KEY-RSU

Host Profile

INSTITUTE OF MICROBIOLOGY AND VIROLOGY

We are looking for researchers who want to build their own scientific direction at the interface of infection biology, immunology and translational medicine.

THE INSTITUTE WILL PROVIDE

4 POSTDOCTORAL POSITIONS

5 years of research and career development

36 months MSCA co-funded + 24 months RSU-funded

Marie Skłodowska-Curie Actions
Choose Europe for Science

Project No. 101313381 | Riga, Latvia

About this Host Profile

This guide brings together the information needed to explore the Institute of Microbiology and Virology as a host for your KEY-RSU research project. It introduces the research environment, thematic opportunities, supervisors and co-supervisors, and potential partner and secondment pathways.

The programme offers four postdoctoral positions, combining a 36-month MSCA co-funded phase with a 24-month RSU-funded phase. Candidates develop an individual research proposal within the advertised research opportunities.

READ THIS PROFILE ALONGSIDE THE OFFICIAL KEY-RSU CALL DOCUMENTATION for eligibility, employment conditions, application instructions and selection procedures. Access to specific resources and partner opportunities depends on the research project and the applicable arrangements. The postdoctoral researcher remains responsible for proposing a feasible project and identifying required resources; feasibility will be assessed during selection.

The Institute of Microbiology and Virology Host Environment

| Explore the host institute |

The Institute of Microbiology and Virology (MVI) is a research institute within Rīga Stradiņš University (RSU), specialising in medical microbiology, virology, immunology and molecular biology. It forms part of the RSU Science Centre under the oversight of the Vice-Rector for Science.

International position, distinctive strengths and scientific culture. MVI combines specialised biomedical expertise with a strong international collaboration network and participation in European research infrastructures, including its role as Latvia's national node of EATRIS-ERIC. Its distinctive strengths lie in host – pathogen interactions, viral pathogenesis and post-viral chronic disease, DNA-damage and telomere biology, miRNA regulation, tumour immunology, translational cancer research and biomarker discovery, supported by advanced molecular, cellular, single-cell, imaging and computational approaches.

Through KEY-RSU, MVI seeks postdoctoral researchers who can formulate ambitious but feasible research questions, develop an independent scientific direction within the advertised opportunities, and connect mechanistic research with clinically or societally relevant applications. The scientific culture emphasises research integrity, responsible and open research practices, critical discussion, methodological rigour, collaboration across disciplines and sectors, constructive supervision, knowledge sharing, and increasing researcher independence. Postdoctoral researchers are expected to contribute actively to international collaboration, mentoring, scientific exchange and the wider research community.

The Institute hosts several research groups led by tenure-track professors and senior researchers. Research at MVI spans host-pathogen interactions, infection biology, tumour immunology and translational cancer research, supported by advanced molecular, cellular and computational approaches. Within KEY-RSU, MVI will host four postdoctoral researchers in two complementary environments: the Host-Pathogen Interaction Lab and the Immunology & Cancer Lab.

MVI is particularly suited for researchers who wish to develop their own scientific direction at the interface of infection biology, immunology and translational medicine. We offer an environment where postdoctoral researchers can shape independent research ideas, access advanced experimental and computational approaches, and collaborate with clinical and international partners to generate scientifically and societally relevant impact.

KEY-RSU host teams	Indicative focus	Planned capacity
Host-Pathogen Interaction Lab Main supervisor: Prof. Bhupesh Kumar Prusty Co-supervisor: Dr. Zaiga Nora-Krūkle	MVI-1: Chlamydia-infection mediated DNA damage and mechanisms of telomere maintenance. MVI-2: Mapping miRNA–miRNA Regulatory Circuits: Implications for Immune Regulation and	2 postdoctoral researcher positions

KEY-RSU host teams	Indicative focus	Planned capacity
Visit the research group	Viral Pathogenesis	
Immunology & Cancer Lab Main supervisor: Prof. Dace Pjanova Co-supervisor: Dr. Zaiga Nora-Krūkle Visit the research group	MVI-3: Systemic immune response and its interaction with the tumour microenvironment in predicting immunotherapy outcomes. MVI-4: Overcoming immune checkpoint inhibitor resistance by combining checkpoint blockade with innate immune activation	2 postdoctoral researcher positions

Research environment and expertise

- Host-pathogen interactions, infection biology, viral pathogenesis, post-viral chronic disease, DNA-damage responses, telomere biology and miRNA regulation.
- Tumour immunology, molecular oncology, translational cancer research, immune profiling, tumour-immune co-cultures, melanoma models and biomarker discovery.
- Integration of cellular and molecular biology with single-cell and bulk transcriptomics, bioinformatics, systems biology and clinically oriented validation.
- International research teams comprising experienced supervisors, postdoctoral researchers, doctoral researchers, technical personnel and dedicated laboratory support.
- Close links to clinical collaborators support the translation of laboratory findings into clinically relevant research questions and validation studies.
- Strong international collaboration network with leading academic and clinical partners across Europe and beyond, supporting joint publications, Horizon Europe and COST proposal development, researcher mobility, scientific consultations, and data exchange.
- National node of EATRIS-ERIC - European Infrastructure for Translational Medicine.

Core infrastructure and methods

Area	Examples of available infrastructure or capability	Access note
Cell and infection models	Dedicated BSL-2 cell-culture environments; tumour-immune co-cultures; infection models; 3D cultures.	Training, biosafety clearance and project approval required.
Single-cell and sequencing	10x Genomics Chromium controllers; Agilent 4150 TapeStation; bulk and single-cell RNA-seq workflows.	Capacity, consumables and sequencing costs must be agreed.
Flow cytometry	BD FACS Discover S8 Cell Sorter; FACS Aria III; Accuri C6 Plus Flow Cytometer; immunophenotyping and cell	Booking and operator/training

Area	Examples of available infrastructure or capability	Access note
	sorting.	conditions apply.
Molecular biology	Nucleic-acid isolation and genotyping; QuantStudio 5 real-time PCR; thermal cyclers; Qubit 4; Lonza 4D Nucleofector; automated capillary Western blotting (JESS), Agilent Seahorse XF Pro analyzer	Method-specific training and consumables required.
Microscopy and imaging	EVOS M500; Leica DMi8; Nikon Eclipse 80i; Nikon Confocal Laser Scanning Microscope A1; BioTek Cytation C10 Confocal Imaging Reader; access to fluorescence and electron microscopy capabilities.	Project-specific availability applies.
Sample processing	gentleMACS Octo Dissociator and supporting cell/tissue-processing workflows.	Project-specific availability applies.
Computational support	Bioinformatics for genomic, transcriptomic and microbiome data; HPC computing capabilities.	Storage, software and support arrangements must be planned.
Specialised facilities	Radioactivity room for controlled molecular-biology and biochemistry experiments; access to broader RSU genomics and sequencing infrastructure may be arranged through institutional collaboration.	Use only where scientifically justified and under applicable authorisation.

RESEARCH FACILITIES AND ACCESS ARRANGEMENTS RSU provides dedicated office/laboratory space and access to the equipment and IT infrastructure necessary for the agreed research project. Access to specific specialised platforms, external facilities, samples and datasets is subject to project-specific arrangements, applicable approvals, training, capacity and agreed cost coverage. Access to the specialised resources listed above is subject to the conditions described in the Host Environment section and to project-specific arrangements.

Clinical, sample and data links

- MVI researchers maintain strong collaborations with clinical partners, biobanks, and research infrastructures to advance translational and clinically oriented research. These collaborations support the development and use of local biological sample collections from patients with myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS), fibromyalgia (FM), and melanoma, providing valuable resources for biomarker discovery and validation studies.

- Depending on project needs and approvals, collaborative research may involve access to clinical expertise, patient-derived samples, biobank collections, and associated research datasets.
- Researchers may also establish scientifically justified collaborations with the Latvian Genome Database and other national or international research infrastructures to support data-driven and precision medicine studies.

ACCESS CONDITION Any work involving patients, human biological material, clinical data or biobank resources is subject to approved study protocols, ethics approval, lawful data access arrangements, data-protection requirements, material-transfer procedures, custodian approval, resource availability and cost coverage.

No specific dataset, cohort size, sample volume or access arrangement is guaranteed by this profile.

Interdisciplinary and translational opportunities

- Collaboration with Social Sciences Research Centre on health communication, information manipulation, patient behaviour, nutrition and wider social determinants of health.
- Broader interdisciplinary opportunities across RSU include public health, digital health, communication research, clinical medicine and pharmacy
- Opportunities for clinical translation through hospital collaborators and interdisciplinary collaboration in computational biology and digital health
- Opportunities to collaborate with industry partners in applied research, innovation activities, technology development, and the translation of research findings into practical healthcare and biotechnology solutions.
- Opportunities to mentor students and, depending on experience and institutional needs, contribute to guest lectures, Doctoral School, teaching activities and thesis supervision.
- Opportunities to engage with international research networks, collaborative projects and visiting researchers relevant to the postdoctoral researcher's research area

Potential secondment and collaboration pathways

Potential pathway	Indicative contribution	Important qualification
Aarhus University	Proteomics/metabolomics, bioenergetics, sequencing, patient models and research training.	Final match to an individual project must be established.
University of Skövde	Digital health, information-driven care, precision medicine and translational medicine.	Scope and concrete training offer require project-level confirmation.
Royal College of Surgeons Ireland	Systems medicine, computational pathology, spatial and single-cell multi-omics, clinical biobanking and translational validation.	Relevant mainly where the project includes suitable digital pathology or multi-modal data work.
Spanish National Research Council	Cancer epigenomics, single-cell and multi-omic analysis, flow cytometry and immune-signature interpretation.	Potentially aligned with tumour-immunology work.

Potential pathway	Indicative contribution	Important qualification
National Institute of Research and Innovation	SPF rodent handling, tumour models, surgery, IVIS imaging and in vivo study design.	Animal ethics approval, training and facility capacity required.
SIA APPLY	Applied AI, computer vision, predictive modelling and production-oriented digital-health development.	Relevant where the proposed project requires applied AI, computer vision or predictive modelling

SECONDMENT STATUS Participation in a mandatory secondment of 6–12 weeks forms part of KEY-RSU.

The precise secondment host, duration, objectives, supervision and outputs will be agreed for each postdoctoral researcher. The postdoctoral researcher remains employed by RSU throughout the secondment. Additional host organisations may be considered, subject to confirmation of their suitability, compliance with KEY-RSU requirements and any necessary approvals.

Feasibility boundaries

- The programme supports ambitious but feasible projects aligned with the expertise, infrastructure and translational research environment available within MVI.
- Projects must fit the scientific competence and safe operating scope of the selected MVI team.
- Access to sequencing, animal, clinical, biobank, and imaging resources, as well as consumables, software, and associated funding, is subject to project-specific requirements, approvals, and resource availability.
- Access to patient cohorts, biological samples, and associated datasets may depend on recruitment feasibility, consent provisions, regulatory requirements, and partner agreements.
- Projects requiring ethical, regulatory, biosafety, or data protection approvals must obtain the necessary authorizations before the corresponding research activities can proceed.
- Postdoctoral researchers should identify critical dependencies, major risks, and credible mitigation measures in the proposal.

DATA AND PARTICIPANT RESEARCH Projects involving vulnerable groups, patients, sensitive personal data, online communities, information manipulation or cross-border data require early ethics and data-protection planning. Recruitment routes, consent, lawful basis, data minimisation, security, retention, sharing and publication controls must be specified before data collection