

Summer School I

Part 1 - Vienna

Bioinformatics Course

EC Innovative Training Network MATURE-NK - ETN-765104

September 16-20, 2019

Venue:

[Center for Integrative Bioinformatics](#)

Max Perutz Labs

Campus Vienna BioCenter 5, Ebene 6, Room 6.105

Dr. Bohr-Gasse 9

A-1030 Vienna, Austria

Websites: <http://www.cibiv.at/>

<https://www.maxperutzlabs.ac.at/research/research-groups/von-haeseler>

Participants:

Sachin Chauhan, Camille Philippon, Romja Wieboldt, Natalia Colomar, Anna Thaller, Irene Lazaro, Anna Rea, Rebecca Kotzur, Martin Fahrenberger (co-instructor), Beatriz Fernandez, Jonathan Druge, Simone Mantesso, Sonya Ciulean

Sunday, September 15

Arrival of all students of the consortium at hotel; double rooms have been reserved from September 15 to 21 (according attached list).

Hotel:

Hotel Gabriel

Landstrasse Hauptstrasse 165

A-1030 Vienna

Austria

Tel. +43-1-7123205

E-mail: office@hotel-gabriel.at

Website: <https://www.adler-hotels-wien.at/hotel-gabriel/>

Contact:

In case of any problems, please contact Martin Fahrenberger, PhD student,

Mobile: +49-170-169 50 82; E-mail: martin.fahrenberger@univie.ac.at

or

Iris Gruber, Phone: +43-1-4277-74320; E-mail: iris.gruber@univie.ac.at

(further contacts in case of emergency:

Dr. Heiko Schmidt, Co-Organizer and leader of bioinformatics course; Mobile: +43-664-60277-74320; E-mail: heiko.schmidt@univie.ac.at

Prof. Arndt von Haeseler, Scientific Director, Max F. Perutz Laboratories,

Phone: +43-1-4277-74307; Email: arndt.von.haeseler@univie.ac.at)

Please note: General person to contact is Martin Fahrenberger as your colleague in the PhD program of the MATURE-NK project, he will be helpful to you in case you cannot find hotel, venue or encounter any other problem. Martin will meet you at the hotel on Monday morning at 8:30 and walk with you to the site where the course will take place. He will also organize some social events such as trips to Vienna at evening or Saturday morning. Please contact him to arrange what you would like to do in Vienna besides the course.

COURSE MODULE 2

Genome-wide bioinformatics, data base mining, polymorphisms

Instructors: Dr. Heiko Schmidt, Dr. Sebastian Burgstaller-Muehlbacher, Florian Pflug

Monday, Sep16 - Friday, Sep 20

Time schedule:

09:00 - 13:00	Course
13:00 - 14:00	Lunch
14:00 - 18:00	Course

Course topics:

Monday, Sep 16:

“Online Resources”: DNA analysis: sequence retrieval, homology searches; Protein analysis: UniProt and InterPro resources, sequence based determination of modular architecture; Sequence logos.

Tuesday, Sep 17:

“Databases”: Gene ontologies: Data model, hierarchies (cellular components, molecular functions, biological processes), online resources; Functional gene networks and pathways, molecular interactions, databases; Variations between Individuals: dbSNP, 1000 genomes, Hapmap; Variations between species: Single locus comparisons (Ensembl), multiple sequence alignment (MSA).

Wednesday, Sep 18

“R”: Introduction to basic statistics for biologists and the programming language R and Bioconductor; Accessing databases from R

Thursday, Sep 19 and Friday, Sep 20

“Introduction to analysis of –omics data and data integration”: NGS, common NGS experimental designs (DNA Sequencing, Ribo-Seq, RNA-Seq, ChIP-Seq, ATAC-Seq); Basic NGS analysis pipeline, available user-friendly software; GO analysis; Pathway analysis; Integration with ENCODE data; Search for small molecule inhibitors for candidate pathway targets.

Saturday, Sep 21

Departure

Summer School I
Part 2- Barcelona
Patent Course
Midterm Meeting
2nd Consortium Meeting

EC Innovative Training Network MATURE-NK - ETN-765104

September 23-27, 2019

Venue:
Barcelona Biomedical Research Park
Carrer del Dr. Aiguader, 88
08003 Barcelona, Spain

Websites:
<https://www.google.com/maps/place/PRBB+Parc+de+Recerca+Biomèdica+de+Barcelona/@41.3852331,2.1942455,15z/data=!4m5!3m4!1s0x0:0x81e449abea5aae0e!8m2!3d41.3852331!4d2.1942455>
<https://www.upf.edu/web/nkiller>

Sunday, September 22

Arrival of all students of the consortium and Dr. Ute-Christine Konopka from the Partner Organization Thinksafe/BDC Basel

Hotel:

Travelodge Barcelona Poblenou
Carrer de Llancuna 32
E-8005 BARCELONA
Spain
Phone: +34 936 241 802

Websites: <https://www.travelodge.es/hotel-en-poblenou-barcelona/>
https://www.bing.com/maps?&ty=18&q=TRAVELODGE%20BARCELONA%20POBLENOU%20BARCELONA&ss=ypid.YN6306x4058996629478946462&ppois=41.39997863769531_2.2009799480438232_TRAVELODGE%20BARCELONA%20POBLENOU_YN6306x4058996629478946462~&cp=41.399979~2.20098&v=2&sV=1

Contact:

In case of any problems, please contact
Anna Rea, PhD student, Mobil: +39 3209536596; +34 602479401;
E-mail: anna.rea@upf.edu

or

Anna Rivas Bartoli; E-mail: anna.rivas@upf.edu

(further contacts in case of emergency:

Dr. Aura Muntasell; Mobile: +34 648250116, E-mail: amuntasell@imim.es

Prof. Miguel Lopez-Botet, Phone: 0034-933160780; Email: miguel.lopez-botet@upf.edu)

Please note: General person to contact is Anna Rea as your colleague in the PhD program of the MATURE-NK project, she will be helpful to in case you cannot find hotel, venue or encounter any other problem. Anna will meet you at the hotel on Monday morning at 8:30 and bring you to the site where the course will take place.

COURSE MODULE 1 - Part A **Intellectual Property Rights**

Participants:

Sachin Chauhan, Camille Philippon, Romja Wieboldt, Natalia Colomar, Anna Thaller, Irene Lazaro, Anna Rea, Rebecca Kotzur, Martin Fahrenberger, Beatriz Fernandez, Jonathan Druge, Simone Mantesso, Sonya Ciulean

Organizer and instructor:

Dr. Ute Christine-Konopka, Partner Organization 2 (Thinksafe/BDC Basel)

Monday, September 23 and Tuesday, September 24

Time schedule:

09:00 - 13:00	Course
13:00 - 14:00	Lunch
14:00 - 18:00	Course

Course topics:

Overview on IP and patents: IP at public research organization: commercial potential, policies, and rules; types of IPRs: copyright, design, trademarks, trade secrets, software; introduction to patents: patent basics, patentability, how to read patents; global patent system: filing and prosecution; patent protection strategies, claim drafting; **patent search tools and databases:** PubMed, Esp@cenet

Tuesday, September 24

Afternoon/evening: Arrival of PIs of the beneficiaries, representatives of the partner organizations, invited speakers, EC project officer.

Hotels:

Motel One BCN-Ciudadella and Travelodge Barcelona Poblenou (according list)

Motel One Barcelona-Ciudadella:

Passeig de Pujades 11-13

E-08018 Barcelona (HB-004822)

Spain

Phone: +34-936261900

E-mail: barcelona-ciudadella@motel-one.com

Website: <https://www.motel-one.com/en/hotels/barcelona/hotel-barcelona-ciudadella/>

Travelodge Barcelona Poblenou (addresses see on page 3)

MIDTERM REVIEW MEETING

EC Innovative Training Network MATURE-NK - ETN-765104

September 25, 2019

Venue:

[Barcelona Biomedical Research Park](#)

Carrer del Dr. Aiguader, 88

08003 Barcelona

Spain

Participants:

EC project officer: Elisa Failla

PIs of beneficiaries: Prof. Ulrike Köhl (coordinator), Dr. Stephan Kloess, Prof. Karl-Johan Malmberg, Dr. Lise Kveberg, Prof. Jakob Passweg, Dr. Astrid Tschan-Plessl, Dr. Daniela Pende, Prof. J. Di Santo, Prof. Adelheid Cerwenka, Prof. Miguel Lopez-Botet, Dr. Aura Muntasell, Dr. Natan Stein, Dr. Sebastian Burgstaller-Muehlbacher, Dr. Mathieu Blery, Dr. Rita Pfeifer, Dr. Jan Spanholtz, Dr. Thomas Grunwald, Prof. Erhard Hofer

Representatives of partner organizations: Dr. Rudolf Dömötör, Dr. Ute-Christine Konopka, Dr. Joachim Koch

External scientific advisory board: Prof. Jeffrey Miller

PhD students of the project: Sachin Chauhan, Camille Philippon, Ronja Wieboldt, Natalia Colomar, Anna Thaller, Irene Lazaro, Anna Rea, Rebecca Kotzur, Martin Fahrenberger, Beatriz Fernandez, Jonathan Druge, Simone Mantesso, Sonya Ciulean

Student ombuds-woman: Dr. Angelica Cuapio

Wednesday, September 25

09:00 - 09:15

Miguel Lopez-Botet

*(Universitat Pompeu Fabra,
Barcelona)*

Elisa Failla

*(EC project officer,
REA, Brussels)*

Ulrike Koehl

*(Coordinator,
Medical School Hannover)*

Erhard Hofer

*(Scientific manager,
Medical School Hannover)*

Welcome

Introduction

09:15 - 10:20

Stephan Kloess

(Medical School Hannover)

Karl-Johan Malmberg

(University Hospital Oslo)

Jakob Passweg

(University Basel)

Daniela Pende

(University Hospital Genoa)

James Di Santo

(Institut Pasteur, Paris)

Adelheid Cerwenka

(University Heidelberg/Mannheim)

Tour de Table

(each scientist-in-charge presents research team and role in consortium, 3 min each, at end 10 min discussion)

Miguel Lopez-Botet
(Universitat Pompeu Fabra, Barcelona)
Natan Stein
(substituting Ofer Mandelboim)
(Hebrew University, Jerusalem)
Sebastian Burgstaller-Muehlbacher
(substituting Arndt von Haeseler)
(Medical University Vienna)
Mathieu Blery
(Innate Pharma, Marseille)
Rita Pfeifer/Nina Möker
(Miltenyi Biotec, Bergisch Gladbach)
Jan Spanholtz
(Glycostem Therapeutics, Oss)
Thomas Grunwald
(Fraunhofer IZI, Leipzig)
Rudolf Dömötör
(WU Vienna)
Ute-Christine Konopka
(Thinksafe, Basel)
Joachim Koch
(Affimed GmbH, Heidelberg)
Angelica Cuapio
(Karolinska Institutet, Stockholm)

10:20 - 10:50 **Elisa Failla**
(EC Research Executive Agency, Brussels)

Project Officer Presentation

10:50 - 11:10 **Coffee break**

11:10 - 11:05 **Ulrike Koehl**
(Medical School, Hannover)
Erhard Hofer
(Medical School, Hannover)

Coordinator's report
45 min, 10 min discussion
(recruitment, research and training, deliverables, milestones, ethical issues, management, financial issues, implementation risks, possible re-orientation, networking)

Reports of MC fellows

(individual background, research project proposal, individual training at local university, planned collaborations and secondments; 5 min presentation, 2 min discussion)

12:05 - 12:12 **Sachin Chauhan**
(Medical School, Hannover)

12:12 - 12:19 **Camille Philippon**
(University Hospital Oslo)

12:19 - 12:26 **Ronja Wieboldt**
(University Basel)

12:26 - 12:33 **Natalia Colomar**
(University Hospital Genoa)

12:33 - 12:40	Anna Thaller <i>(Institut Pasteur, Paris)</i>
12:40 - 13:47	Irene Garces Lazaro <i>(University Heidelberg/Mannheim)</i>
12:50 - 14:00	Lunch
14:00 - 14:07	Anna Rea <i>(Universitat Pompeu Fabra, Barcelona)</i>
14:07 - 14:14	Rebecca Kotzur <i>(Hebrew University, Jerusalem)</i>
14:14 - 14:21	Martin Fahrenberger <i>(Medical University Vienna)</i>
14:21 - 14:28	Beatriz Cozar Fernandez <i>(Innate Pharma, Marseille)</i>
14:28 - 14:35	Jonathan Druge <i>(Miltenyi Biotec, Bergisch Gladbach)</i>
14:35 - 14:42	Simone Mantesso <i>(Glycostem Therapeutics, Oss)</i>
14:42 - 14:49	Sonya Ciulean <i>(Fraunhofer IZI)</i>
14:50 - 15:10	Coffee break
15:10 - 16:40	Restricted session between the fellows and REA officer
16:40 - 16:50	Restricted session between coordinator and REA officer
16:50 - 17:30	Feedback and open discussion
19:30	Departure for dinner

2nd CONSORTIUM MEETING

September 26-27, 2019

Venue:

Barcelona Biomedical Research Park
Carrer del Dr. Aiguader, 88
08003 Barcelona
Spain

Participants:

PIs of beneficiaries: Prof. Ulrike Köhl (coordinator), Dr. Stephan Kloess, Prof. Karl-Johan Malmberg, Dr. Lise Kveberg, Prof. Jakob Passweg, Dr. Astrid Tschan-Plessl, Dr. Daniela Pende, Prof. J. Di Santo, Prof. Adelheid Cerwenka, Prof. Miguel Lopez-Botet, Dr. Aura Muntasell, Dr. Natan Stein, Dr. Sebastian Burgstaller-Muehlbacher, Dr. Mathieu Blery, Dr. Rita Pfeifer, Dr. Jan Spanholtz, Dr. Thomas Grunwald, Prof. Erhard Hofer

Representatives of partner organizations: Dr. Rudolf Dömötör, Dr. Ute-Christine Konopka, Dr. Joachim Koch

External scientific advisory board: Prof. Jeffrey Miller

Additional invited speaker: Prof. Carlos Vilches

PhD students of the project: Sachin Chauhan, Camille Philippon, Ronja Wieboldt, Natalia Colomar, Anna Thaller, Irene Lazaro, Anna Rea, Rebecca Kotzur, Martin Fahrenberger, Beatriz Fernandez, Jonathan Druge, Simone Mantesso, Sonya Ciulean

Student ombuds-woman: Dr. Angelica Cuapio

Thursday, September 26

09:00 - 09:10 **Welcome and introduction**

Miguel Lopez-Botet - Universitat Pompeu Fabra

Ulrike Köhl - Coordinator/Medical School Hannover

Scientific Workshop Modules 1+2 (continued from 1st Consortium Meeting)

General NK cell activity and regulation

NK cells and herpes virus infections

(overview for students including recent novel developments leading to specific subproject, 25 min + 5 min discussion)

09:10 - 9:40 **Karl-Johan Malmberg** - P2 / University Hospital Oslo

Functional Diversification of the Human NK Cell Repertoire

09:40 - 10:10 **Daniela Pende** - P3 / University Hospital Genoa

KIR Genes and Proteins: KIR genotype and phenotype in haplo-HSCT

10:10 - 10:40 **James Di Santo** - P7 / Institut Pasteur Paris

ILCs, NK cells and virus-induced tumors

10:40 - 11:00 *Coffee break*

11:00 - 11:30 **Mathieu Blery** - P10 / Innate Pharma

Targeting innate immunity in cancer

Project overviews of PI's and progress reports of students Part 1

(15 min PI + 10 min student + 5 min discussion)

- 11:30 - 11:45 **Sachin Chauhan** - P1 / MHH Hannover
Dual-specific CAR expressing NK cells to improve anticancer effects against head and neck squamous-cell cancer (HNSCC)
- 11:45 - 12:00 **Camille Philippon** - P2 / University Hospital Oslo
Off-the-shelf Cell Therapy with Genetically Edited iPSC-derived NK Cells
- 12:00 - 12:30 **Astrid Tschan-Plessl/Ronja Wieboldt** - P3 / University Hospital Basel
Harnessing adaptive NK cells in hematological cancer immunotherapy
- 12:30 - 12:45 **Natalia Colomar** - P4 / University Hospital Genoa
NK cell receptor repertoire relevant for anti-leukemia activity
- 12:45 - 14:00 *Lunch*
- 14:00 - 14:15 **Anna Thaller** - P5 / Institut Pasteur Paris
Natural Killer (NK) and innate lymphoid cell responses to autologous and allogeneic tumors
- 14:15 - 14:45 **Adelheid Cerwenka / Irene Garces Lazaro** - P6 / University Heidelberg-Mannheim
Restoring NK cell function in cancer
- 14:45 - 15:15 **Aura Muntasell** - P7 / University Pompeu Fabra Barcelona
Actionable checkpoints modulating TGF β suppression of NK cell-mediated ADCC
/ Anna Rea
Enhancing NK cell anti-tumor function through combinatorial strategies including tumor-antigen-specific mAbs and checkpoint modulators
- 15:15 - 15:45 **Natan Stein/ Rebecca Kotzur** - P8 / Hebrew University Jerusalem
Elusive ligands and potential of the natural cytotoxicity receptors (NCRs)
- 15:45 - 16:15 **Sebastian Burgstaller-Muehlbacher/Martin Fahrenberger** - P9 / Medical University Vienna
Bioinformatics analysis of single-cell RNA-seq data including NK cells
- 16:15 - 16:35 *Coffee break*
- 16:35 - 16:55 **Angelica Cuapio** / Karolinska Institutet
NK cell recruitment into the CNS
- 16:55 - 17:10 **Beatriz Cozar Fernandez** - P10 / INNATE PHARMA
Towards the generation of relevant in vitro models for human cancer immunotherapy with check-point inhibitors
- 17:10 - 18:00 **Supervisory Board Meeting Part 1** (discussions)
all PIs plus external advisory board (Jeffrey Miller) plus POs (Rudolf Dömötör - WU.Vienna, Ute Konopka - BDC.Basel, Joachim Koch - AFFIMED)
- 19:30 *Departure for dinner*

Friday, September 27

Invited lectures

- 09:00 - 09:45 **Jeffrey Miller** / *Masonic Cancer Center, Minneapolis*
NK cell therapies
- 09:45 - 10:15 **Carlos Vilches** / Hospital Universitario Puerta de Hierro, Madrid
Immunogenetics and expansion of NKG2C+ NK cells in response to human cytomegalovirus
- 10:15 - 10:45 **Joachim Koch** / AFFIMED, Heidelberg
Novel Antibody-Dependent Cellular Cytotoxicity (ADCC)-mediating antibodies for Redirected Optimized Cell Killing (ROCK®) of innate immune cells to fight cancer
- 10:45 - 11:05 *Coffee break*

Project overviews of PI's and progress reports of students Part 2

- 11:05 - 11:20 **Jonathan Druge** - P11 / MILTENYI BIOTEC
Development of next-generation CAR NK cell therapies in combination with a fully automated manufacturing process
- 11:20 - 11:50 **Jan Spanholtz / Simone Mantesso** - P12 / GLYCOSTEM THERAPEUTICS
Genetic improvement of NK cell products from stem/progenitor cells without using CAR technology
- 11:50 - 12:20 **Ulrike Köhl / Sonya Ciulean** - P13 / Fraunhofer IZI
In vivo therapy trials of CAR NK-based ATMPs redirected against head and neck cancer - proof of concept
- 12:20 - 12:50 **Theses Committees Round 1**
- 12:50 - 14:00 *Lunch*
- 14:00 - 15:00 **Supervisory Board Meeting Part 2 (decisions)**
all PIs plus external advisory board (Jeffrey Miller)
plus POs (Rudolf Dömötör - WU.Vienna, Ute Konopka - BDC.Basel, Joachim Koch - AFFIMED)
- 15:00 - 16:00 **Theses Committees Round 2 + 3**
- 16:00 - 17:00 **Visit Lopez-Botet labs and facilities**
- 17:00 *Tour: Highlights of Barcelona*

Saturday, September 28

Departure

Summer School I

EC Innovative Training Network MATURE-NK - ETN-765104

Part 3 - Luxembourg

Participation at NK2019 Meeting

18th Meeting of the Society for Natural Immunity

Website: <https://nk2019.com/the-18th-meeting-of-the-society-for-natural-immunity/>

September 30 - October 3, 2019

As a further training students of the project MATURE-NK will participate at the international NK2019 Meeting in Luxemburg to get in addition to the regular workshops at the Summer and Winter Schools an overview and deeper understanding of the NK cell field from basic NK cell biology to the application of NK cell-modifying reagents and ex vivo amplified NK cells in cancer therapy.