collection and digestion of data (2 weeks).
5.From spleens and purified splenocytes, characteristics of specific recognition of antigens by ELISpot and mono- and di-cytokine production by Fluorospot (1 week).

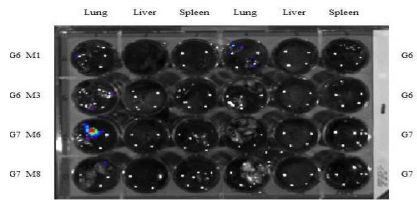
AIM Induction of resistance to tumors by DNA-immunization against tumor-expressed foreign antigens



Tumor challenge experiment in laboratory mice.
Such experiments are needed to define the protective and curative potential of DNA vaccines against virus-induced cancer.

OVERALL RESULTS

Trainees leant the methods for experimental challenge of small animals with tumor cells, methods of optical, physical assessment of tumor growth, assessment of tumor growth by in vivo imaging, tried different approaches to quantify metastases, and practiced methods of histological assessment of tumor tissues (Elements 1-3).



The team developed a rapid *ex vivo* assay of metastatic cells after spontaneous challenge of mice with Luc-expressing tumor cells . Method was used to characterize metastatic activity of cells used in the training.