



Master Biomedical Life Sciences

**Studies in Biology in Regensburg (D) und Boulder,
CO (USA):**

genetics, developmental biology, medical microbiology

PhD in Regensburg

Institute for Med. Microbiology and Hygiene

Epstein-Barr-Virus in transplant patients

Post-Doc in Innsbruck

Institute for Biomedical Aging Research Österr.

Academy of Sciences (ÖAW), now Universität Innsbruck

age-associated changes in T cells

vaccination of older adults

Habilitation Immunobiology

Professor for Immunology

Dean of Studies



- Universität Innsbruck
- Master Biomedical Life Sciences
- Requirements and Application
- Structure and Contents
- Example of Elective Module
 - Applied Immunology (Birgit Weinberger)
- Career Opportunities
- Contact Points



Universität Innsbruck

16	Faculties (Fakultäten)
132	Studies (Studienrichtungen)
27.432	Students
52%	International students
5.689	Employees



Locations

Campus Innrain

Campus Sport

Campus Technik

Campus Universitätsstraße

Several institutes and institutions throughout the city

other locations:

Campus Landeck

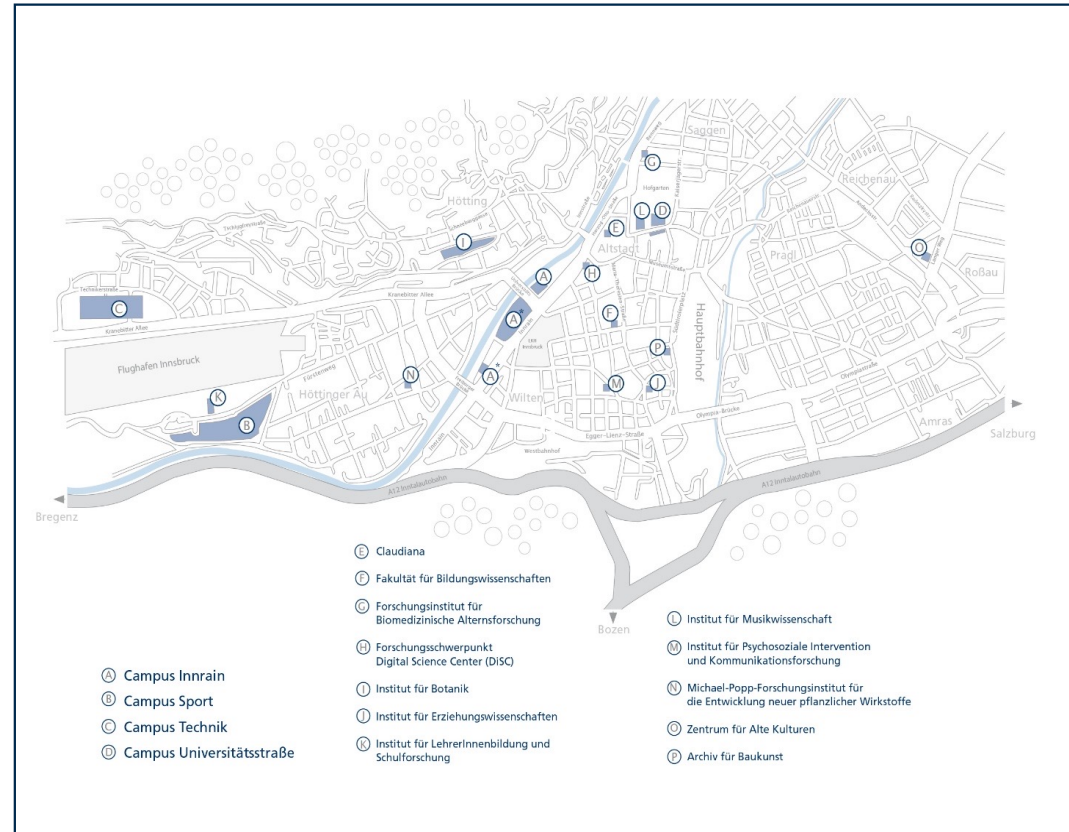
Campus Lienz

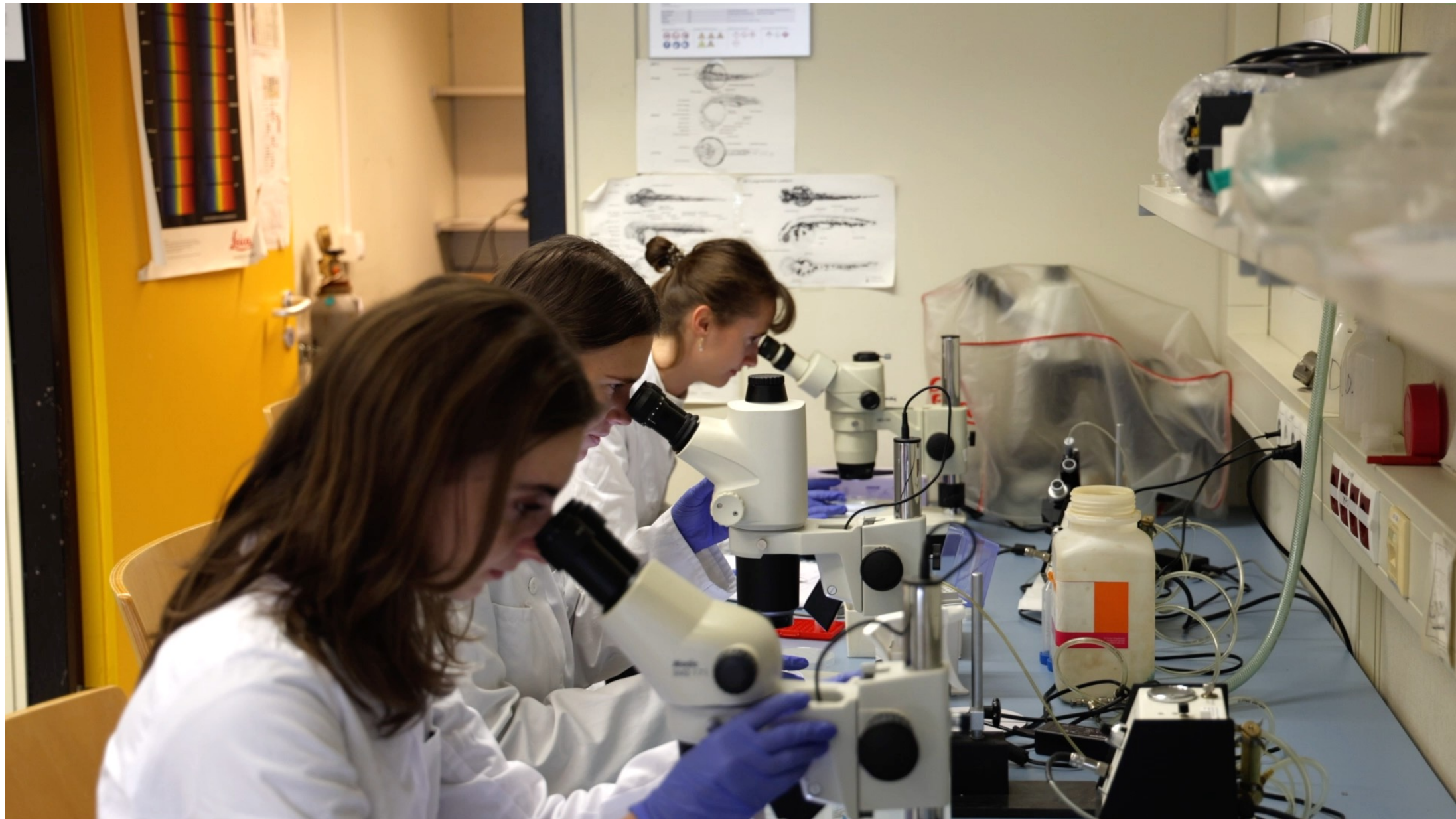
Universitätszentrum Obergurgl/Ötztal

Dornbirn (Inst. für Textilchemie, Atemgasanalytik)

Mondsee/OÖ (Forschungsinst. für Limnologie)

Wien (Inst. für Rechtssoziologie)





Basics

Master of Science (MSc)

Duration/ECTS-AP

4 semesters/120 ECTS-AP

Mode of Study

full-time

Language

English

Admission Requirements

Relevant bachelor´s degree or equivalent and
language certificate



Requirements

Relevant bachelor´s degree or equivalent
e.g. Bachelor´s Programme Biology at
University Innsbruck

Core requirements

- 8 ECTS-AP Human Biology, Immunology, Physiology (animal or human)
- 12 ECTS-AP Genetics, Molecular Biology, Cell Biology
- 12 ECTS-AP Chemistry, Biochemistry, Physics, Mathematics

Individual missing core requirements can be fulfilled during the first 2 semesters of the Master studies

Elegibility and equivalence will be determined in the course of the online application

Master's Programme Biomedical Life Sciences

Are you fascinated by the complex mechanisms of the human body and interested in exploring how cellular and molecular processes can be studied in model organisms or using stem cells?

Apply online ✓

The Master's programme in Biomedical Life Sciences provides you with an in-depth understanding of cellular and molecular processes in health and disease – from bioinformatics and stem cell biology to immunology.

You will learn cutting-edge techniques such as single-cell analysis, 3D cell cultures, live cell imaging, and computer-based modeling, and apply them in hands-on lab courses in small groups and in individual research projects.

Applications

1. Online application
2. Inscribe at the Admission Departement (Studienabteilung) during the relevant time frame
www.uibk.ac.at/studium/organisation/studium/#termine
3. Register for individual courses (check the deadlines!)

www.uibk.ac.at/studium/

Structure and Contents

Master Biomedical Life Sciences/ 120 ECTS-AP

7,5 ECTS-AP

Compulsory Module:

Current topics and methods of biomedical research

Interactive format with student presentations, group work etc.

25 ECTS-AP
Master Thesis
+ 20 ECTS-AP
related courses

67,5 ECTS-AP
Elective Modules

Topics of the elective modules

1	<i>Grundlagen der Bioinformatik</i>	19	<i>Stammzellen und Regeneration in Wirbellosen</i>
2	<i>Bioinformatische Analyse von Transkriptomikdaten</i>	20	<i>Herstellung und Reprogrammierung humaner Stammzellen</i>
3	<i>Genomweite Technologien der Biologie</i>	21	<i>Stammzellen in der Regenerativen Medizin und Karnheitsmod.</i>
4	<i>Single-Cell-Methoden</i>	22	<i>3D Zellkultur und Organoide</i>
5	<i>Computergestützte Modellierung</i>	23	<i>Biodruck und Züchtung menschlicher Gewebe</i>
6	<i>Computergestützte Strukturbioogie</i>	24	<i>Onkogene Signaltransduktion</i>
7	<i>Quantitative Bildanalyseverfahren</i>	25	<i>Epigenetik und Krebs</i>
8	<i>Organisation, Funktion und Pathologie von Geweben</i>	26	<i>Modellorganismen in der Altersforschung</i>
9	<i>Live Cell Imaging</i>	27	<i>Modellorganismen in der Diabetesforschung</i>
10	<i>Genetische und optogenetische Methoden</i>	28	<i>Flexibilität des Herz-Kreislauf-Systems</i>
11	<i>Mechanobiologie in Entwicklung und Krankheit</i>	29	<i>Die Maus in der Biomedizinischen Forschung</i>
12	<i>Zellhomöostase und Metabolismus</i>	30	<i>Mechanismen der Immunität</i>
13	<i>Zellproliferation, Differenzierung und Zelltod</i>	31	<i>Interaktionen zwischen Immunsystem und Pathogenen</i>
14	<i>Zellmigration in Entwicklung und Krankheit</i>	32	<i>Angewandte Immunologie</i>
15	<i>Zelluläre Stressantwort</i>		
16	<i>Chronobiologie</i>	33	Laboratory rotation I
17	<i>Seneszenz und Zellalterung</i>	34	Laboratory rotation II
18	<i>Bioadhäsion</i>	35	Selected topics: Tunicata
		36	Selected topics
		37/38	Modul aus einem anderen Biologie-Master
		39/40	Interdisziplinäre Kompetenzen

Digital modules

Cell Biology

Stem Cells

Cancer

Model organisms

Immunology

- lab rotation
- “Joker“ modules
- modules from other Master
- Interdisciplinary competences

Organization of Elective Modules

Each module comprises

- lecture
- seminar
- practical course

very small groups

(8-12 students for most modules)

5 weeks full-time

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3 time slots per semester (5 weeks)

- 5-6 modules per time slot
- choose 1 module per time slot at the beginning of the semester
- max. 3 modules per semester

Lab rotation (Projektstudie)

Individual project in a laboratory selected by the student

- approx. 8 weeks full time
- poster and flash talk in a „student’s symposium“
- 15 ECTS-AP
- max. 2 lab rotations per student



By Marta D - Own work, CC BY 4.0, <https://commons.wikimedia.org/w/index.php?curid=64320349>

Module: Applied Immunology

lecture

- Transplantation
- Tumor immunology
- Allergies
- Immunodeficiencies and HIV
- Autoimmunity
- Pregnancy
- Vaccination

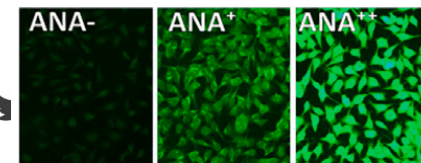
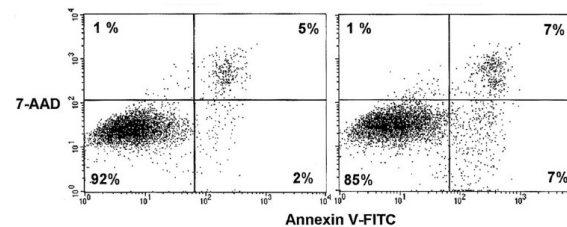
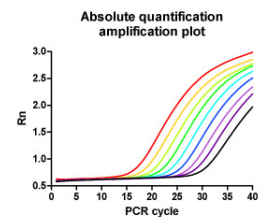
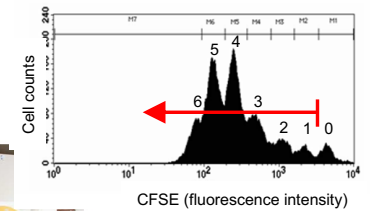
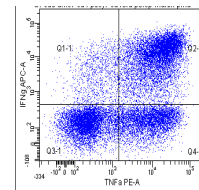
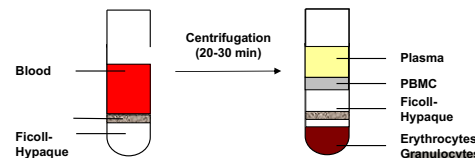
seminar

- current literature in immunology
- each student presents a paper or 2 students share a topic with 1 paper and 1 review

Module: Applied Immunology

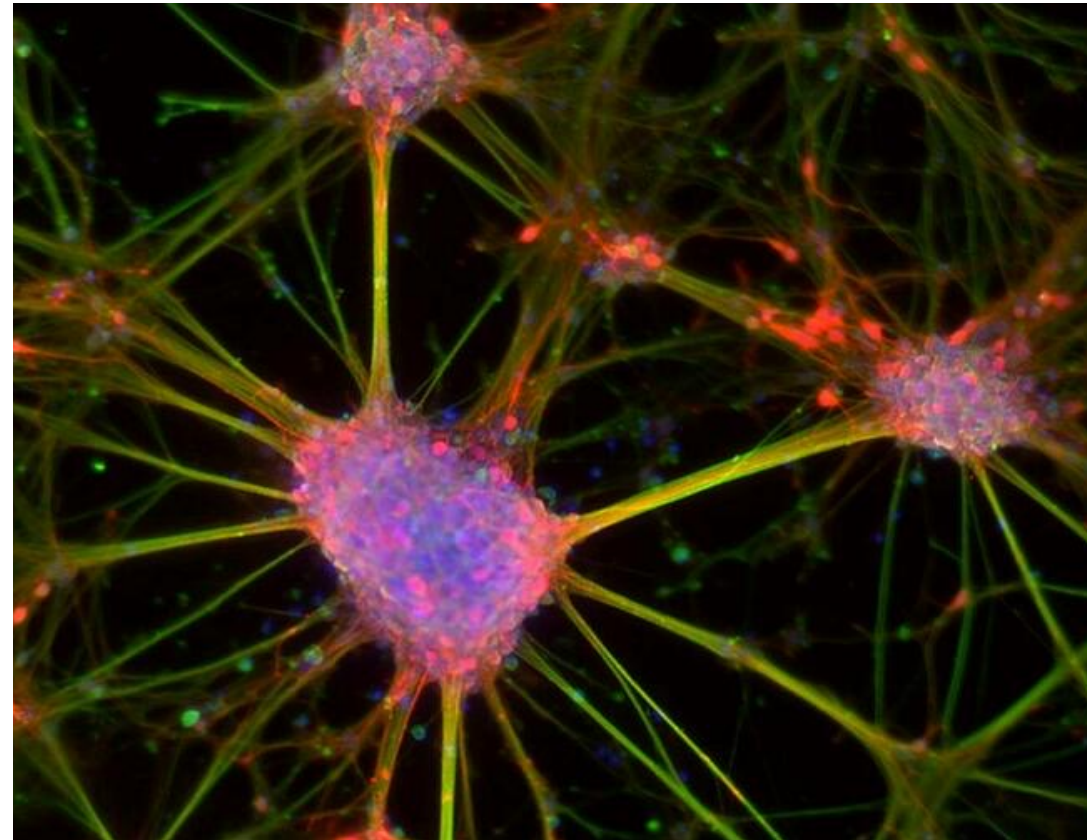
practical course (2 weeks)

- isolation of blood lymphocytes
- T cell proliferation and inhibition by immunosuppressive drugs
- detection of cytokines by flow cytometry and real-time PCR
- differentiation, cell cycle and cell death in leukemia cells
- detection of anti-nuclear autoantibodies



Career opportunities

- research and teaching in the fields of molecular biology and biomedicine
- scientific activities in private companies, e.g. biotechnology, pharma, medicine
- scientific work in public institutions, e.g. in medicine, public health, food monitoring, forensics, research funding
- employment in fields related to other disciplines, e.g. journalism, in combination with additional qualifications
- enrol in a PhD programme



Kontakt und weitere Informationen

General Questions

Zentrale Studienberatung

studienberatung@uibk.ac.at

+43 512 507-32050

www.uibk.ac.at/studienberatung



Kontakt und weitere Informationen

Admission office

studienabteilung@uibk.ac.at

+43 512 507-32602

www.uibk.ac.at/studienabteilung

Living in Innsbruck, other topics

Österreichische Hochschüler:innenschaft

Wohnungsbörse, Heimkompass

help with search for rooms, apartments...

www.oehweb.at



Kontakt und weitere Informationen

Office for topics related to South Tyrol

suedtirolagenden@uibk.ac.at

+43 512 507-38501

www.uibk.ac.at/suedtirolagenden

Special needs

behindertenbeauftragte@uibk.at

+43 512 507-8887

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Questions?



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