Annual Report 2021

eatris

European infrastructure
for translational medicine

Radhika Patnala - Nucleosome 2021

EATRIS-ERIC acknowledges with gratitude the support of:

MEMBERS

Republic of Bulgaria
Ministry of Education and Science

Czech Republic
Ministry of Education, Youth and Sports (MEYS)

Republic of Finland
Ministry of Education and Culture (OKM)

French Republic
Commissariat à l'Energie Atomique et aux Energies Alternatives (CEA)

Italian Republic
Istituto Superiore di Sanità (ISS)

Grand Duchy of Luxembourg
Le Gouvernement du Grand-Duché de Luxembourg

Kingdom of the Netherlands
ZonMW

Kingdom of Norway
*University of Bergen**

Kingdom of Norway
*University of Oslo**

Portuguese Republic
INFARMED-National Authority of Medicines and Health Products

Republic of Slovenia
Ministry of Education, Science and Sport

Kingdom of Spain
Instituto de Salud 'Carlos III'

Kingdom of Sweden
Vetenskapsrådet

OBSERVERS

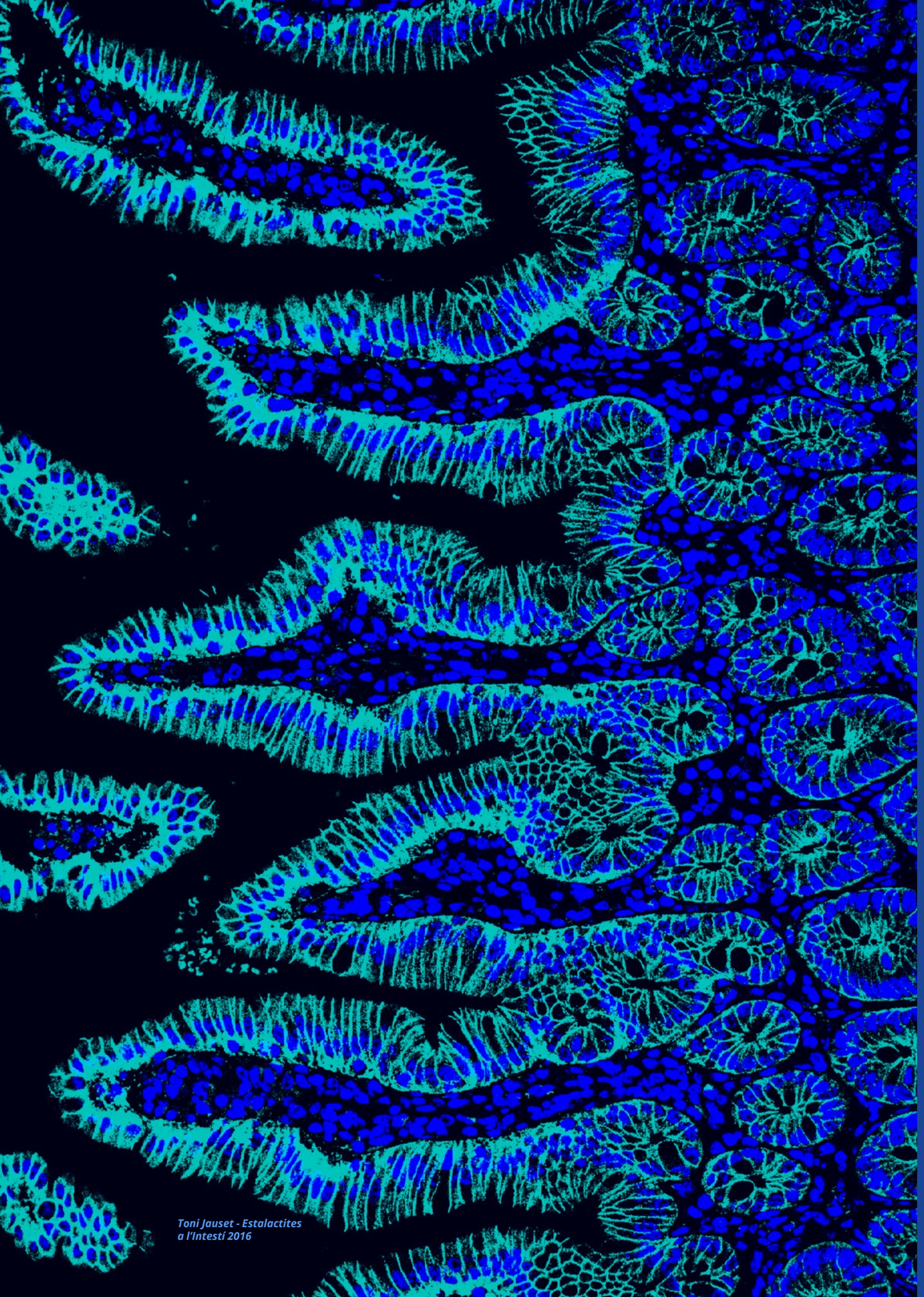
Republic of Croatia
Ministry of Science and Education

Republic of Latvia
Ministry of Education and Science

** The contribution in Norway is shared between the University of Oslo (UiO) and the University of Bergen (UiB).*

contents

Lavinia Herea - Stored Blood Cellular Lesion Before Transfusion 2020



Toni Jauset - Estalactites a l'Intestí 2016

forewords

Chair of Board of Governors

Håkan Billig
Chair of Board of Governors

In 2021 EATRIS continued to adapt to the COVID-19 pandemic, developing new working practices and structures, and meanwhile pushed forward in various key areas. EATRIS joined 19 projects as partner, now being active in 21 projects in 2021 and continued to support a broad range of requests from academia and from industry.

While EATRIS is showing great success as a European Research Infrastructure, it is a membership organisation based upon the willingness of the member countries to promote and participate in its activities. As individual countries also have their own focus and research agendas, it is key to our activities that each member also receives a demonstrable national return on investment – considerable advantages accrue nationally which promote and are in line with the national research agendas and ambitions in addition to the broad European infrastructure activities.

EATRIS-Plus is an infrastructure development project with the aim to strengthen EATRIS' long-term capacities as translational enabler for Personalised Medicine. Being a distributed Research Infrastructure, one of the most important mechanisms in ensuring our sustainability is increasing the capacity of the national nodes, as well as widening our reach to aim for more countries to become members. EATRIS-Plus provides the relevant financial and know-how support as well as training and exchange opportunities for the EATRIS nodes to plan their long-term development in accordance with the overall infrastructure strategy plan.

The flagship project EATRIS-Plus has been integral to this aim, seeking to enhance the long term development of the EATRIS nodes, with a programme launched to build capacity for all national nodes as well as providing them with support, training and exchange opportunities and seeking to increase communication, outreach and awareness, as well as sharing business intelligence and best practices.

As part of a process to increase visibility, dialogue and awareness, EATRIS launched its new website in 2021 and embraced a new Communications Strategy, showing significant and ongoing growth across all communication channels. This accompanied a doubling of the number of training events from the previous year, with 9 online workshops and 18 webinars delivered, including specific workshops for National Directors and Coordinators.

Another key focus in 2021, with the appointment of Gary Saunders as Data Director, was the development of a Data Strategy and the implementation of strong data management practices across all countries in the EATRIS network. With Croatia becoming the 14th node of EATRIS, and with the enthusiasm and dedication shown by all members of the infrastructure, the outlook for 2022 is bright, as we address new challenges and continue to promote and contribute to the optimisation of translational research building productive, strong and sustainable structures and relationships.

Sincerely,

Håkan Billig,
Chair of EATRIS Board of Governors

The EATRIS Board of Governors (BoG) is the governance body of EATRIS-ERIC with full decision making authority. It is formed with representatives of ministries within EATRIS Member States. The BoG typically approves budget and yearly operational plans and approves new countries as members of the EATRIS Research Infrastructure.

Chair of Board of National Directors

Claudia Faria
Chair of Board of National Directors

Despite another challenging year, EATRIS continued to respond to the needs and requests of the translational research community. The year of 2021 was characterised by intense activities including a broad range of research services provided to academia and industry, support and preparation of grant applications, the organisation of education and training events and an active participation in international efforts to improve quality and reproducibility. Furthermore, we welcomed the Republic of Croatia as an Observer Member of EATRIS.

The continuing joint efforts between EATRIS C&S and EATRIS members produced successful grant applications for EU funding. Recently, new Horizon Europe proposals were funded including BY-COVID (aiming at open data sharing to support European preparedness for COVID-19 and other infectious diseases), ISIDORe (research services for COVID-19 and other infectious diseases) and EPND (a platform to accelerate biomarker discovery), to name a few.

Under the EATRIS Quality Initiative, multiple activities were developed to address reproducibility, best practices guidelines, technical benchmarking and to develop quality metrics and standards. These efforts will significantly improve the quality of scientific results and will help increase the credibility and visibility of the EATRIS community.

Several workshops, webinars and other e-learning initiatives were undertaken, gathering participants from EATRIS institutions across Europe and fostering international cooperation through EATRIS. Some examples include the series of EJP RD webinars on drug repurposing (more than 350 participants), the joint EMA / EATRIS / ADVANCE webinar about "Navigating the Regulatory Requirements for ATMPs" (300 participants), the EATRIS internal Symposium in Artificial Intelligence (over 260 participants) and the first Summer School in Personalised Medicine within the framework of EATRIS-Plus Project, organised by the EATRIS Portuguese Node in collaboration with the University of Ljubljana and EATRIS C&S (99 participants from 20 countries).

The visibility of EATRIS is continuously growing through its vibrant and committed community, both at national and international levels. It is of utmost relevance to stress the importance of the National Nodes, strengthening collaborations, supporting and facilitating biomedical research and disseminating the mission of EATRIS. The newly launched EATRIS website with interactive maps, new features, updated pages and re-configured navigation has boosted the awareness of EATRIS initiatives, together with dissemination through social media and newsletter channels.

With a rapidly changing and demanding Europe, EATRIS has been able to keep up with the challenges and opportunities. I am looking forward for next year, to following EATRIS' achievements and their impact in translational research towards a better human health and quality of life.

Sincerely,

Claudia Faria
Chair of Board of National Directors

The EATRIS Board of National Directors (BoND) is formed of national scientific representatives to ensure scientific excellence of the infrastructure and develop and implement the scientific strategy at national levels. The BoND reviews the participation of new institutions to the infrastructure. In several countries a National Coordinator provides support to the National Director for the day to day activities, fostering engagement and maintenance of a vibrant scientific community nationally.

EATRIS Scientific Advisory Board

Catherine Larue
On behalf of the EATRIS Scientific Advisory Board

Despite another year of COVID sanitary hurdles (remote working, no traveling), 2021 can be considered as a very successful year for EATRIS thanks to the highly motivated team who were able to stay on top of the EATRIS 2021 objectives.

The Horizon Europe 2021-2027 programme was launched as EATRIS sought optimal efficiency in selecting and applying for proposals that serve the priorities set out in the EATRIS mission statement. As a result, the grant applications made this year resulted in an incredibly high success rate for funding. The upcoming Data Strategy will no doubt further contribute to serving the overall EATRIS strategy, and support efficiency in the areas of data management and artificial intelligence.

Finally, at the end of 2021, we were delighted to see the new EU-AMRI alliance, of which EATRIS is an important pillar, turn into a reality. The alliance will help build the European healthcare identity, save money and de-silo the existing research infrastructures for the benefit of all European patients.

Catherine Larue,
On behalf of the EATRIS Scientific Advisory Board (SAB)

The EATRIS Scientific Advisory Board (SAB) is formed of external scientific experts to provide independent feedback and advice on the scientific strategy of the organisation.

EATRIS Executive Board

Anton Ussi
Operations & Finance Director

Toni Andreu
Scientific Director

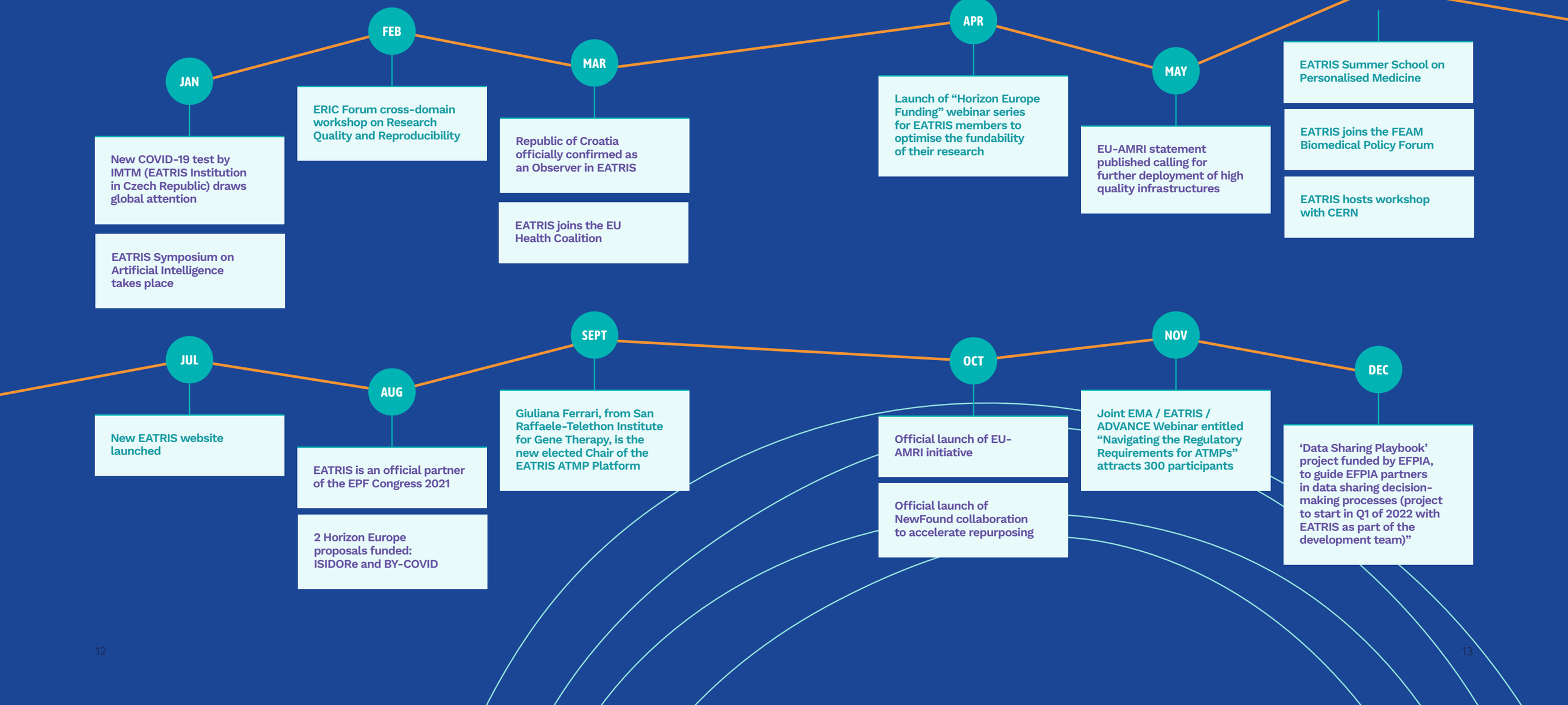
2021 has been an extraordinary year for the EATRIS family. The development of the pandemic has affected the life of the organisation just as it has had an impact on society as a whole. We continued to learn how to maximise the efficiency of our new way of working and strengthen relationships despite the distance factor; working together without being able to come together in face-to-face meetings and events. The EATRIS community has found a way to transform this challenge into an opportunity to map out its future as a dynamic, modern, adaptable and disruptive organisation, demonstrating more than ever that strength lies in unity and that the ***shared talents of hundreds of European scientists can find solutions for unmet medical needs*** where uncertainty previously reigned.

Our product platforms have set up an ambitious scientific agenda that will unfold over the coming years allowing the cross-fertilisation of our scientific and technological capacities. Our portfolio of projects has grown significantly and EATRIS-Plus, our flagship initiative, is up and running brilliantly. The arrival of Gary Saunders as the organisation's Data Director will allow us to maximise our impact in the European research data space, and our contributions to key projects like ISIDORe and CanSERV establish EATRIS as a reference organisation in preclinical investigation, not only amongst Research Infrastructures but also in the wider European scientific community.

Adversity, when confronted with intelligence and commitment, can be transformed into ***an opportunity to construct a better future***. 2021 has proved an example of the determination shown by a community of talent not to be distracted from its journey into the future of translational medicine.

highlights

Timeline of key moments



2021 in numbers

EATRIS in Numbers

77 CITATIONS IN SCIENTIFIC PAPERS

21 PROPOSALS SUBMITTED WITH EATRIS AS PARTNER

29 EXPERT ADVICES

17 RESEARCH SERVICE REQUESTS HANDLED WITH BIOTECH COMPANIES

127 INSTITUTIONS

112 SERVICE REQUESTS

941 TRANSLATIONAL SCIENTISTS

01 PUBLIC-PRIVATE PARTNERSHIP HUB WITH A PHARMA COMPANY

Funding Granted € MILLION

EATRIS Users

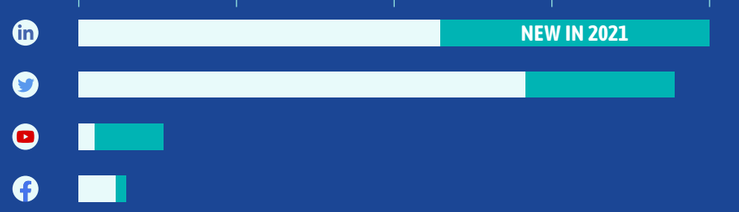
- *Academia*
- *Charities/Funding agencies*
- *Big Pharma*
- *SME*

EATRIS Online

949,500 WEBSITE IMPRESSIONS

800hrs+ YOUTUBE VIDEOS WATCH TIME

Social Media



TOTAL POSTS

523

572

46

481

Participation in EATRIS Events

EDUCATION & TRAINING EVENTS **2983**

EATRIS-PLUS SUMMER SCHOOL **99**

PARTCIPANTS TMEX TRAINING COURSE **26**

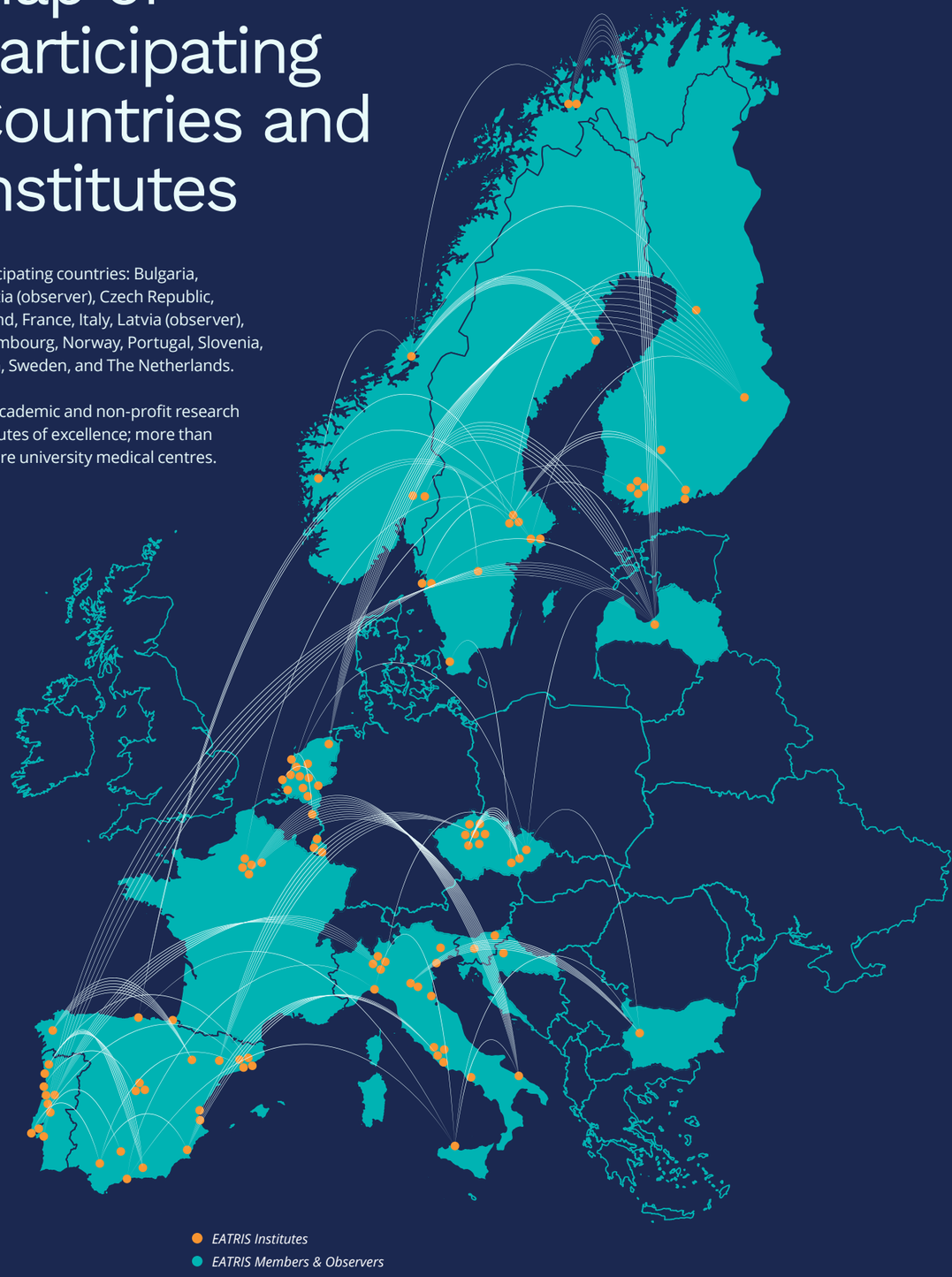
=26

infra-structure

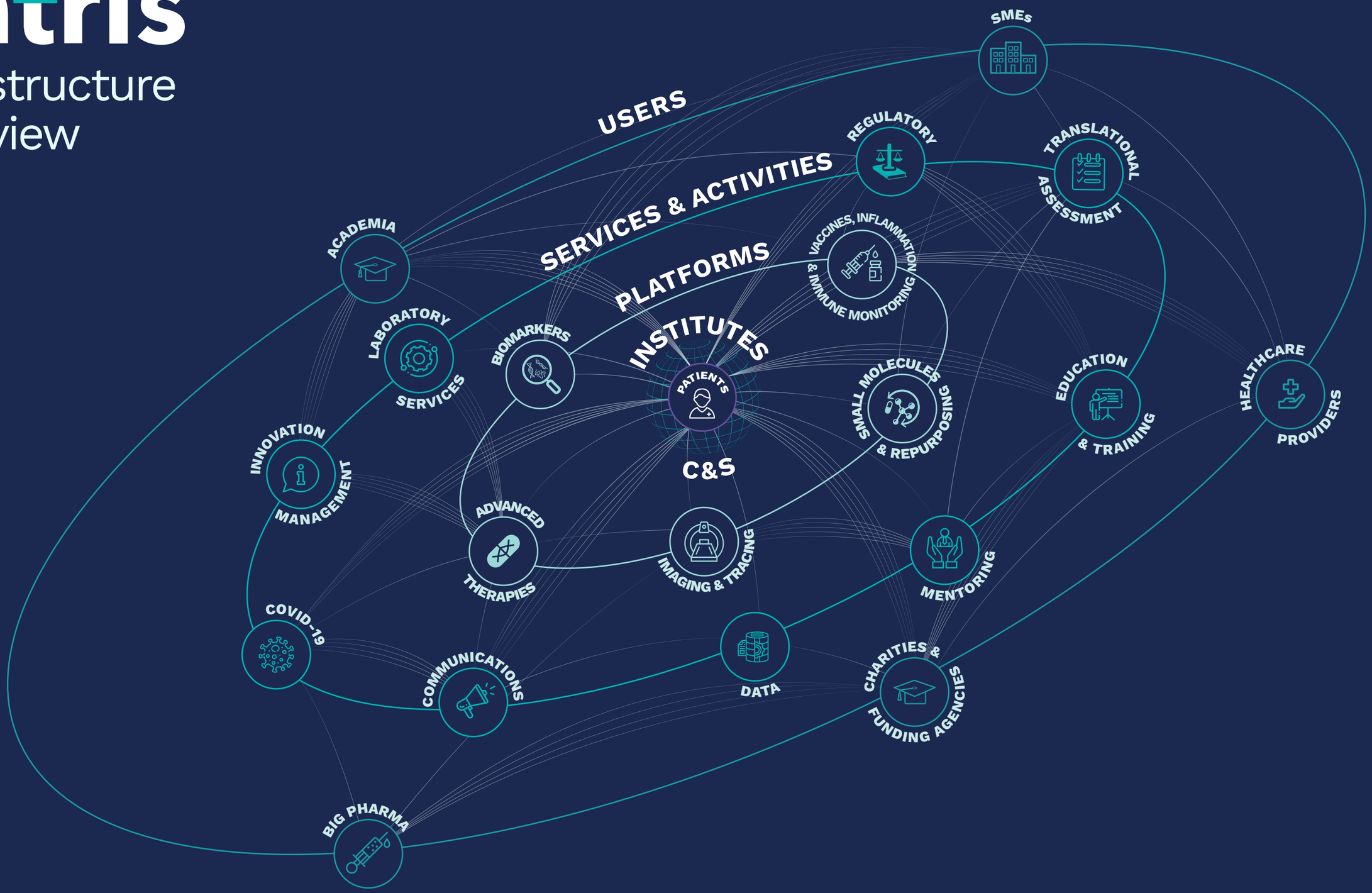
Map of Participating Countries and Institutes

Participating countries: Bulgaria, Croatia (observer), Czech Republic, Finland, France, Italy, Latvia (observer), Luxembourg, Norway, Portugal, Slovenia, Spain, Sweden, and The Netherlands.

127 academic and non-profit research institutes of excellence; more than half are university medical centres.



eatris
Infrastructure Overview



Spotlight on Croatia joining

We were delighted to officially welcome Croatia as an Observer in EATRIS-ERIC in 2021. We are looking forward to supporting the local team, who share our passion for patient-centric research and innovation, as they set up a multi-disciplinary national infrastructure offering, and work towards future membership.

Regarding the Observership, Jelena Ilić-Dreven (Croatian representative on the EATRIS Board of Governors) says:

> *The Ministry of Science and Education of the Republic of Croatia expresses its strong support for Croatian participation as an Observer in EATRIS-ERIC. Advances in biomedical research, genomics, proteomics, and metabolomics, led to increasing insight into disease-related molecular mechanisms and consequently, to the need for its rapid implementation in the clinical use. Therefore, the University of Zagreb School of Medicine as well as many other biomedical research institutions in the Republic of Croatia have clearly declared their orientation towards translational research and translational medicine. Participation in EATRIS as an Observer will provide Croatian researchers with a great opportunity for networking, collaboration, access to state-of-the-art facilities, technologies, translational know-how as well as training and supporting services."*

Fran Borovečki, representative on the EATRIS Board of National Directors for Croatia, comments:

> *We have been following the excellent work of EATRIS for quite some time now, and working on joining the EATRIS efforts. We believe that EATRIS provides the perfect framework for development of specific expertise, that already exist in Croatia. We also believe that joining EATRIS will provide the Croatian institutions with improved international visibility, allowing for easier involvement in international research efforts and better access to European funding opportunities. In addition, it will help Croatian scientists fill the gap in driving the research results forward to industry and to connect with industrial partners outside Croatia. There are a growing number of institutions in Croatia who are endeavouring in translational approaches and we believe that Croatian Observership will give a great boost to the ongoing efforts. We are honoured and grateful to be part of the EATRIS family."*

We very much look forward to the Croatian involvement in the years ahead as we continue our mission to support researchers in developing their scientific discoveries into benefits for patients.

updates from member states

Bulgaria

In 2021 we welcomed Sofia University as a member of the Biomarker and Small Molecules platforms. The main priority this year was the continuation of the planned stage of construction and completion of the technological base of the new research infrastructures as part of the NRRI-2017-2027 and established Centres of Competence, which is made possible by the financial support of the Ministry of Education and Science of Bulgaria and other EC funding instruments. Several events and training courses were conducted with the involvement of new laboratories to provide insights into new technologies used in translational medicine. Activities have started to explore competence in the areas of HPC / HPDA / AI in the sector of biomedicine and electronic infrastructures. The main aim is to work towards the establishment of synergies between national research infrastructures based on data transfer, the use of computing resources and translational biomedical studies.

Board of Governors representative

Yanita Zherkova

National Director

Rossitza Konakchieva

EATRIS in Bulgaria consists of 2 institutes:

- **NATIONAL CENTER OF INFECTIOUS AND PARASITIC DISEASES (NCIPD)**
- **SOFIA UNIVERSITY**

EATRIS Bulgaria took part in 8 education and training activities in 2021 involving 12 participants.

EATRIS Bulgaria was involved in the EATRIS-Plus project in 2021.

#EATRIS_BG

Croatia

The year 2021 was a very important year in Croatian translational research community since Croatia became an observer-member of EATRIS. We focused our activities on raising awareness about the benefits that the membership would provide to us among the scientists in the field. We succeeded in announcing our membership in the leading media in Croatia and organised two online meetings with potentially interested scientists. The aforementioned activities succeeded in achieving notable visibility for both EATRIS and Croatian Node. Internally, we worked on the prominence of the effort by spreading news about the trainings and the possibility of entering the project consortia. We also presented the opportunities Croatian membership in EATRIS provides by holding presentations at local level, including to the leadership of the University Hospital Center Zagreb, the largest hospital system in Croatia, and also to the leadership of the University of Zagreb School of Medicine. In 2021 we also applied for the HORIZON-EIC PATHFINDER call together with EATRIS with the proposal Emerging technologies in cell and gene therapy (EMHANCE). Also, we were preparing the project proposal Computational models for new patient stratification strategies (Smart-PASS) for the HORIZON Europe call in February 2022.

On a different level, EATRIS also helped us identify a partner for in vivo testing of our proprietary compounds, potentially active in treating COVID-19. Our employees participated in the training and events organised by EATRIS (Grant Writing webinar, AI Symposium, workshop on ATMP development, Summer schools, Best practices in private public collaboration, Communication). This is really great new opportunity for our researchers and other professionals, which we would like to expand and use even more.

Board of Governors representative

Jelena Ilić-Dreven

National Director

Fran Borovečki

EATRIS Croatia is an observer country coordinated by the University of Zagreb School of Medicine (UZSM/ZSM).

EATRIS Croatia took part in 10 education and training activities in 2021 involving 22 participants.

EATRIS Croatia was involved in the EATRIS-Plus project in 2021, and received €12,488 as part of the project.

#EATRIS_HR

Czech Republic

We continued to provide services and open access in the area of biomarkers, small molecules, imaging and tracing, vaccines and ATMPs to users from the Czech Republic and abroad. We have progressed in the preparation of clinical trial for nucleoside PNH173 (preparation of specifications and tender procedure for synthesis, formulation and clinical batch manufacturing). We have also continued phase I clinical trial for 68Ga-desferrioxamine as a tracer for imaging of bacterial infections, which has been partially outsourced to Austrian collaborators. We continued existing clinical trials, recruiting more individuals, Czech multiomic mapping, where we have provided biological materials, data and data management support for EATRIS institutions within the H2020 project EATRIS-Plus. In 2021, we completed the whole genome sequencing and significantly progressed in both proteomic and metabolomic profiling of human samples. EATRIS-CZ contributed to development of open-access database Mischa (H2020 EOSC-Life project), and provided chemoresistance data for in vitro response of primary tumor cells to anticancer drugs. We have received several international grants, particularly in biological data – H2020 EOSC-BY COVID, HERA – Resilience in COVID-19 pandemic and applied for H2020 EOSC-DATA4CANCER. These projects aim to build further capabilities and deliver innovative scientific tools to support the RI's long-term sustainability.

Board of Governors representative

Marta Vandrovcová

National Director

Marian Hajdúch

EATRIS Czech Republic consists of 11 institutes:

- CENTRAL EUROPEAN INSTITUTE OF TECHNOLOGIES (CEITEC)
- CHARLES UNIVERSITY
- UNIVERSITY OF CHEMISTRY AND TECHNOLOGY PRAGUE
- INSTITUTE OF EXPERIMENTAL MEDICINE OF THE CAS
- INSTITUTE OF MACROMOLECULAR CHEMISTRY OF THE CAS
- INSTITUTE OF MICROBIOLOGY OF THE CAS
- INSTITUTE OF ORGANIC CHEMISTRY AND BIOCHEMISTRY OF THE CAS
- MASARYK UNIVERSITY
- NUCLEAR PHYSICS INSTITUTE OF THE CAS
- PALACKÝ UNIVERSITY - INSTITUTE OF MOLECULAR AND TRANSLATIONAL MEDICINE (IMTM)
- INTERNATIONAL CENTER FOR CLINICAL RESEARCH OF ST. ANNE'S UNIVERSITY HOSPITAL BRNO

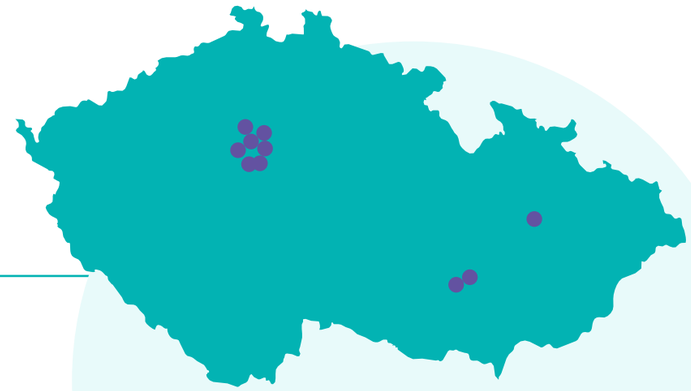
EATRIS Czech Republic was involved in the following funding proposal in 2021, totalling over € 4,277.50:

- CANSERV

EATRIS Czech Republic took part in 10 education and training activities in 2021 involving 17 participants.

EATRIS Czech Republic is also involved in the following 3 ongoing projects:

- EATRIS-PLUS
- EOSC-LIFE
- TRANSVAC2



#EATRIS_CZ

Finland

In 2021, EATRIS Finland continued development of high-accuracy PET and MRI imaging, gene vector development and manufacturing, DNA and RNA sequencing services, experimental animal work and recombinant protein production. The Institute for Molecular Medicine Finland ('FIMM'), within the University of Helsinki, has continued to play an important role in the EATRIS quality initiative. EATRIS Finland translational research has also been very active in several EU programs and one gene vector product has been advanced to phase 2 multi-centre clinical trial in ischemic heart disease in five EU countries.

Board of Governors representative

Sirpa Nuotio

National Director

Seppo Ylä-Herttuala

EATRIS in Finland consists of 10 institutes:

- UNIVERSITY OF TURKU CENTRAL ANIMAL LABORATORY (UTUCAL)
- FINNISH RED CROSS BLOOD SERVICE
- INSTITUTE FOR MOLECULAR MEDICINE FINLAND (FIMM)
- UNIVERSITY OF TAMPERE REGEA CELL AND TISSUE CENTER
- TURKU CENTRE FOR DISEASE MODELLING (TCDM, UNIVERSITY OF TURKU)
- A.I. VIRTANEN INSTITUTE, UNIVERSITY OF EASTERN FINLAND
- UNIVERSITY OF HELSINKI
- UNIVERSITY OF TURKU - TURKU UNIVERSITY HOSPITAL
- VTT TECHNICAL RESEARCH CENTRE OF FINLAND (VTT)
- TURKU PET CENTRE (TPC, TURKU UNIVERSITY)

EATRIS Finland is also involved in the following 2 ongoing projects:

- EATRIS-PLUS
- EOSC-LIFE

EATRIS Finland was involved in the following 2 funding proposals in 2021, totalling over €1,269,575.

- ISIDORe
- REMEDI4ALL

EATRIS Finland took part in 10 education and training activities in 2021 involving 26 participants.

#EATRIS_FI

France

NeurATRIS, the French node of EATRIS, is a national research infrastructure dedicated to translational research in neurosciences and in particular neurodegenerative and neurodevelopmental diseases. NeurATRIS activities are mainly focused on (i) strengthening the training and teaching support in the field of Translational Neurosciences, (ii) making available, in particular to academics, its platforms and competences, and (iii) supporting academic research with the Call for Proposal and the selection of 14 new collaborative projects in 2021. These actions, combined with maintaining the highest level of excellence in the instrumental park, have enabled the development of new methodological approaches and new applications to neurodegenerative and developmental diseases. The new radiochemistry platform (CEA-MIRCen), accepted in July 2021 and fully operational in 2022, will complete NeurATRIS services, making available molecular imaging services (PET radiotracers, data analysis and processing). NeurATRIS's activities in 2021 resulted in (i) an increase in scientific vitality with 276 publications in journals of excellence vs. 150 in 2020, (ii) an increased use of its high-tech platforms and expertise by new teams, (iii) enhanced interactions with national research infrastructures and (iv) a dynamic activity of partnerships with the signing of several academic, clinical and private contracts (national, European, transatlantic).

Board of Governors representative

Eric Guittet

National Director

Philippe Hantraye

National Coordinator

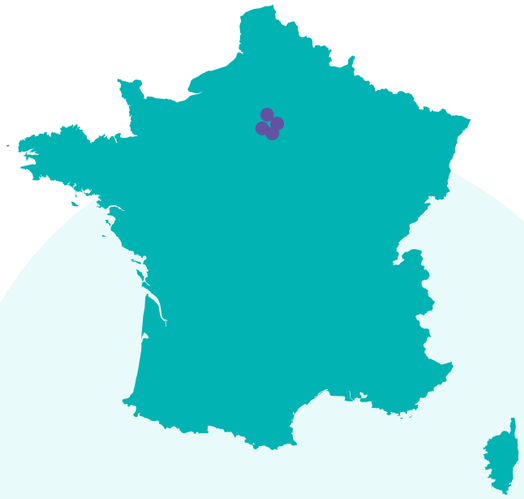
Emilie Hangen

EATRIS in France consists of 5 institutes:

- ALBERT CHEVALIER-HENRI MONDOR HOSPITAL
- BIOTHERAPIES INSTITUTE FOR RARE DISEASES (BIRD)
- BRAIN & SPINE INSTITUTE IHU-A-ICM
- FRENCH ALTERNATIVE ENERGIES AND ATOMIC ENERGY COMMISSION (CEA)
- NEUROSCIENCES BICÊTRE - PARIS SUD (NBPS)

EATRIS France was involved in the EATRIS-Plus project in 2021.

EATRIS France took part in 16 education and training activities in 2021 involving 148 participants.



#EATRIS_FR

Italy

The restrictions implemented by the Italian government as a result of the COVID-19 pandemic significantly impacted the Italian activities in 2021. Most of our activities were devoted to reconstructing and reinforcing the connections between the Italian members with the aim of stimulating the sense of belonging and identity within our community. We held several meetings with the platform members to identify priority biomedical research topics of interest for the development of common projects and training interventions. At the same time we promoted the participation of Italian institutes in EATRIS and in EATRIS projects and collaborations. Just as importantly, we had a series of meetings with the coordinators of the Italian Nodes of 8 ESFRI Research Infrastructures to speed up interactions and collaboration and that led to the birth of a National Coordination Center for Biomedical Research Infrastructures. In this context it is noteworthy that we are organising, together with ECRIN and BBMRI, a joint workshop to present the opportunities offered to the scientific community by EATRIS, ECRIN and BBMRI.

Board of Governors representative

Maria Ferrantini

National Director

Franca Moretti

EATRIS in Italy consists of 24 institutes:

- CENTRO DI RIFERIMENTO ONCOLOGICO DI AVIANO (CRO AVIANO)
- CENTRO MEDICINA RIGENERATIVA (CMR)
- CNCCS - IRBM SCIENCE PARK
- FONDAZIONE IRCCS CRIBT
- FONDAZIONE IRCCS FONDAZIONE PASCALE
- FONDAZIONE IRCCS GIOVANNI PAOLO II
- FONDAZIONE IRCCS ISTITUTO NAZIONALE DEI TUMORI (INT-MILAN)
- FONDAZIONE IRCCS OSPEDALE PEDIATRICO BAMBINO GESÙ
- FONDAZIONE IRCCS SDN PER LA RICERCA E L'ALTA FORMAZIONE IN DIAGNOSTICA NUCLEARE
- IDI-FONDAZIONE IRCCS LUIGI MARIA MONTI
- IRCCS FOUNDATION SANTA LUCIA
- IRCCS ISTITUTO GIANNINA GASLINI (IGG)
- IRCCS ISTITUTO ORTOPEDICO GALEAZZI
- ISMETT
- ISTITUTI FISIOTERAPICI OSPITALIERI - ISTITUTO DERMATOLOGICO "SAN GALLICANO"
- ISTITUTI FISIOTERAPICI OSPITALIERI - REGINA ELENA TUMOR RESEARCH
- ISTITUTO ROMAGNOLO PER LO STUDIO DEI TUMORI "DINO AMADORI" (IRST) - IRCCS
- ISTITUTO SUPERIORE DI SANITÀ (ISS)
- MARIO NEGRI INSTITUTE FOR PHARMACOLOGICAL RESEARCH
- NATIONAL INSTITUTE FOR INFECTIOUS DISEASES LAZZARO SPALLANZANI
- RIZZOLI ORTHOPEDIC INSTITUTE (IOR)
- SCIENTIFIC INSTITUTE SAN RAFFAELE (HSR)
- FONDAZIONE POLICLINICO UNIVERSITARIO A. GEMELLI IRCCS
- IRCCS ISTITUTO GIANNINA GASLINI (IGG)

EATRIS Italy was involved in the following 3 funding proposals in 2021, totalling over € 4,572,589:

- ISIDORe
- CANSERV
- REMEDI4ALL

EATRIS Italy is also involved in the following 4 ongoing projects:

- ADVANCE
- EATRIS-PLUS
- EU-PEARL
- TRANSVAC2

EATRIS Italy took part in 22 education and training activities in 2021 involving 275 participants.

#EATRIS_IT

Latvia

In 2021, EATRIS Latvia utilised the Riga Stradiņš University (RSU) website and newsletters to communicate and disseminate EATRIS activities. We also participated in numerous workshops. Leading researchers, clinicians, young scientists and students from RSU and partner organisations participated in various seminars and trainings organised by EATRIS and EATRIS-Plus, including the EATRIS Symposium on Artificial Intelligence and Personalised Medicine; the EATRIS Strategic Workshop: Hub and Nodes' Funding Strategies and TMex (Translational Medicine Explained) Winter School. As part of EATRIS-Plus, we promoted the need to involve patient organisations in science and research projects in order to promote patient-centered science. We launched activities in the EATRIS-Latvia National Contact Point network to highlight this topic in the Latvian community of scientists. In order to expand the range of participants of the National Node and enable new cooperation, in 2021 we signed a Memorandum of Understanding with MGI Tech Co Ltd, a global leader in life science innovation, operating in more than 50 countries and regions and serving more than 1,000 customers worldwide.

Board of Governors representative

Uldis Berkis

National Director

Liene Nikitina-Zake

EATRIS Latvia is an observer country coordinated by Riga Stradins University.

EATRIS Latvia was involved in the EATRIS-Plus project in 2021.

EATRIS Latvia took part in 12 education and training activities in 2021 involving 29 participants.

#EATRIS_LV

Luxembourg

In 2021, the Luxembourg node focused on the completion and full exploitation of running projects. The Orchestra study, launched in 2020, benefited from already existing research studies established in Luxembourg. Participants of the National Centre of Excellence in Research on Parkinson's Disease (NCER-PD) programme and the CON-VINCE study were invited to participate in ORCHESTRA Luxembourg, as part of a population-based mid- to long-term follow-up on COVID-19 to examine the response to the COVID-19 vaccination. As part of the doctoral training unit i2TRON, an inclusive training regime following the EATRIS characteristics for a translational scientist was created and published in a training catalogue available through the EATRIS training node, allowing students and external parties alike to take advantage of the collaboration between i2TRON and EATRIS. In parallel, the "SCOL" (Study of Continuous Oral Levodopa) study was launched in Luxembourg, seeking new treatment options for Parkinson patients, further reinforcing Luxembourg as a testbed for disease specific investigation at a population-wide level. Luxembourg's collaborative spirit and research landscape enabled the node to build on 2020 achievements and ongoing projects to fully flourish, while simultaneously providing an established environment for new projects to start during the ongoing COVID-19 pandemic.

Board of Governors representative

Jean-Claude Milmeister

National Director

Frank Glod

National Coordinator

Iris Egner

EATRIS in Luxembourg consists of 3 institutes:

- INTEGRATED BIOBANK OF LUXEMBOURG (IBBL, LIH)
- LUXEMBOURG INSTITUTE OF HEALTH
- LUXEMBOURG CENTER OF SYSTEM BIOMEDICINE

EATRIS Luxembourg was involved in the following 2 funding proposals in 2021, totalling over €382,000:

- CANSERV
- CODING.BIO

EATRIS Luxembourg is also involved in the following 2 ongoing projects:

- EATRIS-PLUS
- EPND

EATRIS Luxembourg took part in 13 education and training activities in 2021 involving 49 participants.

#EATRIS_LU

Norway

In 2021, EATRIS Norway up-scaled dissemination and outreach activities to increase awareness of EATRIS services for Norwegian research and industry, and participation in EU funding applications, networking opportunities and training. Good connections have been established with research administrations at the Universities of Tromsø, Trondheim, Bergen and Oslo, and the coordinator has had monthly meetings with the Medical Faculty at UiO to update them on events, services, and matchmaking opportunities. This has resulted in successful participation in international funding applications as well as in workshops and events. Moreover, industry outreach was extended to Norway's largest community for health startups, ALEAP incubator, and the newly established EITRI medical incubator in Bergen. We also presented to the Centre for Digital Life, a national initiative for biotechnology and innovation. We have reached out to postdocs and young researchers across Norway, and in collaboration with other ESFRI research infrastructures successfully organised webinars featuring EATRIS and other research infrastructures. Finally, Researchers from the Universities of Bergen and Oslo have been recruited to the COVID-19 research forum. In 2021, EATRIS Norway used many of the services offered by EATRIS, like consortium building and letter of support for EU funding applications.

Board of Governors representative

Marianne Grønsleth

National Director

Janna Saarela

National Coordinator

Anita Kavlie

EATRIS in Norway consists of 7 institutes:

- HAUKELAND UNIVERSITY HOSPITAL
- UNIVERSITY OF BERGEN (UIB)
- HOSPITAL NORTH NORWAY (UNN)
- UNIVERSITY OF TROMSØ (UIT)
- NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY (NTNU)
- UNIVERSITY OF OSLO (UIO)
- OSLO UNIVERSITY HOSPITAL (OUH)

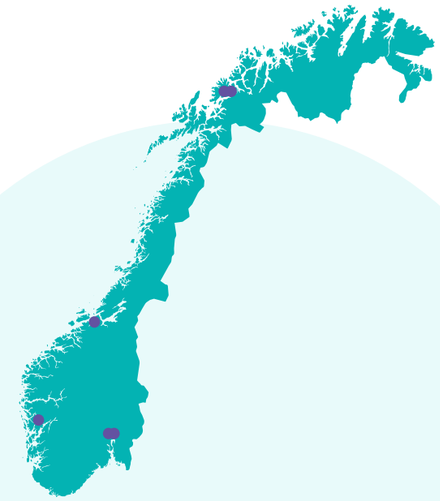
EATRIS Norway was involved in the following 3 funding proposals in 2021, totalling over €1.3m:

- CANSERV
- ISIDORe: RESEARCH INFRASTRUCTURE SERVICES FOR RAPID RESEARCH RESPONSES TO INFECTIOUS DISEASE EPIDEMICS
- CODING.BIO

EATRIS Norway is also involved in the following 4 ongoing projects:

- EJP RD
- EPND
- PERMIT
- EATRIS-PLUS

EATRIS Norway took part in 23 education and training activities in 2021 involving 865 participants.



#EATRIS_NO

Portugal

Despite another challenging year, EATRIS Portugal continued its activities to pursue the main goals of EATRIS. The National Hub was formally accepted in July 2019 and includes 14 specialised centres that have joined the five platforms of EATRIS and Infarmed is the coordinating institution. Currently, two new entities are in the process of joining EATRIS Portugal. In June 2021 we organised the first Summer School in Personalised Medicine within the framework of the EATRIS-Plus Project, in collaboration with the University of Ljubljana and EATRIS C&S. This online event was well attended, with over 100 participants from 20 different countries. Aiming to foster the international network through EATRIS, we strengthened our collaboration with EATRIS Spain. To this end, we organised a joint webinar on 30 November 2021, entitled "Biomarker Success Stories: from bench to the clinical practice. Barriers, tips and tricks." The event included talks on success stories by the Portuguese and the Spanish nodes, followed by a fruitful round table discussion. The EATRIS Portugal activities and initiatives were disseminated through the publication of two newsletters.

Board of Governors representative

Rui Santos Ivo

National Director

Claudia Faria

National Coordinator

Helena Baião

EATRIS in Portugal consists of 14 institutes:

- 3B'S RESEARCH GROUP, UNIVERSITY OF MINHO
- ASSOCIATION FOR INNOVATION AND BIOMEDICAL RESEARCH ON LIGHT AND IMAGE (AIBILI)
- AVEIRO INSTITUTE OF BIOMEDICINE (IBIMED)
- CENTER FOR NEUROSCIENCE AND CELL BIOLOGY
- CHAMPALIMAUD FOUNDATION
- COIMBRA INSTITUTE FOR BIOMEDICAL IMAGING AND TRANSLATIONAL RESEARCH (CIBIT)
- COIMBRA UNIVERSITY HOSPITAL (CHUC)
- INSTITUTE FOR BIOENGINEERING AND BIOSCIENCES - STEM CELL ENGINEERING RESEARCH GROUP (IBB - SCERG)
- INSTITUTO DE BIOLOGIA EXPERIMENTAL E TECNOLÓGICA (IBET)
- INSTITUTO DE INVESTIGAÇÃO E INOVAÇÃO EM SAÚDE (I3S
- INSTITUTO DE MEDICINA MOLECULAR JOÃO LOBO ANTUNES (IMM)
- INSTITUTO PORTUGUÊS DE ONCOLOGIA DO PORTO FRANCISCO GENTIL (IPO-PORTO)
- LIFE AND HEALTH SCIENCES RESEARCH INSTITUTE / CLINICAL ACADEMIC CENTRE - BRAGA
- NOVA MEDICAL SCHOOL, UNIVERSIDADE NOVA DE LISBOA (NMS, NOVA)

EATRIS Portugal took part in 21 education and training activities in 2021 involving 92 participants.

EATRIS Portugal was involved in the following 4 funding proposals in 2021, totalling over €1,330,515:

- ISIDORe
- CANSERV
- CODING.BIO
- HYBRID HEART PROJECT

EATRIS Portugal is also involved in the following 1 ongoing project:

- EATRIS-PLUS

#EATRIS_PT

Slovenia

Despite the challenges posed by the COVID-19 pandemic, 2021 was a productive year for EATRIS Slovenia. In terms of projects, we were involved in the EATRIS-Plus and ADVANCE projects and also successfully secured grant funding of €495,750 as part of the REMEDI4ALL project. In terms of education and training activities, EATRIS Slovenia were involved in 13 EATRIS events, including the ADVANCE workshop in May, the EATRIS-Plus Summer School in June and the 'Public-Private Collaboration' workshop in September. We conducted a number of outreach activities from brochure production to website event promotion; from presentations at the University of Ljubljana to fruitful meetings with pharmaceutical and biotech industry. We also made a number of infrastructure investments, including a multimodal plate reader, liquid chromatography–mass spectrometry, high-performance liquid chromatography and a BSL2 cell laboratory. We sustained the umbrella consortium EATRIS-TRI.si, which involves partners from the Kemijski Inštitut, the Faculty Of Pharmacy at the University of Ljubljana and Medical school in Maribor.

Board of Governors representative

Albin Kralj

National Director

Irena Mlinarič-Raščan

National Coordinator

Žiga Jakopin

EATRIS in Slovenia consists of 2 institutes:

- MARIBOR UNIVERSITY
- UNIVERSITY OF LJUBLJANA

EATRIS Slovenia was involved in the following 1 funding proposal in 2021, totalling over €495,750:

- REMEDI4ALL

EATRIS Slovenia is also involved in the following 2 ongoing projects:

- ADVANCE
- EATRIS-PLUS

EATRIS Slovenia took part in 13 education and training activities in 2021 involving 68 participants.

#EATRIS_SI

Spain

The priority of our node for 2021 was to reinforce the EATRIS Spain community and boost the participation of EATRIS Spain institutes in EATRIS-ERIC activities. For that, individual interviews with all 23 EATRIS Spain institutes to inform them about EATRIS services and present success cases have taken place as well as presentation of EATRIS in public events. As a result, this year we participated in 10 EATRIS proposals, participated in 2 EATRIS initiatives (Patient engagement and the EATRIS Quality Initiative), established 2 public-private collaborations and 2 Spanish health research Institutes have joined EATRIS (IdISSC and IMIB). Remarkably, in the Infraserv calls, in which EATRIS participates (ISIDORe and CANSERV projects), 7 EATRIS Spain institutes are involved offering a total of 15 services. Another important aspect has been fostering the knowledge of the biomedical Research Infrastructures to the general public. To that end, we organised an informative session together with ECRIN, ELIXIR, EU-OPENSCREEN, INFRAFRONITER and INSTRUCT with more than 500 registered attendees from both academia and industry. Given that this initiative was a success, this year we are organising other similar events. Finally, thanks to the EATRIS Node Reward Framework received in 2021, we are developing activities to help researchers engaging with patients.

Board of Governors representative

Pilar Gayoso

National Director

Joan Comella

National Coordinator

Marta Marin

EATRIS in Spain consists of 23 institutes:

- AUGUST PI I SUNYER BIOMEDICAL RESEARCH INSTITUTE (IDIBAPS)
- BELLVITGE BIOMEDICAL RESEARCH INSTITUTE (IDIBELL)
- BIODONOSTIA HEALTH RESEARCH INSTITUTE
- FIBICO, FOUNDATION FOR BIOMEDICAL RESEARCH OF CORDOBA (IMIBIC)
- FUNDACION JIMENEZ DIAZ INSTITUTE FOR MEDICAL RESEARCH (IIS-FJD)
- GERMANS TRIAS I PUJOL FOUNDATION (IGTP)
- HEALTH RESEARCH INSTITUTE OF SANTIAGO DE COMPOSTELA (IDIS)
- HOSPITAL CLINICO SAN CARLOS (IDISSC)
- HOSPITAL DE LA SANTA CREU I SAN PAU (IR-HSCSP)
- HOSPITAL LA FE (IIS-LA FE)
- HOSPITAL LA PAZ INSTITUTE FOR HEALTH RESEARCH (IDIPAZ)
- MALAGA HEALTH RESEARCH INSTITUTE (IBIMA)
- INCLIVA
- INSTITUTE OF BIOMEDICINE OF SEVILLE (IBIS)
- INSTITUTO RAMÓN Y CAJAL (IRYCIS)
- UNIVERSITY HOSPITAL LA PRINCESA (IIS-IP)
- VALL D'HEBRON RESEARCH INSTITUTE (VHIR)
- BIOMEDICAL RESEARCH INSTITUTE OF MURCIA (IMIB)
- INSTITUTO DE INVESTIGACIÓN BIOSANITARIA (IBS GRANADA)
- INSTITUT HOSPITAL DEL MAR D'INVESTIGACIONS MÈDIQUES (IMIM)
- INSTITUTO DE INVESTIGACIÓN MARQUÉS DE VALDECILLA (IDIVAL)
- INSTITUT DE RECERCA BIOMÈDICA DE LLEIDA FUNDACIÓ DR. PIFARRÉ (IRBLLEIDA)
- INSTITUTO DE INVESTIGACIÓN SANITARIA ARAGÓN (IISARAGON)

EATRIS Spain was involved in the following 3 funding proposals in 2021, totalling over €2,733,660:

- ISIDORe
- CANSERV
- REMEDI4ALL

EATRIS Spain is also involved in the following 4 ongoing projects:

- EJP RD
- EATRIS-PLUS
- EOSC-LIFE
- EU-PEARL

EATRIS Spain took part in 21 education and training activities in 2021 involving 297 participants.

#EATRIS_ES

Sweden

This year the Swedish node welcomed a new National Director, Professor Pontus Aspenström. He has extensive experience in the field of cancer research/cell biology and has worked several years at the Ludwig Institute for Cancer Research, Karolinska Institute and Uppsala University. The focus this year has been to secure a more long-term financing of EATRIS membership to further strengthen the Swedish node, identifying national infrastructure calls. The COVID-19 pandemic has had a significant impact on activities and the possibility of new interactions. The node has participated in several digital meetings with academia, industry and has presented EATRIS at Science Parks and Bio clusters.

Board of Governors representative

Maria Nilsson

National Director

Pontus Aspenström

National Coordinator

Ulrika Bäckman

EATRIS in Sweden consists of 13 institutes:

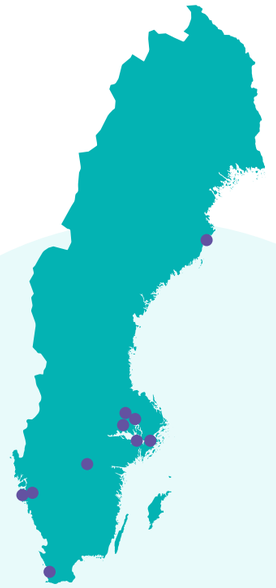
- CHALMERS UNIVERSITY OF TECHNOLOGY
- SWEDISH NATIONAL INFRASTRUCTURE FOR BIOLOGICAL MASS SPECTROMETRY
- KAROLINSKA INSTITUTE
- KTH ROYAL INSTITUTE OF TECHNOLOGY
- LINKÖPING UNIVERSITY
- LUND UNIVERSITY
- STOCKHOLM UNIVERSITY
- TESTA CENTER
- UMEÅ UNIVERSITY
- UNIVERSITY OF GOTHENBURG
- UPPSALA UNIVERSITY
- UPPSALA CLINICAL RESEARCH CENTER
- UPPSALA UNIVERSITY HOSPITAL

EATRIS Sweden was involved in the following 3 funding proposals in 2021, totalling over €2,641,212:

- BY-COVID
- CANSERV
- REMEDI4ALL

EATRIS Sweden is also involved in the EATRIS-Plus project.

EATRIS Sweden took part in 16 education and training activities in 2021 involving 57 participants.



#EATRIS_SE

The Netherlands

Health-RI is a joint initiative of the Dutch nodes of EATRIS, ELIXIR, and BBMRI, the Dutch university medical centers, together with a broad coalition of other organisations. Health-RI builds a national Health Research Infrastructure for optimal access to knowledge, tools, facilities, health data and samples for health research and innovation. Health-RI acts as the Dutch EATRIS node. In 2021, Health-RI attracted €69m government funding from the national economic stimulation funds ("Groeifonds"), which includes funding for a National Coordinator for EATRIS-NL and to strengthen the collaboration with other national nodes such as BBMRI-NL and ELIXIR-NL. The launch of the Health-RI Groeifinds project was celebrated in a kick-off event called "Geared up to accelerate" in October 2021. The event, held in person in Utrecht, attracted 400 participants despite the COVID-19 pandemic. A transition plan has been drafted to implement the operations of the Dutch EATRIS node under the umbrella of Health-RI. The Dutch National COVID-19 portal further expanded in collaboration with ZonMw and the Dutch academic medical centers. EATRIS-NL participates in a new program called "Future Affordable and Sustainable Therapies", or "FAST", launched by ZonMw and the ministries of health and economics affairs. Several EATRIS-NL institutes participate in EATRIS projects, for example in the area of vaccines. EATRIS-NL leads the Imaging & Tracer platform, which has led to three working groups with strong NL participation: Tracer lead factory, cell labeling and imaging, and radiomics. Finally, in April 2021, EATRIS-NL hosted the the X-Omics Festival with input from the EATRIS-Plus project team.

Board of Governors representative

Saco de Visser

National Director

Gerrit Meijer

EATRIS in the Netherlands consists of 15 institutes:

- AMSTERDAM UMC - ACADEMIC MEDICAL CENTRE (AMC)
- AMSTERDAM UMC - VU MEDICAL CENTER (VUMC)
- BIOMEDICAL PRIMATE RESEARCH CENTRE (BPRC)
- ERASMUS UNIVERSITY MEDICAL CENTRE
- INTRAVACC
- LEIDEN UNIVERSITY MEDICAL CENTRE (LUMC)
- MAASTRICHT UNIVERSITY MEDICAL CENTER (MUMC)
- NETHERLANDS CANCER INSTITUTE
- TNO
- UNIVERSITY MEDICAL CENTER ST RADBOUD (UMCN)
- UNIVERSITY MEDICAL CENTER UTRECHT (UMCU)
- UNIVERSITY MEDICAL CENTRE GRONINGEN (UMCG)
- UNIVERSITY OF TECHNOLOGY EINDHOVEN (TU/E)
- WAGENINGEN BIOVETERINARY RESEARCH
- RADBOUDUMC

EATRIS Netherlands was involved in the following 3 funding proposals in 2021, totalling over €1,228,312:

- BY-COVID
- EOSC4CANCER
- REMEDI4ALL

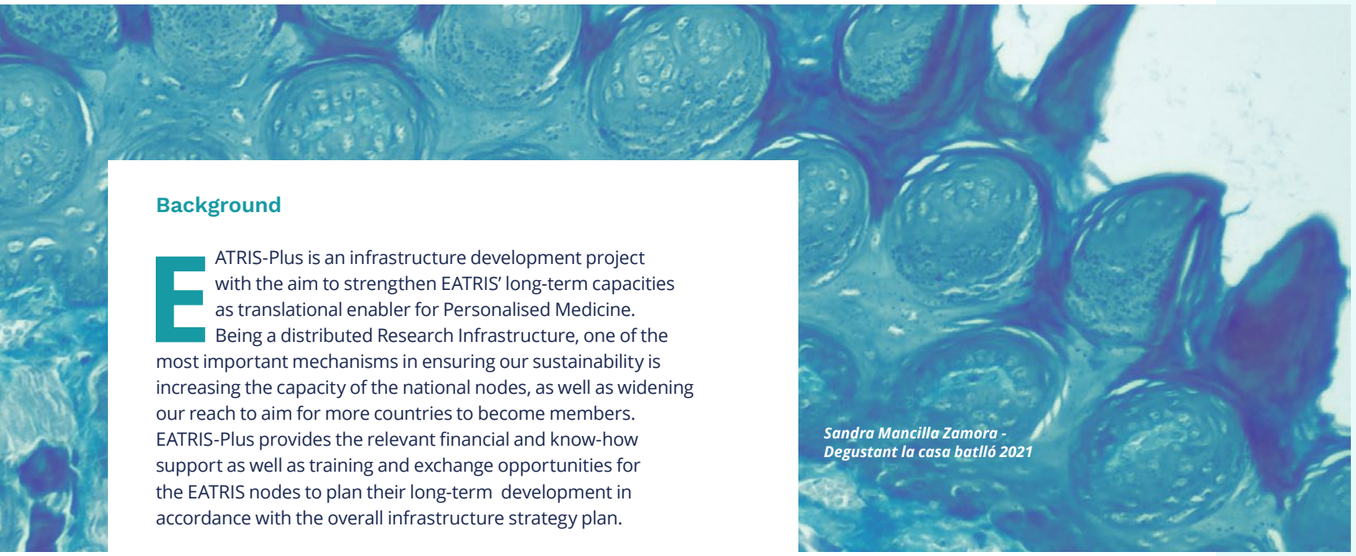
#EATRIS_NL

EATRIS Netherlands is also involved in the following 6 ongoing projects:

- ADVANCE (*SME INVOLVED, NOT ACADEMIC SITE)
- EOSC-LIFE
- EATRIS-PLUS
- EU-PEARL
- EPND
- TRANSVAC2

EATRIS Netherlands took part in 18 education and training activities in 2021 involving 279 participants.

Node Capacity Building



Sandra Mancilla Zamora - Degustant la casa batlló 2021

Background

EATRIS-Plus is an infrastructure development project with the aim to strengthen EATRIS' long-term capacities as translational enabler for Personalised Medicine. Being a distributed Research Infrastructure, one of the most important mechanisms in ensuring our sustainability is increasing the capacity of the national nodes, as well as widening our reach to aim for more countries to become members. EATRIS-Plus provides the relevant financial and know-how support as well as training and exchange opportunities for the EATRIS nodes to plan their long-term development in accordance with the overall infrastructure strategy plan.

How do we ensure consistent growth?

An ambitious capacity-building programme for all 14 national nodes represented in the project consortium was launched as a first step towards further planning the infrastructure's long-term sustainability. As a starting point a handbook providing guidance and support to nodes' representatives was developed and published, and will be continually updated with input from the nodes.

In order to substantially grow the user base and increase community cohesion, ***empowerment of the nodes and targeted outreach activities at regional and national levels are vital***. Assisting the national nodes in industry outreach, sharing business intelligence and best practices has been a part of regular exchanges of experiences.

In order to stimulate interactions between the nodes and all EATRIS member institutions, a Staff Exchange programme was designed, and is planned for launch in January 2022. One of the main aims of the programme is to foster best practice and knowledge exchange in the areas of infrastructure operations and stakeholder management. The participation of developing nodes will be especially encouraged.

Over the course of 2021, five workshops were organised specially for National Directors and Coordinators. Topics included grant writing, funding strategies, cyber security, patient engagement, and communications. By the end of the EATRIS-Plus project (December 2023) at least five more workshops are envisioned starting with a deep dive into long-term sustainability planning in Spring 2022.

Looking ahead

As we continue to build the translational medicine ecosystem in Europe, strengthening our national communities has never been more vital. The pandemic has presented a challenge that we have turned into an opportunity by increasing the frequency of interactions in a virtual format. In addition, we are planning activities to solidify a training network among our nodes and institutes to support the long-term sustainability of our education and training operations. With all other exciting events and initiatives mentioned, the main effort in 2022 will be to support our nodes in developing their sustainability plans forming the long-term development plan of EATRIS.

Institutions Overview

● Platform participation
● Platform participation new institutions in 2021

Name	ATMP	Biomarkers	Imaging & Tracing	Small Molecules	Vaccines
BULGARIA					
National Center of Infectious and Parasitic Diseases (NCIPD)					●
Sofia University		●		●	
CZECH REPUBLIC					
Central European Institute of Technologies (CEITEC)		●			
Charles University		●	●		
University of Chemistry and Technology Prague				●	
Institute of Experimental Medicine of the CAS	●				
Institute of Macromolecular Chemistry of the CAS			●	●	
Institute of Microbiology of the CAS					●
Institute of Organic Chemistry and Biochemistry of the CAS				●	
Masaryk University					
Nuclear Physics Institute of the CAS			●		
Palacký University - Institute of Molecular and Translational Medicine (IMTM)		●	●	●	
International Center for Clinical Research of St. Anne's University Hospital Brno	●				
FINLAND					
Finnish Red Cross Blood Service	●	●			
University of Eastern Finland - National Virus Vector Laboratory (NVVL)	●				
University of Helsinki - Institute for Molecular Medicine Finland (FIMM)		●		●	
University of Tampere - Regea Cell and Tissue Center	●				
University of Turku and Turku University Hospital		●	●		
VTT Technical Research Centre of Finland (VTT)		●			
FRANCE					
NeurATRIS-Albert Chevalier-Henri Mondor Hospital	●		●	●	
NeurATRIS-Biotherapies Institute for Rare Diseases (BIRD)	●	●		●	
NeurATRIS-Brain & Spine institute IHU-A-ICM		●	●	●	
NeurATRIS-French Alternative Energies and Atomic Energy Commission (CEA)	●	●	●	●	
NeurATRIS-Neurosciences Bicêtre - Paris Sud (NBPS)	●		●		
ITALY					
Centro di Riferimento Oncologico di Aviano (CRO Aviano)	●				
Centro Medicina Rigenerativa (CMR)				●	
CNCCS - IRBM Science Park		●			
Fondazione IRCCS CRIBT	●	●	●	●	
Fondazione IRCCS Fondazione Pascale		●			
Fondazione IRCCS Giovanni Paolo II		●			
Fondazione IRCCS Istituto Nazionale dei Tumori (INT-Milan)		●	●		
Fondazione IRCCS Ospedale Pediatrico Bambino Gesù	●				
Fondazione IRCCS SDN per la Ricerca e l'Alta Formazione in Diagnostica Nucleare			●		
Fondazione Policlinico Universitario A. Gemelli IRCCS		●			
IDI-Fondazione IRCCS Luigi Maria Monti	●				
IRCCS Foundation Santa Lucia		●		●	

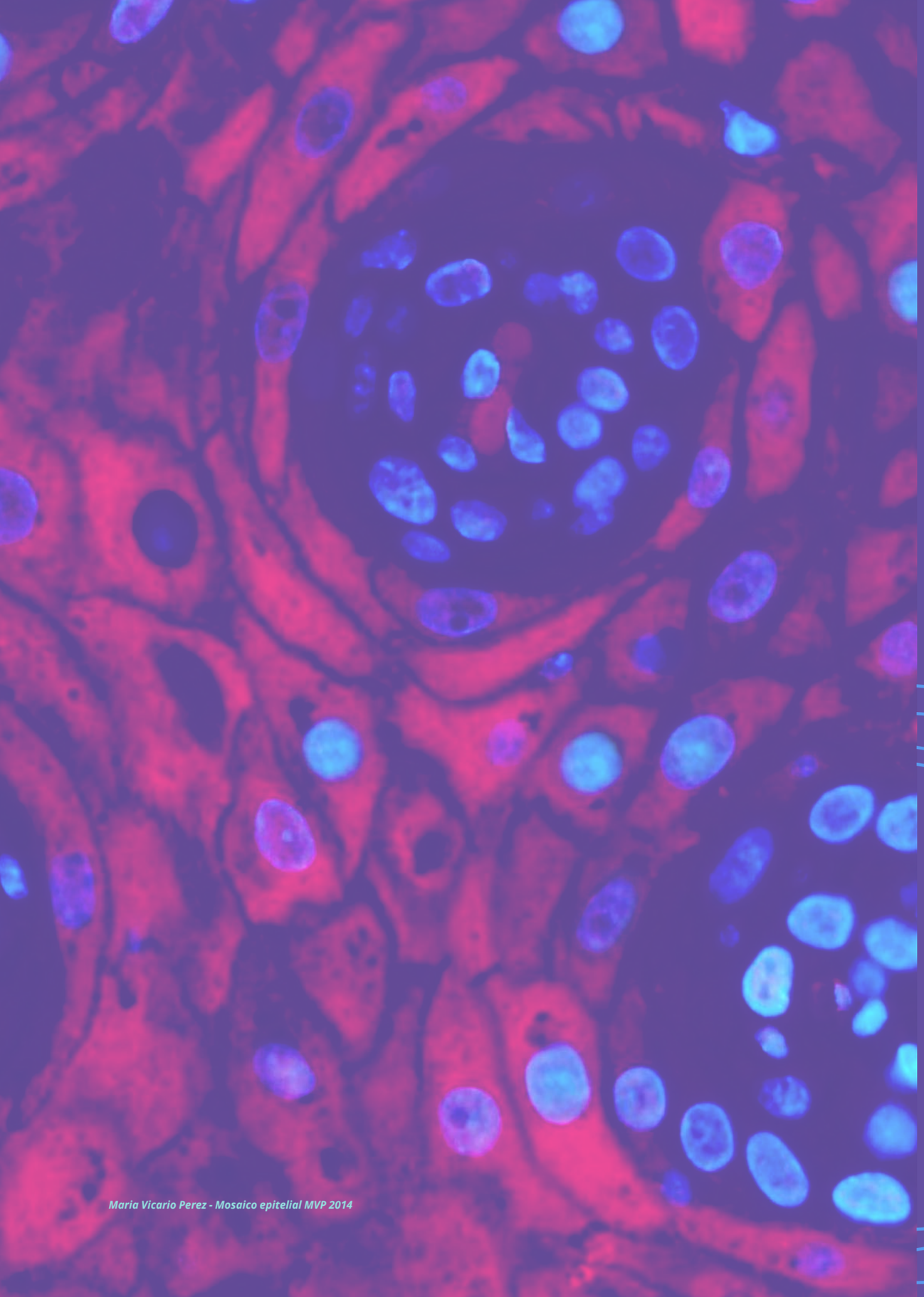
- Platform participation
- Platform participation new institutions in 2021

Name	ATMP	Biomarkers	Imaging & Tracing	Small Molecules	Vaccines
RCCS Istituto Giannina Gaslini (IGG)					
IRCCS Istituto Ortopedico Galeazzi	●	●			
ISMETT	●	●			●
Istituti Fisioterapici Ospitalieri - Istituto Dermatologico “San Gallicano”					●
Istituti Fisioterapici Ospitalieri - Regina Elena Tumor research	●			●	
Istituto Romagnolo per lo Studio dei Tumori "Dino Amadori" (IRST) - IRCCS	●	●		●	
Istituto Superiore di Sanità (ISS)	●	●	●	●	●
Mario Negri Institute for Pharmacological Research				●	
National Institute for Infectious Diseases Lazzaro Spallanzani		●			●
Rizzoli Orthopedic Institute (IOR)	●	●	●		
Scientific Institute San Raffaele (HSR)	●		●		
LUXEMBOURG					
Integrated Biobank of Luxembourg (IBBL, LIH)	●	●			●
Luxembourg Center of System Biomedicine		●		●	
NETHERLANDS					
Amsterdam UMC - Academic Medical Centre (AMC)					
Amsterdam UMC - VU Medical Center (VUmc)	●	●	●		●
Biomedical Primate Research Centre (BPRC)					●
Erasmus University Medical Centre		●	●		
Intravacc					●
Leiden University Medical Centre (LUMC)	●		●	●	●
Maastricht University Medical Center (MUMC)			●		
Netherlands Cancer Institute		●			
TNO		●	●		
University Medical Center St Radboud (UMCN)	●	●	●		●
University Medical Center Utrecht (UMCU)		●	●		
University Medical Centre Groningen (UMCG)		●	●		
University of Technology Eindhoven (TU/e)	●				
Wageningen Bioveterinary Research					●
NORWAY					
Norwegian University of Science and Technology (NTNU)		●	●	●	
University of Bergen (UiB) and Haukeland University Hospital		●	●	●	●
University of Oslo (UiO) and Oslo University Hospital (OUH)	●	●	●	●	●
University of Tromsø (UiT) and University Hospital North Norway		●	●	●	
PORTUGAL					
3B’s Research Group, University of Minho	●				
Association for Innovation and Biomedical Research on Light and Image (AIBILI)		●	●		
Center for Neuroscience and Cell Biology; Coimbra University Hospital	●	●			
Champalimaud Foundation		●	●		
Coimbra Institute for Biomedical Imaging and Translational Research (CIBIT)			●		
Institute for Bioengineering and Biosciences - Stem Cell Engineering Research Group (iBB - SCERG)	●				
Institute of Biomedicine (IBIMED)		●			
Instituto de Biologia Experimental e Tecnológica (IBET)	●				●
Instituto de Investigação e Inovação em Saúde (i3S)		●	●	●	●
Instituto de Medicina Molecular João Lobo Antunes	●	●		●	●

- Platform participation
- Platform participation new institutions in 2021

Name	ATMP	Biomarkers	Imaging & Tracing	Small Molecules	Vaccines
Instituto Português de Oncologia do Porto Francisco Gentil (IPO-Porto)		●			
Life and Health Sciences Research Institute / Clinical Academic Centre - Braga	●	●	●		
NOVA Medical School, Unicersidade NOVA de Lisboa (NMS, NOVA)				●	
SLOVENIA					
Maribor University		●			
University of Ljubljana				●	
SPAIN					
August Pi i Sunyer Biomedical Research institute (IDIBAPS)		●	●		
Bellvitge Biomedical Research Institute (IDIBELL)	●	●			
BioDonostia Health Research Institute	●	●			●
Biomedical Research Institute of Murcia (IMIB)	●	●	●		
FIBICO, Foundation for Biomedical Research of Cordoba (IMIBIC)	●	●			
Fundación Jiménez Díaz Institute for Medical Research (IIS-FJD)		●			
Germans Trias i Pujol Foundation (IGTP)		●	●		
Health Research Institute of Santiago de Compostela (IDIS)		●	●		
Hospital Clinico San Carlos (IdISSC)		●		●	●
Hospital de la Santa Creu i Sant Pau (IR-HSCSP)	●	●	●		
Hospital La Fe (IIS-La Fe)	●	●	●		
Hospital La Paz Institute for Health Research (IdiPAZ)	●	●			
INCLIVA	●	●	●	●	
Insitute of Biomedicine of Seville (IBIS)	●	●	●		●
Institut de Recerca Biomèdica de Lleida Fundació Dr. Pifarré (IRBLLEIDA)		●	●		
Institut Hospital del mar d’investigacions mèdiques (IMIM)		●			
Instituto de Investigación Biosanitaria (IBS GRANADA)	●	●			
Instituto de Investigación Marqués de Valdecilla (IDIVAL)		●	●		
Instituto de Investigación Sanitaria Aragón (IISAragon)		●	●		●
Instituto Ramón y Cajal (IRYCIS)		●			●
Malaga Health Research Institute (IBIMA)	●	●			
University Hospital La Princesa (IIS-IP)	●	●	●		
Vall d’Hebron Research Institute (VHIR)	●	●	●	●	
SWEDEN					
Chalmers University of Technology		●		●	
Infrastructure for biological mass spectrometry (BioMS)		●			
Karolinska Institute					
KTH Royal Institute of Technology		●			
Linköping University					
Lund University		●	●	●	
Stockholm University			●		
Testa Center	●				●
Umeå University					
University of Gothenburg				●	
Uppsala University and Uppsala University Hospital		●	●	●	

platforms



Maria Vicario Perez - Mosaico epitelial MVP 2014

platform updates

ATMP

Chairs:
Giuliana Ferrari (OSR, Italy),
Miguel Chillon Rodriguez
(VHIR, Spain)

Platform Coordinator:
David Morrow (Senior Scientific Programme Manager, EATRIS)

In 2021, the EATRIS ATMP platform welcomed the Biomedical Research Institute of Murcia (IMIB) from Spain to make up the now 47 institutions working in innovative research in ATMPs.

In 2021 the continued implementation of the Platform's Scientific Strategy was central to our operations. Aligning scientific strategy with funding opportunities was key, with the resubmission in October of the COST action project coordinated by IDIBELL, titled the "Generation of Human IPSCs from Haplo-selected Cord blood samples," involving 10 EATRIS ATMP Institutions in October. This restructured project was developed during an EATRIS organised IPSC workshop in September which was attended by ATMP researchers, regulators and Stem Cell Bank Directors from across the EU.

Proposals supporting the development of next generation gene-editing technologies (EDITSCD) and HLA-iPSC therapy approaches for heart failure (HEAL) were developed, and submitted in September, where both projects consisted of EATRIS sites, which would be granted funding in early 2022. The CanSERV project was submitted in August and co-developed by EATRIS, with a dedicated work package containing over 17 innovative services from 8 EATRIS ATMP institutions to facilitate novel advanced therapy development for Cancer.

Educating the next generation of ATMP experts remained a priority for the ATMP Platform with the EATRIS flagship project ADVANCE receiving over 500 registrations from 35 countries for the online course.

In September, EATRIS held a joint webinar with the Health and Environmental Sciences Institute (HESI) involving speakers from the FDA in the US, and the Medicines Evaluation Board in the Netherlands to discuss the regulatory strategy of utilising imaging modalities to track novel cell therapies. This initiative, which involves an ongoing collaboration with the EATRIS Imaging and Tracing Platform, remains a key cross platform scientific focus area with a dedicated working group now in place, and a first EATRIS workshop developed throughout 2021 on cell tracking will be held in early 2022.

The EMA and EATRIS held their first combined webinar on navigating the regulatory requirements for ATMPs in November through the ADVANCE project, with over 300 participants. EATRIS continued its presence at international ATMP conferences by joining the Advisory Board of the Advanced Therapies Congress. EATRIS joined panel discussions and presented keynote presentations on immune monitoring technologies to advance cell therapy development in the May and September conferences. A report from one roundtable at the September meeting with CATAPULT and the UK Bioindustry Association tilted "How to tackle the skill shortages in the ATMP sector", was published online in October.

A highlight of the year would be welcoming the new ATMP Chair to EATRIS, Giuliana Ferrari, the Head of Gene transfer into Stem Cells Unit, HSR-TIGET, IRCCS Ospedale San Raffaele. With Giuliana's expertise in bringing gene therapy products from the bench to the clinic, the ATMP Platform enters 2022 with great enthusiasm and continued growth in its high value translational and educational output in this important field.

Biomarkers

Chairs:
Alain van Gool (Radboud, The Netherlands),
Andreas Scherer (FIMM, Finland),
Laura García Bermejo (IRYCIS, Spain)

Platform Coordinator:
Emanuela Oldoni (Scientific Programme Manager, EATRIS)

In 2021 the EATRIS Biomarker platform welcomed four new institutions: the Fondazione Policlinico Universitario A. Gemelli IRCCS, Sofia University, Hospital Clinic San Carlos (IdISSC) and Biomedical Research Institute of Murcia (IMIB). This brings the number of Biomarker institutions to 76.

The Biomarkers platform strengthened its key focus on personalised medicine (PM) reinforcing its participation in ongoing European projects (EATRIS-Plus, PERMIT, B1MG), developing cross-platforms activities, and joining new consortia.

In Q2 EATRIS became a full partner in the Fast Track Programme of Codex4SMEs project. In this context, EATRIS will offer tailor-made support services in various research aspects of the diagnostics (Dx) product development to address the main challenges faced by SMEs developing Dx. The final aim is to support SMEs to further expedite the time-to-market of novel diagnostic solutions.

During Q3, the CanSERV project proposal was developed. The project, starting in 2022, aims to build a comprehensive portfolio of cutting-edge research services for the EU cancer research community, enable innovative R&D projects and foster PM for patients' benefit across Europe. EATRIS is leader of WP3 focused on Biomarkers research, development and validation.

The Biomarkers Platform strategy 2021 concentrated on artificial intelligence (AI) approaches to integrate multiple sources of biomarkers data for enabling the translation of patient-specific features into tailored clinical applications as well as for assisting clinical decision-making. This area of the Biomarkers' scientific agenda has been aligned with the overarching EATRIS Data strategy developed by the new Data Director and the strategy of the other scientific platforms. During the year, a mapping of AI and bioinformatics capacities within the Biomarkers Platform was conducted and field experts identified.

Finally, different cross-platforms community engagement opportunities took place in 2021. In January 2021, EATRIS held a symposium titled "How the emerging role of AI in translational medicine can jump-start a new era in medical care". One of the sessions focused on PM and saw the participation of various institutions belonging to the Biomarkers Platform. In November 2021, the EATRIS Portuguese and Spanish nodes hosted a webinar on "Biomarker Success Stories: from bench to the clinical practice. Barriers, tips and tricks."

Imaging and Tracing

Chairs:
Albert Windhorst (AmsterdamUMC/ VUmc, The Netherlands)

Platform Coordinator:
Sara Zullino (Scientific & SME Outreach Manager, EATRIS)

The Imaging and Tracing platform welcomed two new institutions in 2021: Fondazione Policlinico Universitario A. Gemelli IRCCS (Italy) and Biomedical Research Institute of Murcia – IMIB (Spain) bringing the total number of Platform institutions to 51 and broadening the EATRIS portfolio of infrastructure and expertise with advanced equipment and experts dedicated to imaging, radiology and radiation oncology.

In February, EATRIS participated in the HYBRID imaging consortium Innovation Fair, with a lively exchange between early stage researchers showcasing their projects with various translational hybrid imaging modalities. This was followed by a mutual exchange with the EATRIS community during an EATx webinar in March.

During the April 2021 Virtual Platform Meeting, Platform members discussed key themes and strategic actions for the Platform.

Three Working Groups were formed according to the interest of the Platform members: Radiomics (Chair: Luca Boldrini, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, IT), Cell Tracking (Chair: Wolfgang Weber, Technical University Munich, DE, partner in EATRIS+), and EU Tracers Factory (Chair: Nadja van Camp, Neuratris-French Alternative Energies and Atomic Energy Commission (CEA), Fontenay-aux-Roses, FR). These Working Groups each initiated the process to define their mission and goals in order to create an internal scientific agenda, establish the modus operandi (e.g. funding opportunities, sharing expertise and training, knowledge exchange, best practices) and explore potential cross-platform activities.

In June 2021, CERN (The European Organisation for Nuclear Research) and EATRIS jointly hosted a workshop entitled "From CERN technologies to medical imaging at EATRIS". CERN presented the CAFEIN project that aims to develop AI tools for improving clinical decision-making processes. This event was a great opportunity for EATRIS internal members to explore potential collaborative partnership opportunities.

In September 2021, Sara Zullino became the new Scientific Programme Manager of the Imaging and Tracing Platform following the accomplishments of Martin de Kort, who maintains his role of Senior Scientific Programme Manager of the Small Molecules Platform.

Small Molecules

Chairs:
Mario Salmona (Mario Negri Institution, Italy),
Alfredo Budillon (Istituto Nazionale Tumori- IRCCS G. Pascale, Italy)

Platform Coordinator:
Martin de Kort (Senior Scientific Programme Manager, EATRIS)

This year the Small Molecules Platform saw the arrival of three new institutions: Sofia University, Bulgaria; Hospital Clinic San Carlos (IdISSC), Spain; and Fondazione Policlinico Universitario A. Gemelli IRCCS, Italy. This brings the total number of institutions participating in the platform to 34.

The scientific agenda matured further around three themes: drug repurposing, artificial intelligence (AI) and predictive translational models. In January 2021, during the online EATRIS symposium "How the emerging role of AI in translational medicine can jump-start a new era in medical care" a session was dedicated to map the interests, capacities and expertise among the EATRIS scientific community around AI applications and drug repurposing. With a keynote contribution from Dompé Farmaceutici, that has several EATRIS collaborations underway (e.g. initiated through COVID-19 Forum), several machine learning and deep learning approaches were showcased as a tool to expedite therapeutic development through target identification, validation and (in silico) screening in the context of drug repurposing.

In June, a Platform meeting was held to re-connect with the members of the community and review the scientific agenda and share the strategic vision for the platform. Scientific contributions with a breadth of scientific scope showcased bench to bedside approaches, highlighted needs and capacity for ADME/PK studies in academic drug development, microfluidics to support nanoparticles and predictive models for precision medicine in oncology. During the meeting, a call for demonstrator projects in drug repurposing was announced to the platform that was answered with 35 high quality proposals, of which four were selected for the development of a solid plan to create a sustainable drug repurposing platform in Europe. In October, drug repurposing as a main pillar was materialised by the launch of NewFound, a global drug repurposing alliance with NIH-NCATS, FioCruz and OSPF.

Throughout the year, the small molecules platform actively engaged with the PERMIT project, as a voice to develop an agenda in personalised medicine. Further development and implementation of such agenda is anticipated to bring several cross-platform interactions, notably exploiting predictive models, 3Rs approaches, exchange of best practice and application of the right (imaging) biomarkers at the right time in projects serving SME, biotech and academic researchers in developing their projects.

Vaccine, Inflammation and Immune Monitoring

Chairs:
Jan Langermans (BPRC, The Netherlands),
Lucia Gabriele (ISS, Italy)

Platform Coordinator:
David Morrow (Senior Scientific Programme Manager, EATRIS)

The VIIM Platform was delighted to welcome the Hospital Clínico San Carlos (Spain) and the Policlinico Gemelli (Italy) to the Platform in 2021 bringing the number of institutions to 25.

A call for expertise was launched in April for access to cutting edge immune monitoring and profiling services. From this call to action, 47 services from 8 EATRIS institutions were selected to be included in the ISIDORe proposal which was granted funding in August. These innovative immune monitoring and profiling services of the VIIM Platform will be a core offering of the ISIDORe project for the development of diagnostics, therapeutics and vaccines in the face of future infectious disease pandemics. The first Transnational Access (TNA) calls are expected to be launched in the first half of 2022.

Through the ongoing TRANSVAC project, EATRIS held its first Vaccine regulatory workshop in June which comprised of nine expert lectures from six regulatory experts. 27 participants joined this virtual event with ten representatives from the Coalition for Epidemic Preparedness Innovations (CEPI).

Two TNA projects for regulatory support for vaccine candidates for COVID-19 and Malaria were facilitated by EATRIS during the year as we continued to offer the vaccine developer the necessary regulatory support to further advance their novel vaccine candidates towards the clinic.

The strength of the VIIM Platform continued to be an essential part of the EATRIS COVID-19 Research Forum in 2021 which served as a pool of expertise and available technologies readily available for new vaccine development projects around COVID-19 initiated throughout the year.

The EATRIS COVID-19 Research Forum

Fast and Effective Support for COVID-19 Researchers

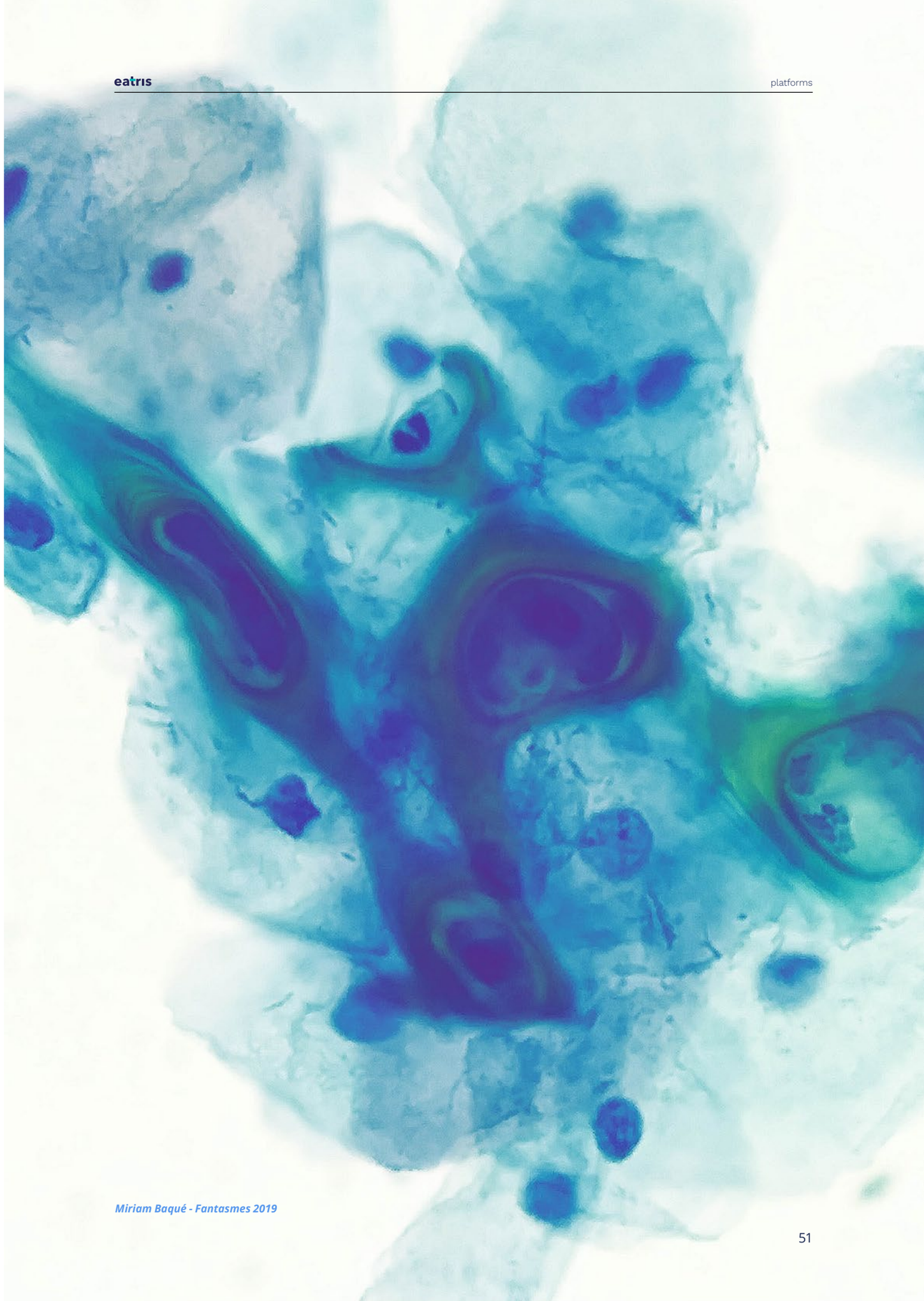
Maintaining, growing and utilising the EATRIS COVID-19 Research Forum remained a priority in 2021 as the platform continued to offer value to the research community. The aim of this forum is simple: to support researchers who require assistance in their COVID-19 vaccine, therapeutic or diagnostic development to the best resources within the EATRIS network. As the list of resources and expertise in the forum grew throughout the year, COVID-19 research service requests including the need for specific expertise and services from academia, industry or governmental groups related to COVID-19, were matched within this group in less than 48 hours.

By the end of 2021, the EATRIS COVID-19 Research Forum consisted of over 90 active researchers across 43 EATRIS institutions from 14 EU countries. Thirty-three projects were matched within the forum by the end of the year, including 13 industry, 18 academic and 2 governmental requests. These requests ranged from acquiring access to challenge models for SARS-COV-2 such as mouse or ferret model, mechanism of actions studies for repurposing drugs, diagnostic kit validations, and the need to find the right partners and expertise for funding applications. The value of these projects since the forum launch has been €2.3 million, with successful project funding totaling €1.8 million by end of 2021.

Although similar supportive initiatives can be found across different networks and infrastructures, the simplicity and flexibility of this forum, including a willingness to support each other in a fast and efficient manner, continues to be a hallmark of the success of this programme and continues to be so moving forward.

Looking ahead, we foresee the EATRIS COVID-19 Research Forum continuing to grow and be a critical offering of EATRIS to the research community in and out of pandemic times. New variants will drive the need to utilise the world class expertise within this forum to better support vaccine and therapies to fight the new challenges that lie ahead.

With the approval of funding for the ISIDORe project in 2021, where 10 EATRIS sites secured funding to provide innovative immune profiling and immune monitoring services, EATRIS institutions are not only providing these services to the research community, they can now also apply for services to further their own vaccine and therapeutic development programmes.



Miriam Baqué - Fantasmes 2019

featured publications

The SEQC2 epigenomics quality control (EpiQC) study

Key Messages:

In this paper, EATRIS institutions from Finland, Sweden and Spain have contributed to a new multinational publication in Genome Biology called: “The SEQC2 epigenomics quality control (EpiQC) study”. The paper, part of the EATRIS Quality initiative (EQI), presents a multi-platform assessment and cross-validated resource for epigenetics research from the FDA’s Epigenomics Quality Control Group. The data can be used to guide the use of DNA reference materials in epigenomics research, as well as provide best practices for experimental design in future studies. By leveraging human cell lines that are designated as publicly available reference materials, the study can be used as a baseline to advance epigenomics research.

Summary:

Methylation can change the activity of a DNA segment without changing the sequence and plays a key role in the regulation of gene expression, disease onset and progression, and cellular development. Over the past year, the development of novel epigenomic techniques has led to a better understanding of how the epigenome changes across individuals and health states. However, some challenges need to be tackled to reach more robust and reliable results in the field. Among them, there is a need to establish definitive standards and benchmarks representative of the methylome.

Researchers from the FDA’s Epigenomics Quality Control Group in this paper tackle this issue by presenting a multi-platform assessment and cross-validated resource for epigenetics research. As they report in Genome Biology, the group generated DNA methylation data for all seven Genome in a Bottle Consortium (GIAB) reference cell lines using three whole-genome bisulphite sequencing approaches, oxidative bisulphite sequencing, an enzymatic deamination method, targeted methylation sequencing, single-molecule long read nanopore sequencing, and methylation arrays. In addition, they perform a comparative analysis of targeted and genome-wide methylation protocols, to serve as a comprehensive resource for epigenetics research. The researchers note that the choice of library preparation approach and algorithmic tools can affect the performance of the approaches and they characterise the reproducibility and challenges of methylation estimation across the genome. This multinational collaborative work constitutes a precious benchmarking resource and a reference point for future epigenetic studies and it is a significant contribution in the epigenomic field.

Citation:

Foox, J., et al. (2021). The SEQC2 epigenomics quality control (EpiQC) study. Genome Biology, Volume 22, Article number 332. DOI: 10.1186/s13059-021-02529-2

Mapping the human genetic architecture of COVID-19

Key messages:

A global network of researchers, including from EATRIS institutions, performed a genomic study that provides valuable insight into the interplay of biology and epidemiology on COVID-19. A meta-analysis of nearly 50,000 patients from 46 studies spanning 19 countries was conducted and 13 loci associated with COVID-19 susceptibility or severity were identified through GWAS analysis. In addition, researchers found evidence of a causal relationship between both BMI and smoking and COID-19 severity through Mendelian randomisation analyses. The study represents a landmark international collaboration for much-needed and timely host genomics research during a pandemic and has the potential for a direct public health policy impact.

Summary:

The COVID-19 Host Genetics Initiative (COVID-19 HGI) (https://www.covid19hg.org/) is an international, open-science collaboration to share scientific methods and resources with research groups across the world with the goal to robustly map the host genetic determinants of SARS-CoV-2 infection and the severity of the resulting COVID-19 disease. In this study they present a meta-analysis of 46 studies from 19 countries for genetic factors contributing to COVID-19 susceptibility and severity.

COVID-19 HGI reports 13 genome-wide significant loci that are associated with SARS-CoV-2 infection or severe manifestations of COVID-19. Some of these variants were already known: for instance, the relationship with blood type, with new evidence supporting the protective effect of type 0; or a variant in the TRK2 gene, known to protect against autoimmune disease, which appears more often in patients suffering critical illness and increased hospitalisation risk. Among the newly discovered variants, the severe COVID-linked version of the FOXP4 gene, linked to lung cancer and interstitial lung disease, appears more frequently in participants with East Asian ancestry (32%) and Latin Americans (20%) than in people of European ancestry (2-3%).

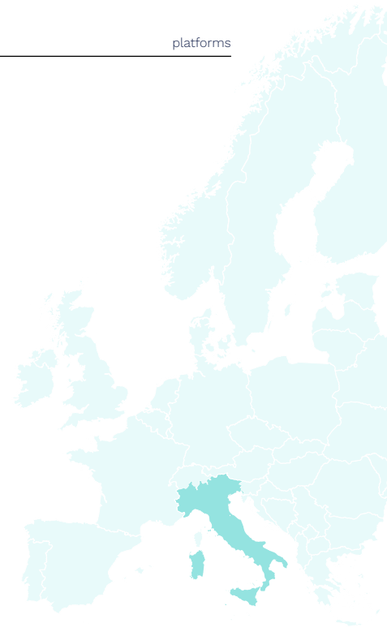
In addition, Mendelian randomisation study design offers additional insights into other benefits of host genomics research in COVID-19, such as a causal association between high BMI and smoking with disease severity.

This study is important not only because genetic associations provide the opportunity to better understand the biology of COVID-19 and to predict outcomes as well as a window on modifiable risk factors, but also because genetic researchers across the world worked together sharing expertise, capacities and data with a common aim.

Citation:

COVID-19 Host Genetics Initiative (2021). Mapping the human genetic architecture of COVID-19. Nature 600, 472–477. DOI: 10.1038/s41586-021-03767-x

Exosomes from plasma of neuroblastoma patients contain double stranded DNA reflecting the mutational status of parental tumor cells



Key messages:

In this paper, published in the International Journal of Molecular Science, EATRIS institutions from Italy characterised the biological content of exosomes from plasma of neuroblastoma patients and its potential use as a non-invasive biomarker for screening the somatic mutations present in the parental cells.

Exosomes' isolation from plasma and the easy extraction of their content makes this methodology highly translational and very valuable in the field of neuroblastoma as the tissue biopsies are less available than in other cancers. In addition, the new insights into liquid biopsy given by this study support the implementation and further development of individualised therapeutic strategies.

Summary:

Neuroblastoma is the most common paediatric solid tumour, and accounts for ~15% of childhood cancer-related mortality. Recently, liquid biopsies have been mostly employed in the detection of tumoral biomarkers and the possibility to diagnose and monitor the disease progression through molecules that can be easily isolated from biological fluids represents a particularly important aspect in the paediatric context.

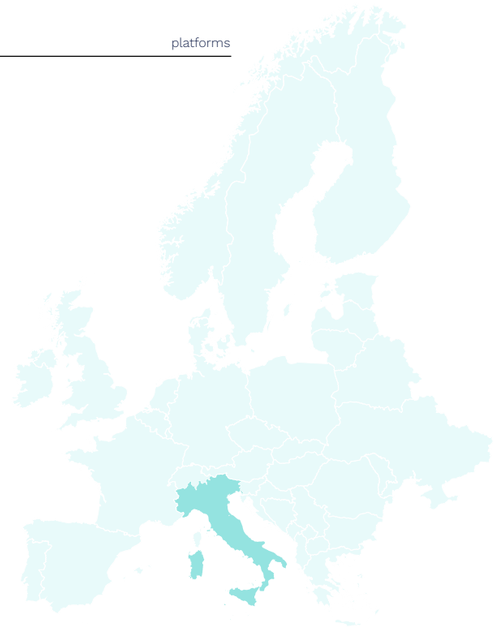
In this study, Italian researchers show that exosomes from plasma of neuroblastoma patients contain double-stranded DNA (dsDNA) reflecting the mutational status of parental tumour cells. After analysing the genomic profile of primary tumour using an array-CGH from neuroblastoma patients, the researchers isolated exosomes from peripheral blood samples and characterised them, demonstrating that are neuroblastoma cell-derived. Then, the exosomes content was analysed by whole-exome sequencing and this showed that exosomes from neuroblastoma patients contain genomic dsDNA covering all chromosomes. The somatic single nucleotide variants identified in the primary tumour DNA and in the DNA from exosomes (exo-DNA) were then evaluated and the group observed that the exo-DNA reflected the mutational status of parental tumour cells.

Despite some limitations, such as the cohort size and the unavailability of primary tumour DNA samples for all the patients analysed, this study is very interesting because it demonstrates once again the relevance of liquid biopsies in the oncology clinical setting and the importance of non-invasive biomarkers.

Citation:

Degli Esposti, C., et al. (2021). Exosomes from Plasma of Neuroblastoma Patients Contain Doublestranded DNA Reflecting the Mutational Status of Parental Tumor Cells. International Journal of Molecular Sciences. 1;22(7): 3667. DOI: 10.3390/ijms22073667.

Tackling the behavior of cancer cells: molecular bases for repurposing antipsychotic drugs in the treatment of glioblastoma



Key messages:

Drug repurposing is a promising approach to generate novel therapeutic interventions for diseases with high unmet medical need in a safe, timely and cost-effective manner. Glioblastoma (GBM) is a devastating disease that lacks effective treatment options and has very poor prognosis. Antipsychotics form a pleiotropic class of drugs that interfere with most, if not all, hallmarks of cancer growth with several pharmacological MoAs. This landmark paper systematically reviews the role of antipsychotics in hindering the growth of GBM cells at the ten hallmarks of cancer and postulates several promising hypotheses as starting points to exploit identified molecular pathways for translation.

Summary:

GBM survival with current treatment (Stupp regimen) is only 15 months with over 50% of non-responders, underscoring the high need for novel therapeutics. Drug repositioning/repurposing is gaining attention as a valid alternative to the standard research process that is extremely long, complex and expensive. For GBM a remarkable role is played by the existing antipsychotic drugs, thanks to some still partially unexplored, interesting features of these agents. Antipsychotic drugs (e.g. dopamine, histamine and 5-HT antagonists) have been described as interfering with many hallmarks of cancer (including e.g. cell proliferation, growth, inflammation, angiogenesis, cell death and energetics).

An analysis is provided of the effects of antipsychotics in oncology and how these drugs can interfere with the hallmarks of cancer in GBM. Notably, additional features are described involving neural stem cells replication, differentiation and migration, neural cells survival and the induction of neurogenesis. GBM tumours are known to display a noticeable heterogeneity in cell composition and possess incredible plasticity, thus switching to a reprogrammed cell population according to the pressures applied, thereby predisposing such cancer to resistance to therapy. Such biological behaviour poses the option of using “dirty drugs”, i.e. compounds provided with pleiotropic and multifaceted MoAs. Overall, according to available evidence, mostly at the preclinical level, it is possible to speculate that repurposing of antipsychotics in GBM therapy might contribute to providing potentially effective and inexpensive therapies for patients with this disease.

Citation:

Persico, M., et al. (2021). Tackling the Behavior of Cancer Cells: Molecular Bases for Repurposing Antipsychotic Drugs in the Treatment of Glioblastoma. Cells. 13;11(2):263. DOI: 10.3390/cells11020263.

In vivo pet imaging of monocytes labeled with [89Zr] Zr-PLGA-NH2 nanoparticles in tumor and staphylococcus aureus infection models

Key messages:

This translational study from the Dutch node aimed to address an important challenge in the field of in vivo tracking of therapeutic cells. This approach requires highly sensitive imaging technologies to track small number of cells using Positron Emission Tomography (PET), particularly for clinical application. The authors developed a Zirconium-89 labelled nanoparticle for PET/MRI tracking of ex vivo labelled monocyte cells and demonstrated the potential of this nanoparticle in vivo in mouse tumour and infection models.

Summary:

Tracking cells with non-invasive imaging methods has the potential to provide important information on immune-cells kinetics. Due to its high sensitivity and clinical applicability, PET is the ideal imaging modality for tracking small number of labelled cells. In this work poly(lactic-co-glycolic acid) nanoparticles (NPs) containing a primary endcap (PLGA-NH2) were labelled with the long-lived positron emitter Zirconium-89. The NPs were characterised for size, polydispersity index, zetapotential and radiolabel retention and used for the ex vivo radiolabelling of a human monocyte cell line (THP-1).

Although the labelling of the THP-1 cells with [89Zr]Zr-PLGA-NH2 NPs was not very efficient, the specific activity of the NPs labelled cells was in range with the previous results from the literature. Importantly, higher specific activity per cell is not desired, due to the associated radiotoxic effect.

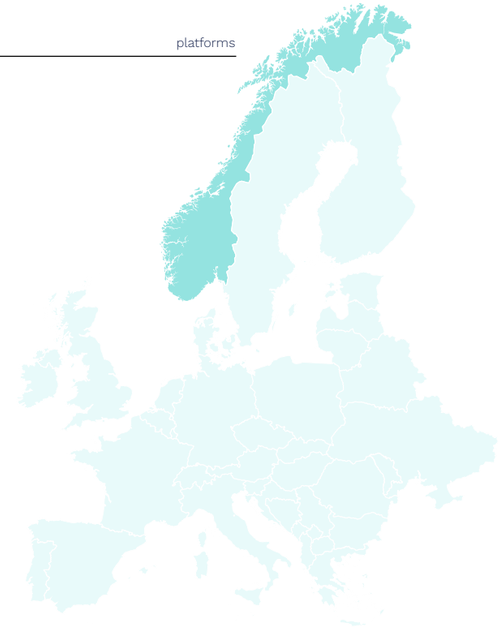
The authors also demonstrated for the first time that these radiolabelled monocyte cells can be used as a tool for cell labelling and sensitive in vivo cell tracking using PET imaging in different disease models. Following intravenous injection, [89Zr]Zr-THP-1 cells specially accumulated in local intramuscular Staphylococcus aureus infection and penetrated into MDA-MB-231 tumour models as proven by a radioactive signal in the inflamed muscle and at the tumour site.

For future clinical applications, however, cell-labelling efficiency can be enhanced by modifying the coating of NPs with cell-specific antibodies, peptides, nanobodies or other targeting agents.

Citation:

Krekorian, M., et al. (2021). In Vivo PET Imaging of Monocytes Labeled with [89Zr]Zr-PLGA-NH2 Nanoparticles in Tumor and Staphylococcus aureus Infection Models. Cancers. 13, 5069. DOI: 10.3390/cancers13205069.

T cells targeted to TdT kill leukemic lymphoblasts while sparing normal lymphocytes



Key message:

The identification of T-cell receptors (TCRs) that efficiently and selectively recognise the intracellular lymphoid-specific enzyme terminal deoxynucleotidyl transferase (TdT) paves the way for targeting of cell-type-specific, intracellular antigens that are transiently expressed during differentiation. TdT-specific TCRs could represent an attractive therapeutic option for patients with B-ALL ineligible for, or relapsing from, CD19-specific CAR T-cell therapy, or for patients with T-ALL relapsing from chemotherapy or allogeneic stem-cell transplantation and for whom no cellular immunotherapy currently exists. This study from the University of Oslo reports that, if successful, the patient groups that might benefit from such T-cell therapy could be expanded.

Summary:

Unlike chimeric antigen receptors, TCRs can recognise intracellular targets presented on human leukocyte antigen (HLA) molecules. Here they demonstrate that T-cells expressing TCRs specific for peptides from the TdT, presented in the context of HLA-A*02:01, specifically eliminate primary acute lymphoblastic leukaemia (ALL) cells of T- and B-cell origin in vitro and in three mouse models of disseminated B-ALL. By contrast, the treatment spares normal peripheral T- and B-cell repertoires and normal myeloid cells in vitro, and in vivo in humanised mice. TdT is an attractive cancer target as it is highly and homogeneously expressed in 80–94% of B- and T-ALLs, but only transiently expressed during normal lymphoid differentiation, limiting on-target toxicity of TdT-specific T-cells. TCR-modified T-cells targeting TdT may be a promising immunotherapy for B-ALL and T-ALL that preserves normal lymphocytes.

Citation:

Ali, M., et al. (2021). T cells targeted to TdT kill leukemic lymphoblasts while sparing normal lymphocytes. Nature Biotechnology. DOI: 10.1038/s41587-021-01089-x.

Combinatorial CAR design improves target restriction

Key messages:

Oslo University Hospital have developed an alternative CD19 CAR, which becomes selective through Igk combination to avoid B cell aplasia. One can predict that this format will be used to combine alternative targets, thus improving selectivity, which should result in increased safety.

Summary:

CAR T cells targeting the B lymphocyte antigen CD19 have led to remarkable clinical results in B cell leukaemia and lymphoma but eliminate all B lineage cells, leading to increased susceptibility to severe infections. As malignant B cells will express either immunoglobulin (Ig) light chain κ or λ, researchers from the Oslo University Hospital designed a second-generation CAR targeting Igκ, IGK CAR. This construct demonstrated high target specificity but displayed reduced efficacy in the presence of serum IgG. Since CD19 CAR is insensitive to serum IgG, they designed various combinatorial CAR constructs to maintain the CD19 CAR T cell efficacy, but with IGK CAR target selectivity. The Kz-19BB design, combining CD19 CAR containing a 4-1BB costimulatory domain with an IGK CAR containing a CD3zeta stimulatory domain, maintained the target specificity of IGK CAR and was resistant to the presence of soluble IgG. Their results demonstrate that a combinatorial CAR approach can improve target selectivity and efficacy.

Citation:

Köksal, H., et al. (2021). Combinatorial CAR design improves target restriction. Journal of Biological Chemistry. 296:100116. DOI: 10.1074/jbc.RA120.016234.

Metabolic perturbation associated with COVID-19 disease severity and SARS-CoV-2 replication

Key messages:

This patient-based multiomics study and in vitro analysis from the Karolinska Institute emphasises the need to understand the host metabolic reprogramming in response to acute SARS-CoV-2 infection. Among other factors, the role of carbohydrate and amino acid transporters, mainly in the monocytic–macrophage lineages, under the altered central carbon metabolism regulated by AKT/mTOR/HIF-1 signaling may potentially define disease severity. The metabolic alteration in glucose, mannose, lactate, pyruvate, and glutamate levels in severe COVID-19 cases needs further clinical considerations. Changes in these metabolites might have a sustained effect on insulin resistance, type 2 diabetes, neurocognitive impairments, and multiorgan failure, which is already reported in COVID-19 infection.

Summary:

Viruses hijack host metabolic pathways for their replicative advantage. In this study, using patient-derived multiomics data and in vitro infection assays, researchers at the Karolinska Institute aimed to understand the role of key metabolic pathways that can regulate severe acute respiratory syndrome coronavirus-2 reproduction and their association with disease severity. They used multiomics platforms (targeted and untargeted proteomics and untargeted metabolomics) on patient samples and cell-line models along with immune phenotyping of metabolite transporters in patient blood cells to understand viral-induced metabolic modulations.

In addition, they also modulated key metabolic pathways that were identified using multiomics data to regulate the viral reproduction in vitro. Disease severity was characterised by increased plasma glucose and mannose levels. Immune phenotyping identified altered expression patterns of carbohydrate transporter, glucose transporter 1, in CD8+ T-cells, intermediate and nonclassical monocytes, and amino acid transporter, xCT, in classical, intermediate, and nonclassical monocytes.

In the in vitro lung epithelial cell (Calu-3) infection model, they found that glycolysis and glutaminolysis are essential for virus replication, and blocking these metabolic pathways caused significant reduction in virus production.

Taken together, they therefore hypothesised that severe acute respiratory syndrome coronavirus-2 utilises and rewires pathways governing central carbon metabolism leading to the efflux of toxic metabolites and associated with disease severity. Thus, the host metabolic perturbation could be an attractive strategy to limit the viral replication and disease severity.

Citation:

Krishnan, S., et al. (2021). Metabolic Perturbation Associated With COVID-19 Disease Severity and SARS-CoV-2 Replication. Molecular & Cellular Proteomics. 20:100159. DOI: 10.1016/j.mcpro.2021.100159.

EATRIS Quality Initiative

The EATRIS Quality Initiative (EQI) is an umbrella term for EATRIS activities addressing *reproducibility, standards and reference materials*. Significant contributions in this field can only be achieved by collaborating on an international and global scale. By involving EATRIS member facilities in *international consortia which address data quality and reproducibility in translational medicine*, the EQI aims to improve overall scientific conduct while simultaneously helping increase credibility and visibility of the EATRIS community as go-to-provider of high-quality data. EATRIS, with its 115+ member-facilities, is well-suited to help tackle some of the challenges in translational medical research, for example by organising or participating in multi-site benchmarking studies.

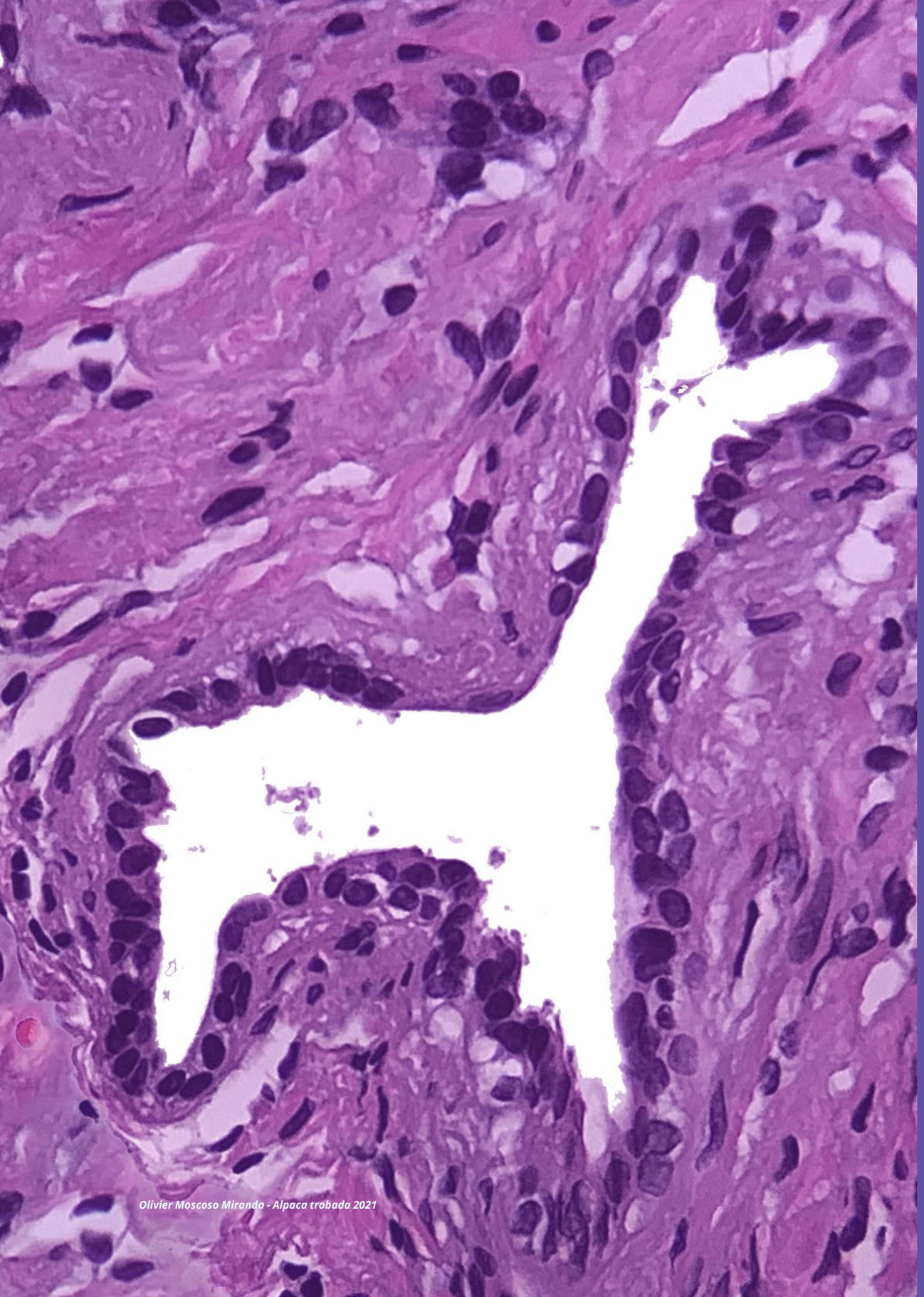
The COVID-19 pandemic had a substantial impact on the timelines and structure of several EQI projects. Issues arising with vendors generating reference material or other material with relevance to projects led to shipment delays, changes in project prioritisation and loss of personnel resulted in deceleration of project management. In particular two projects suffered from these developments: the High Throughput Screening (HTS) ring test project and the ctDNA ring test project. Under the HTS ring test of the Translation Together (TT) initiative, coordinated at NCATS (US), twelve international partners, among those five institutions within the EATRIS Small Molecules platform, participate with the aim of identifying drivers of variability in HTS, as well as to provide feedback to HTS sites on potential sources of variability in their systems. Following the completion of a pilot phase in 2018 with four sites, the study now comprises twelve research sites in total, and the data generation process is near-finalised. During 2020, the results were analysed and additional experiments were initiated, but did not see a major improvement during 2021.

The EQI project that made significant progress in 2021 was the FDA-driven community effort SEQC2 (Sequencing Quality Control Phase II), which assessed analytical issues and developed a best-practice process for the generation and bioinformatics analysis of massively parallel human sequencing data. Hundreds of scientists worldwide are contributing to the SEQC2 project to address sensitivity and quality of somatic mutation detection with NGS technologies and bioinformatics. EATRIS contributed with five sites that provide sequencing data, and seven bioinformatics teams. In 2021, after about five years of intense work, the SEQC2 group was able to publish their manuscripts in Nature Biotechnology, Genome Biology and Scientific Reports. Congratulations to all within the EATRIS community who were involved with this work. Another development as part of the EQI in 2021 was the publication in Briefings in Bioinformatics of *MICHA – Minimal information for Chemosensitivity Assays*, a pipeline to enable the FAIRification of drug screening experiments developed by EATRIS partners as part of the *EOSC-Life* project. A *publication in Briefings in Bioinformatics*, co-authored by members of the EATRIS community, reported the launch of the MICHA web server and database.

You can find out more about the EQI on our dedicated webpage

eatris.eu/eatris-quality-initiative

eatris QUALITY INITIATIVE



Olivier Moscoso Miranda - Alpaca trobada 2021

projects

Project Overview

eatris WAS ACTIVE IN THE FOLLOWING **21** PROJECTS IN 2021

Training the next generation of advanced therapies specialist	ADVANCE Next Generation of Advanced Therapies' Specialists	NOV 01 2019 — DEC 31 2022
Creating a network of genetic and clinical data across Europe	B1MG	JUNE 01 2020 — AUG 31 2023
Biomarker commercialisation tools for researchers	BIOMARKER COMMERCIALIZATION	OCT 01 2021 — SEPT 30 2024
Connecting well-established data resources of the COVID-19 data platform	BY-COVID beyond covid	MAR 24 2021 — DEC 31 2023
Addressing the main challenges faced by SMES developing companion diagnostics (cdx)	Interreg North-West Europe Codex4SMEs	NOV 01 2019 — DEC 31 2022
Delivering innovative scientific tools to support the long-term sustainability strategy of EATRIS in PM	eatris+	JAN 01 2020 — DEC 31 2023
Establishing & coordinating access to rare disease information	EUROPEAN JOINT PROGRAMME RARE DISEASES	JAN 01 2019 — DEC 31 2023
Building a permanent pan-European network of Industrial Liaison and Contact Officers (ILOs/ICOs) for RI-industry partnerships	ENRIITC	JAN 01 2020 — DEC 31 2022
Demonstrating an operational EOSC Platform for researchers	EOSC Future	APR 01 2021 — SEPT 30 2023
Creating an open collaborative digital space for life science	EOSC-Life	MAR 01 2019 — AUG 31 2023

Accelerating biomarker discovery and validation to support therapeutics development for neurodegenerative diseases	epnd European Platform for Neurodegenerative Diseases	NOV 01 2021 — OCT 31 2026
Strengthening the coordination and networking of the established European Research Infrastructure Consortia (ERICs)	ERIC FORUM	JAN 01 2019 — DEC 31 2022
Strengthening the research and innovation capacity of the European Reference Networks (ERNs)	ERICA	MAR 01 2021 — FEB 28 2025
Creating a Clinical Trial Platform Framework	EU-PEARL EVIDENCE CENTRIC CLINICAL TRIAL PLATFORMS	NOV 01 2019 — APR 30 2023
Contributing to the creation of a European Health Data Space	HEALTHYCLOUD Health Research & Innovation Cloud	MAR 01 2021 — AUG 31 2023
Stimulating the wider uptake of structural biology across Europe	iNEXT DISCOVERY	FEB 01 2020 — JAN 31 2024
Developing recommendations for robust and reproducible personalised medicine research	PERMIT PERsonalised Medicine Trials	JAN 01 2020 — JUN 30 2022
Appling innovative approaches to identify the molecular mechanisms in T2D patients	Recognised	JAN 01 2020 — DEC 31 2023
Increasing the visibility of European RIs to new communities in Europe and beyond	RI-VIS Increasing visibility of research infrastructures	FEB 01 2019 — JAN 31 2022
Accelerating the development of effective vaccines	TRANSVAC	MAY 01 2017 — APR 30 2023
Establishing a truly sustainable European vaccine infrastructure	TRANSVAC DS	JUNE 01 2020 — MAY 31 2022

eatris+ Update

EATRIS-Plus is a H2020-funded personalised medicine flagship project that kicked off in January 2020. The main scientific objective is to deliver a multi-omic toolbox to support cross-omic analysis and data integration in clinical samples. EATRIS-Plus is also *a comprehensive sustainability project that involves building national capacity, strategic stakeholder engagement, industry and SME engagement, international collaborations, as well as providing training opportunities* to the *EATRIS research community and beyond*.

2021 was an action-packed year for the project as we reached our mid-way point. Many of the activities saw maturation and all of the Work Packages operated in full swing. The first reporting period closed on 30 June 2021, and the subsequent mid-term review took place with the European Commission Project Officer and an independent assessor. Feedback received by the Commission was very positive indicating that EATRIS is on the right track despite the challenges that the COVID-19 pandemic presented.

Workshops and Training went virtual

The first EATRIS-Plus Annual Meeting took place virtually in February followed by the Multiomic Stakeholder Group Workshop in March. The latter was attended by 20 representatives including from large Multiomic initiatives such as EASI Genomics, Beyond One Million Genome and Human Epigenome Consortium, to name a few. The workshop kicked off the development of the position paper on European cooperation for tackling the challenges of multiomics research in Personalised Medicine.

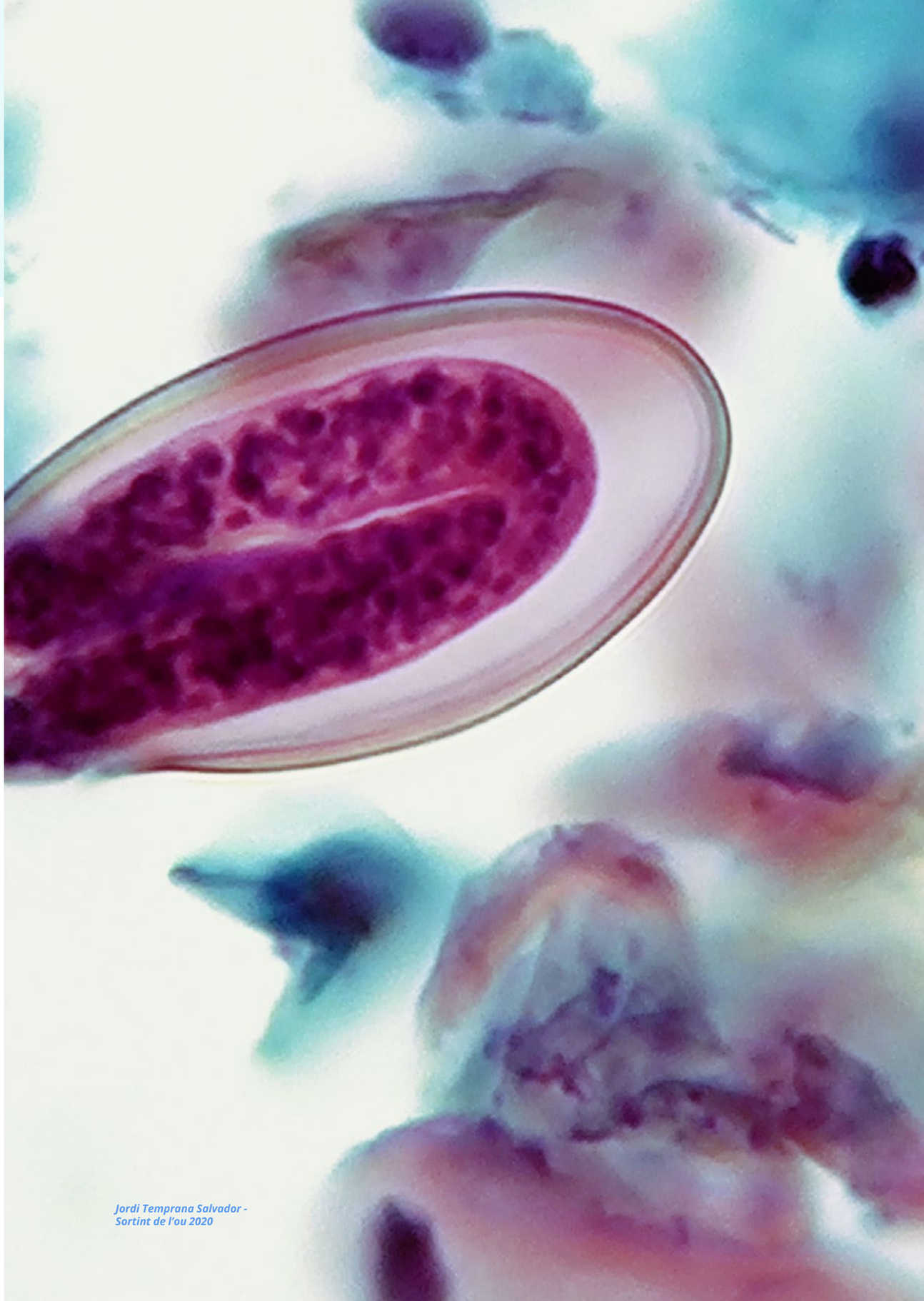
Organised in June by the Portuguese node, the first EATRIS-Plus Summer School in Personalised Medicine took place. The 5-day event attracted over 100 participants virtually. All lectures will be made available on the new EATRIS TransMed Academy online learning platform in 2022. Another important workshop took place in September with the University of Ljubljana as well as Biocat at the helm – Theory and Practice of Industry Academia collaboration. The workshop that focused on the challenges and opportunities, as well as legal practicalities of public-private partnerships brought together 40 researchers, knowledge transfer specialists and biotech employees from across Europe.

Building Capacity

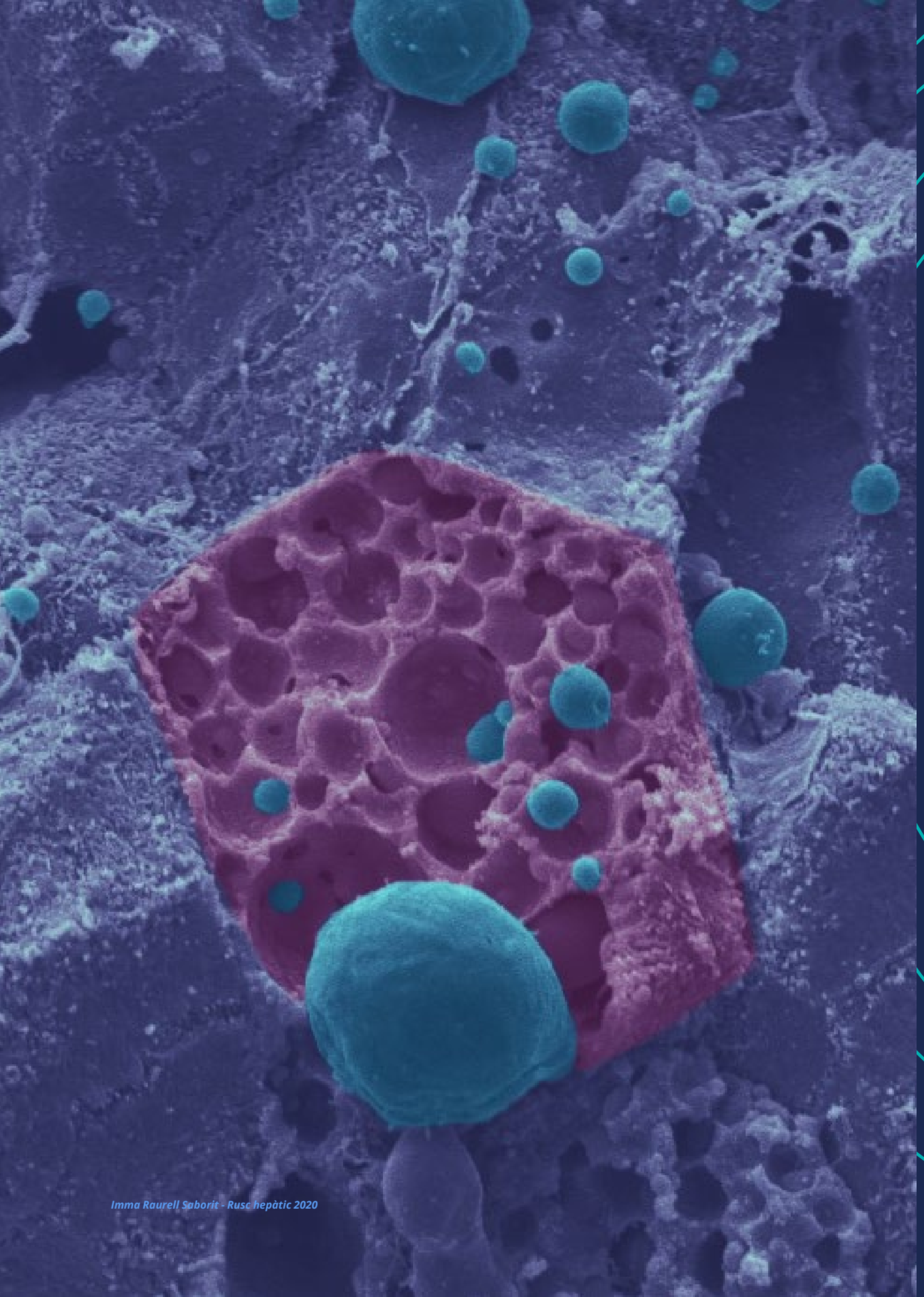
The highlight of 2021 was Croatia becoming the 14th node of EATRIS, as well as joining as the 20th EATRIS-Plus partner.

Important for the infrastructure – the expansion of the catalogue of services saw activity to reinforce both our Health Technology Assessment and Regulatory Task Force expertise. In April the Health Technology Assessment survey was carried out and led by partner San Raffaele Hospital. The service access guidelines were also developed. In December 2021, an Open Call for Regulatory Experts was launched. This action supports the formation of a Regulatory Task Force that aims to among other duties act as an intermediary contact point with National Competent Authorities on behalf of EATRIS academic members, and explore the possibility to offer regulatory support for research grant applicants as a fee-based service.

Outreach activities included the launch of the Translation Together new website, the production of EATRIS-Plus introductory video, as well as continued collaboration with EUPATI on patient education materials, as well as with EPF and EATG on the activities centred around Patient Engagement in research. Organised by project partner Biocat, EATRIS participated in 2 science forums (Roundtable at Biocat Annual Report of Bioregions, and a panel discussion at the CEBR Annual Meeting).



Jordi Temprana Salvador - Sortint de l'ou 2020



Imma Raurell Saborit - Rusc hepàtic 2020

services and activities

our services

Research services dedicated to industry

EATRIS built its operations through developing access to the EATRIS infrastructure for industry, hence fostering public-private partnerships. In 2021, the COVID-19 pandemic fundamentally impacted business development, changing industry partnering events, B2B meetings and networking opportunities. The momentum built in 2020 with business development towards SMEs by continued presence at (online, generally well-attended) industry partnering events could not be maintained. However, the number of requests (including from companies) that came in through the COVID-19 Fast Response Service increased, with immediate dissemination of these matchmaking requests to the EATRIS COVID-19 Forum (now counting 100+ members in 43 institutions) waiving our matchmaking fee. To date, the total value of the projects initiated with an SME and related to COVID-19 is circa €500k corresponding to €25k unclaimed matchmaking fees. In addition, national nodes were assisted in industry outreach, sharing business intelligence, communication materials and best practices.

Beta-testing by EATRIS institutes (whereby companies provide prototypes or early production versions of products for testing in the operational environments of EATRIS institutes) of new assays and technologies developed by industry was explored further. This resulted in the EATRIS Connect concept where a client engages with EATRIS community through a webinar (piloted with CancerAppy in 2021) with an invitation to use/test their (platform) technology in a collaborative way (e.g. receiving research results and/or joint publication in return for user feedback).

C&S continued to develop the service offering for industry by maintaining its research service, increasing visibility through the new website, and confirming industry needs and interest through interactions with the community. Specific opportunities pursued to interact with industry were:

- The PERMIT project surveys as well as dedicated working sessions delivered new insights on needs and bottlenecks in personalised medicine from an industry perspective;
- Exchange of experience with NC on acquisition and industry engagement during weekly updates provided new insights for EATRIS nodes to promote EATRIS services at the national level;
- The EATRIS-Plus Industry-Collaboration best practice workshop hosted by Ljubljana University, co-organised with BioCat, during the Novartis Biocamp week, improved awareness of the EATRIS model with engagement of SMEs as one of the key goals;
- Through the Codex4SMEs Fast Track Programme, EATRIS offered to SMEs a wide range of services to support the development of innovative diagnostics for improving the personalised healthcare in Europe;
- Participation in the EIT Health Croatian Hub morning session created awareness about EATRIS capabilities.

SME Engagement Case Study:

InDex Pharma

Charlotte Admyre
Business Development Manager

Arezou Zargari
Research Director and Head of IP

To facilitate academic collaborations with industry, EATRIS provides research services for biotech SMEs and pharmaceutical companies. One such example is our work finding an academic research group to collaborate with InDex Pharmaceuticals. We spoke with Arezou Zargari (Research Director and Head of IP) and Charlotte Admyre (Business Development Manager) to find out about their experience working with EATRIS.

Can you tell us a little bit about Index Pharmaceuticals?

Charlotte: InDex Pharmaceuticals is pharmaceutical development company located at the Karolinska Institutet campus in Stockholm, Sweden. We focus on improving the lives of patients suffering from immunological diseases. To do this we develop effective and safe drugs for diseases with a significant medical need. We are a small (<20 people) public company listed on the Nasdaq First North Growth Market.

What is your strategy for external collaboration?

Arezou: Since we are a small company, we don't have all expertise in-house so we sometimes look externally for certain functions. We have different types of collaborations depending on the project, aims and what kind of expertise we are looking for. We work with consultants, companies and academic groups. With external collaborations, our aim is to be effective and find competitive collaborators in order to reduce the research time and to make the development of the product as efficient as possible. We use different social media channels as well as our contact network to find new people or services. This will then be communicated internally to stimulate the actions inside the company. This is a dynamic process to run our business and provide the greatest benefits to our company.

How did you get involved with EATRIS?

Charlotte: I met Ulrika Bäckman (EATRIS National Coordinator for Sweden) at one of the Nordic Life Science Days. It's the largest Nordic business partnering conference dedicated to the life science industry, and there was a 'speed-dating' event. I happened to meet Ulrika two years in a row, and we talked about each of our organisations. Internally at InDex Pharmaceuticals, we started to think about initiating a new project in an indication that we were not working in at that moment and felt that EATRIS could help us find a good group for the work.

How has EATRIS has helped Index Pharmaceuticals?

Arezou: We sent our request to EATRIS through filling a short questionnaire. EATRIS communicated our project to the European community. After that, EATRIS arranged a series of meetings with an international selection of academic groups that were experts in the field. Amongst the options was one group based in another European country that perfectly matched our needs. We are very pleased with the group, and thanks to EATRIS, the project has gone very well.

What are the gaps in the current landscape for companies like InDex Pharmaceuticals to establish collaborations with academia?

Charlotte: For many years we've worked in the area of ulcerative colitis, so we know most of the researchers in the field. However, when we wanted to explore new indication that we haven't worked with the matchmaking role of EATRIS was crucial. EATRIS was able to very quickly find a selection of high-quality research groups that we could collaborate with. The role of EATRIS was indeed very helpful in our case.

How do you think other companies can benefit from EATRIS?

Arezou: Finding the best service to meet your needs takes time. This is something that small companies like InDex Pharmaceutical sometimes don't have. It is hugely beneficial to be able to engage with EATRIS who have a vast array of expertise and facilities within an extensive infrastructure. It means that in a short time-frame, EATRIS is able to find a high quality match for the company, which in turn saves time and money for small companies like ours.
Charlotte: If we were going to search through all of these academic groups ourselves, it would have taken a great deal of time. Working with EATRIS to find our perfect match made the process very efficient.

Is there anything else that you'd like to add?

Arezou: We really appreciate what EATRIS did for us. I think that we would have found it extremely challenging to find such an academic group to work with us on this project. As it turns out, we are very pleased with the match that EATRIS helped us find.
Charlotte: The selection process of candidates was very smooth. EATRIS set up an interview with each of them and, as it turned out, we quickly aligned with one of the options. The process was very efficient. Thank you.

SME Engagement Case Study:

Curovir

Jacob Westman Ph. D.
Associate Professor, Medchemcon

EATRIS was able to help SME Curovir find an academic partner to collaborate with in setting up an animal model and evaluate the efficacy of several compounds. Dr Jacob Westman, Associate Professor at Medchemcon (Sweden) and Head of preclinical research and development at Curovir, kindly agreed to tell us about his experience with EATRIS.

eatris services and activities

Please can you tell us a bit about your company?

Curovir is developing novel antivirals for treatment of enterovirus infection. The group of enteroviruses are big and contains more than 250 human pathogenic viruses and in order to find a broadspectrum antiviral we have focused on host targets that all enteroviruses are using.

What is your strategy for external collaboration?

Like many other small companies, we have to have external collaborations due to lack of internal facilities and/or experience/expertise. For the last few years we have outsourced almost everything. We have collaboration with both CROs, CMOs as well as academic research groups.

How did you get involved with EATRIS?

We had for many years run in-vivo studies internally but after a small reorganisation in the company we had to find a new external collaboration. Since I had a limited network, being an organic chemist, in the field of in-vivo studies I called a former colleague. Ulrika Bäckman. Luckily she worked with EATRIS (as the National Coordinator for Sweden) and she EATRIS could help.

How has EATRIS helped you?

Very quickly EATRIS suggested Wageningen University and Research (Netherlands) for our in-vivo model needs. We collaborated with them for about a year and they set up an animal model and evaluated the efficacy of several compounds for us.

What are the needs in the current landscape where SMEs need to establish collaborations with academia?

For most small companies, outsourcing is the reality and the needs are similar irrespective of whether collaboration is with academia or CRO. Given that the development of pharmaceuticals is very complex and not many small companies have the network, experience or knowledge for the whole range of activities, EATRIS is perfectly positioned to help small companies find collaborators in a fast, efficient way compared them each having to build from scratch. To find the “best” collaborator quickly is always good for small companies since cost is not the only parameters that is important.

Research services dedicated to academia

Business development efforts were carried out to increase visibility of academic services ahead of Horizon Europe launch, including:

—
Refinement of the webpage dedicated to “Support for funding applications” and corresponding service leaflet;

—
Development of additional communications materials providing an overview of EATRIS institutions’ expertise for relevant Horizon Europe/health and European Innovation Council calls and specific support for Marie Skłodowska-Curie actions;

—
Regular communications with specialised consultancy companies, such as Zaz Ventures, ttopstart and Catalyse;

—
Participation in Horizon Europe-Health cluster partnering event; and

—
EATRIS became a member of Crowdhelix platform.

To encourage EATRIS members to make use of these services and increase members’ capacity to prepare high quality funding applications, several resources were specifically developed and offered to EATRIS institutions:

—
A funding opportunities database is now available on EATRIS communities, and is regularly updated with funding calls relevant for translational research;

—
National coordinators received a 3-session online training on Grant Writing, and regular updates on Horizon Europe developments and funding opportunities; a 3-hour workshop was organised with National Directors to identify common funding calls of interest; and

—
A webinar programme, Horizon Funding webinar series, kicked off in June 2021, to provide researchers and grant officers with guidance on fundability.

EATRIS performed 35 consortium-building requests and joined 19 proposals as project partner.

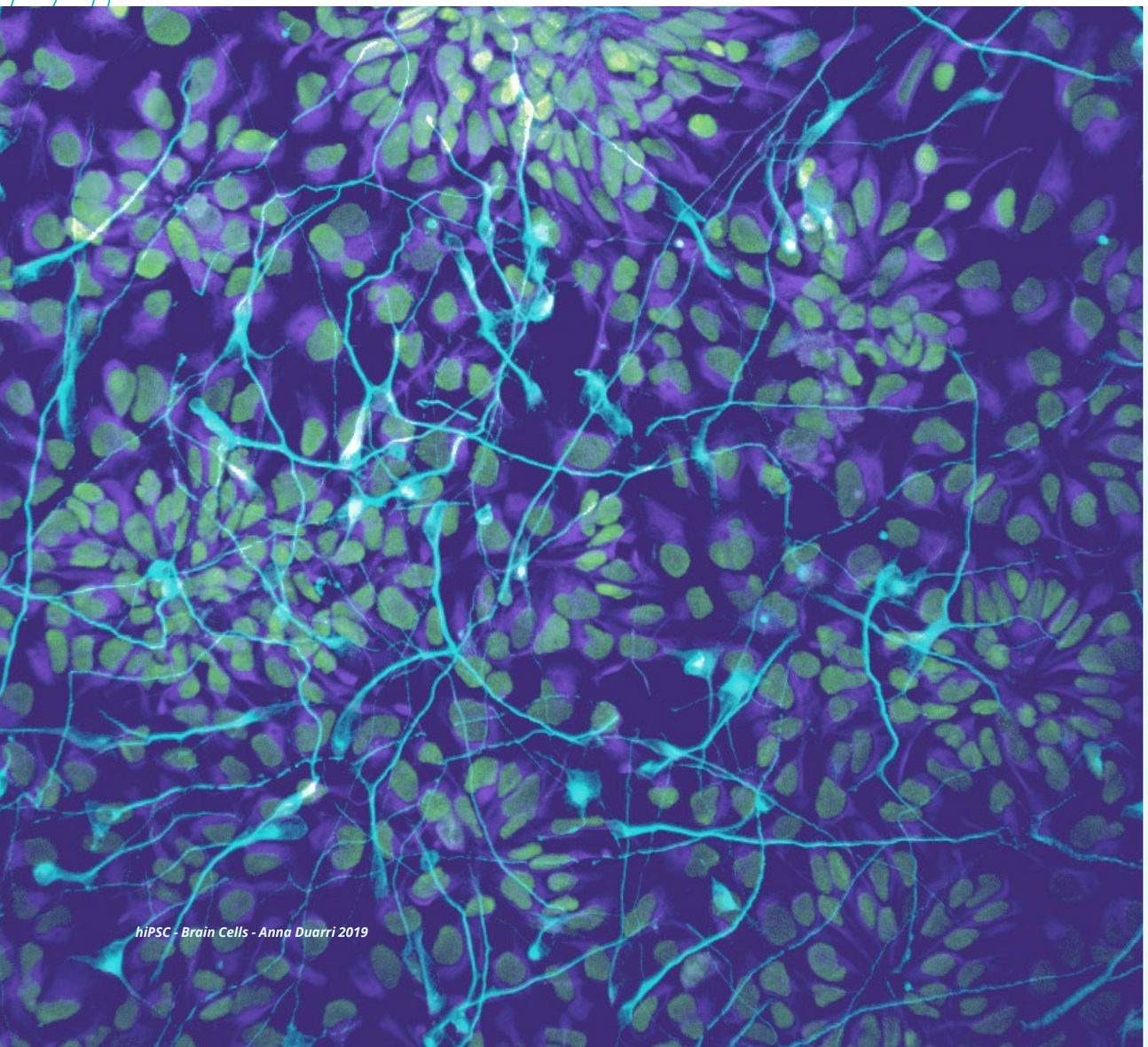
By the end of 2021, EATRIS saw four new high value projects awarded. This included EATRIS’ second successful IMI application, EPND, from the IMI Call 23 to develop a platform for accelerating biomarker discovery and validation by providing access to AD and PD cohorts, samples and data. EATRIS’ involvement in the Horizon INFRA-2021 Emergency calls also proved successful, with both ISIDORe and BY-COVID being awarded. ISIDORe, which includes ten EATRIS Institutions, aims to provide scientists’ access to the whole extent of state-of-the-art facilities with expertise from structural biology to clinical trials for infectious diseases R&D. Cutting edge services from EATRIS institutions including immune monitoring and profiling will be accessible through transnational access (TNA). In parallel, the BY-COVID project will deliver access to organised data across domains and jurisdictions via the components of the EU COVID-19 Data Platform. In addition, the INTERREG Northwest application; CODEX4SMEs Capitalisation phase was also successfully reviewed, providing access to diagnostics SMEs to technology platforms and expertise from the EATRIS COVID-19 Research Forum.

For the Horizon Health Calls, EATRIS coordinated the REMEDI4ALL proposal, which aims to build a European innovation platform for the repurposing of medicinal products. This project involves eight EATRIS institutions and is aligned with the strategic goals of the EATRIS Small Molecules Platform. It represents a major step in the EATRIS mission to facilitate the repurposing of drugs to tackle unmet medical needs.

In parallel, EATRIS entered as a partner two new Horizon INFRA Calls, and four Horizon Health calls, all with close alignment to the EATRIS Platform scientific agendas. It includes the CanSERV proposal (INFRA-2021-SERV-01-01) led by BBMRI, where we offer services from 22 of our institutions and the ELIXIR led proposal (EOSC4Cancer) for the FAIR and open data sharing in support of the INFRA cancer research call

Funders and charities dedicated services

Through the EATRIS Translational Assessment, we proactively support in identifying potential gaps and bottlenecks which may hinder translational projects. In addition to the translational feasibility assessment, in collaboration with ZonMw (Dutch governing partner), we developed an early HTA framework for translational projects. To date, we collaborated with three organisations: ZonMw, the foundation ReumaNederland and Prinses Beatrix Spierfonds. Up to now, ca. 100 projects have been assessed for their translational feasibility, including those assessed in the EJP RD mentoring programme.



hiPSC - Brain Cells - Anna Duarri 2019

Summary of activities

Summary of activitiy

CORE ACTIVITIES	2017	2018	2019	2020	2021
Consortium Building	14	20	13	22	35
Research Service	14	6	10	24	17
Translational Assessment/Expert advice	14	2	9	28	29
Hub Partnering	1	1	1	1	1
INCOME C&S OFFICE	**2017**	**2018**	**2019**	**2020**	**2021**
Service Fees*	€ 114,838	€ 32, 417	€ 85,339	€ 57,530	€ 50,246
Grants	€ 261,505	€ 309,768	€ 355,107	€885,042	€ 828,050
INCOME INSTITUTIONS (BUDGET NEGOTIATED)	**2017**	**2018**	**2019**	**2020**	**2021**
Industry Projects	€ 326,571	€ 5000	€ 818,500	€ 296,487	€ 593,651
EATRIS Linked Third Party grants	-	€1,615,049	€ 7,713,536	€136,250	€ 851,131
Users	5,500	3,000	6,500	6,978	2,010,329

**non-grant/non-contribution income*

transversal activities

EATRIS Data Strategy

EATRIS Data Core Team:
Laura García Bermejo
(IRYCIS, Spain),
Jan-Willem Boiten
(Lygature, Netherlands),
Maddalena Fratelii
(Mario Negri, Italy),
Hajdúch Marián
(IMTM, Czech Republic),
Peter-Bram t'Hoen
(RadboudUMC, Netherlands),
Alex Sanchez-Pla
(Vall d'Hebron Research Institute, Spain)

Effective, efficient, and coordinated data management is imperative in order to enable an effective translational medicine ecosystem.

To this end, EATRIS continued our involvement in several key data-related European projects throughout 2021, namely: EOSC-Life, EOSC-Future, HealthyCloud, and Beyond One Million Genomes (B1MG). Additionally in 2021, the BY-COVID project was granted, where EATRIS has a data-related role.

The focus of EATRIS on data-related activities highlighted the need for increased capacity at the Coordination and Support office in order to lead our strategic direction in this domain. This need resulted in the appointment of our Data Director in Q3. Gary Saunders was appointed to this role, bringing with him many years of experience in leading the coordinated implementation of data management strategies, tools, and services at the European level as well as previous European Research Infrastructure related experience.

During Q4 the Data Core Team, led by the EATRIS Data Director, assessed as a whole the data-related commitments that EATRIS is tasked to deliver, where this is leading us, and how we can utilise these activities in order to build an impact for our community, and a sustainable strategic involvement in the field.

Gary Saunders
Data Director

In late Q4, and in collaboration with the EATRIS Node coordinators, an 'EATRIS Node Data Capacity Mapping Survey' was generated. The aim of this survey is to work with the EATRIS Nodes to uncover capacities in this domain, to align these with the translational medicine needs of our community at large and ensure that these services can be utilised and sustained in our multi-year strategic direction in the field of data management.

Additionally, preliminary interviews were also conducted with each of the EATRIS Platforms, Communications, E&T, and Operations to ensure that the EATRIS Data Strategy as it is developed and implemented is in alignment with all other strategic aspects of EATRIS and that it is not siloed. The generation of the Data Strategy, and the alignment with the other aspects of EATRIS will continue, and indeed will be a key focus of our work in 2022.

Partnerships

Engaging with key global stakeholders to collectively address high risk of failure in medicines development is essential to the core mission of EATRIS. Successful translational research requires cross-sectoral collaboration among diverse stakeholders, namely academia, industry, funders, hospitals, regulators and patient organisations.

Working closer with other European Research Infrastructures

EU-AMRI, the European Alliance of Medical Research Infrastructures formed by BBMRI, EATRIS and ECRIN officially launched

In 2021, the collaboration of EATRIS with two other patient-centric research infrastructures (BBMRI and ECRIN) reached a new milestone: the unveiling of the name (EU-AMRI), logo and website of the initiative. The website of EU-AMRI includes the catalogue of all three research infrastructures as well as joint policy documents and success stories. Visit: www.eu-amri.org

The Alliance also continued to further build its advocacy presence through its joint Public Affairs Working Group, which notably included the publication of a statement, calling for further European-wide deployment of high-quality infrastructures in the context of the Cancer Mission.

EATRIS leads the publication of a report on Research Quality and Reproducibility in the context of the ERIC Forum

The ERIC Forum brings together all European Research Infrastructure Consortia (ERICs). The ERIC Forum aims to provides information, best practices and potential solutions to challenges which ERICs can face in the preparation phase or throughout the implementation of the ERIC Regulation. The ERIC Forum is also a consultation body for EU policies related to Research Infrastructures.

In February 2021, EATRIS organised a two-day inter-disciplinary workshop on the subject of "Research Quality and Reproducibility". The workshop provided a wide range of stakeholders from academia, industry and policy-making with the opportunity to exchange best practices and explore challenges in the design and execution phase of research. The report includes seven ways to increase research quality and reproducibility ranging from reporting, communications, quality management and funding among others, and also proposes that research infrastructures have a decisive role to play in the future of research and should be supported accordingly by funders.

Asserting EATRIS role in the global research environment

EATRIS international partnerships, Translation Together and NewFound

EATRIS aims to contribute to a systemic change in the biomedical field maximising the capacities of the translational medicine process. This is an ambitious, long-term, and global change of the biomedical research paradigm requiring cross-border collaborations. Since 2014, EATRIS collaborates across the globe for the advancement of Translational Medicine with sister organisations of international nature, namely NIH-NCATS (US), TIA (AU), AdMare Bioinovations (CA), AMED (JP), LifeArc (UK), FIOCRUZ (BR).

In 2021, actions undertook by the partnership (Translation Together) involved the launch of a revamped website hosting a video on Translational Medicine with captions in multiple languages (English, French, Japanese and Portuguese); the kick-off of Translation Together Connect networking webinar series to foster collaborations between the researchers of the different organisations and the preparation of Translation Together video series about translational scientists. Furthermore, the group submitted a commentary piece entitled A call to action for translational sciences in COVID-19 and future pandemics to Nature Reviews Drug Discovery to be published in 2022.

A second partnership of global nature is the newly established repurposing platform NewFound. NewFound is a joint venture with the Oswaldo Cruz Foundation (FIOCRUZ), the US National Institute of Health's (NIH) National Center for Advancing Translational Sciences (NCATS), and the Open Source Pharma Foundation (OSPF). NewFound brings together drug development and manufacturing expertise with deep expertise in disease biology and clinical experience globally with the aim to support the development of project plans and regulatory enabling studies that would expedite Drug Repurposing projects efficiently. The first project mentored by the group supported repurposing strategies in the field of Collagen VI Myopathies.

Listening to patients and fostering multi-stakeholder engagement

Advocating for meaningful patient engagement in translational research

Building on partnerships initiated since 2019 with EUPATI and the European Patients' Forum, EATRIS has taken further steps towards raising further awareness on the need to make meaningful patient engagement in translational research the "new normal". It organised several workshops and webinars throughout the year with researchers and research managers and provided guidance and incentives for those stakeholder groups to incorporate patient engagement in their research. In addition, EATRIS continued to support patient education by offering training opportunities to patients to its regular training courses on medicines development.

EATRIS maintains close dialogue with regulatory authorities

Finding ways to work closely with the European Medicines Agency (EMA) to learn how best to support our researchers in the regulatory strategy of their therapeutic development, remains a key focus of EATRIS. Through the ADVANCE Programme which aims to educate and train the next generation of ATMP developers, the EMA and EATRIS have worked closely together to drive the regulatory aspect of an open online course. EATRIS, EMA and the ADVANCE Programme also co-hosted a webinar titled "Navigating the regulatory requirements for ATMPs", attended by over 300 participants, with scientists and regulatory experts represented from across academia, industry, and governmental organisations. Follow-up webinars are already planned for 2022.

eatris services and activities

Raising the voice of EATRIS in future EU research and innovation policy developments

EATRIS joined two policy coalitions particularly active in EU research and innovation developments: the EU Health Coalition and the Federation of European Academies of Medicines (FEAM) Biomedical Policy Forum. EATRIS joined the EU Health Coalition as its 41st partner. EATRIS shares a common vision with the EU Health Coalition: to accelerate the translation of scientific discoveries into benefits for patients; the need for multi-stakeholder engagement and cross-sectoral collaboration is of the utmost importance. By joining the EU Health Coalition and actively supporting its future advocacy actions, EATRIS aims to constructively contribute to the shaping of health and research policies and to help ensure health research remains a top priority in Europe.

The FEAM European Biomedical Policy Forum provides a platform for discussion on key policy issues for the biomedical community. The Forum brings together representatives from academia, research charities, industry, European and national trade associations and professional bodies, regulators, public health bodies, and patient and consumers groups. By becoming a member of the Forum, EATRIS has joined leading biomedical organisations, such as Wellcome Trust and Cancer Research UK, in constructively and collectively contributing to shaping future health and research policies through expertise in translational medicine.

Communications

It is fundamental to the success of EATRIS that our stakeholders know who we are, what we do and the impact we (can) have. To build on our communications strengths and achievements, 2021 began with launching a Communications Strategy that would focus on nurturing and growing EATRIS audiences. As part of this, an audit was conducted across our digital estate that clearly identified the need to overhaul the EATRIS website.

The approach for the website redesign was to develop a site with input from all corners of our community - to build something with stakeholders in the loop that would be robust for the road ahead and speak to our wide range of audiences. The plan with the EATRIS website is to take an agile approach – to constantly refine, iterate and evolve over time. With that in mind, please do get in contact with the comms team if you have any comments, suggestions or feedback on our efforts.

The new Communications Strategy takes an evidence-based approach to EATRIS communications activities. Regular monitoring of quantitative analytics from all of our channels takes place, and the information is used to understand how we are performing and where the opportunities are so that we can adapt where necessary.

The take-home message from our metrics is that we have seen strong and sustained growth across all of our channels. Just to highlight one metric, when we look at community growth, we can see substantial increases in audience size on all four of our social media channels: Twitter (+34%), LinkedIn (+67%), Facebook (+24%) and YouTube (+318%).

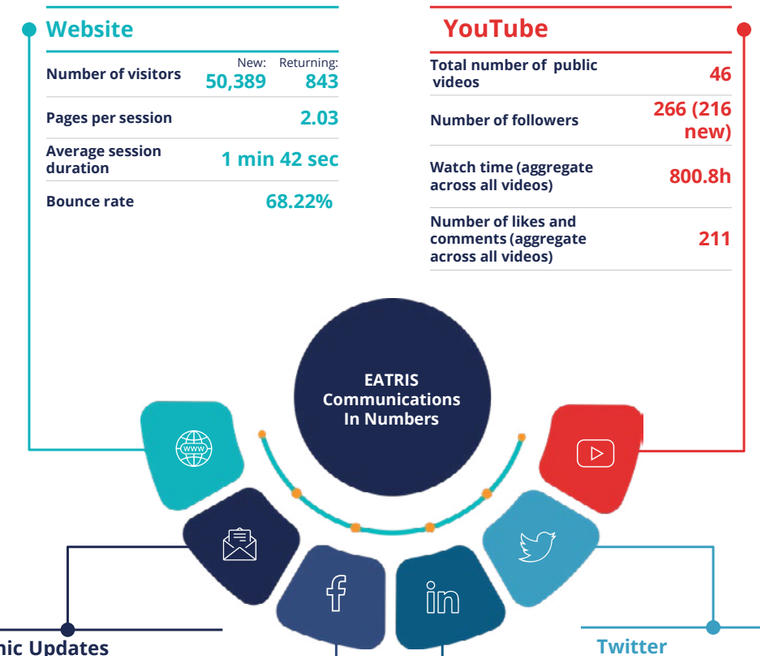
We are cognisant that there is still a great deal of work that needs to be done to increase the visibility of EATRIS, and we plan to focus on three key areas in 2022:

Nurture and grow EATRIS audiences

Empower EATRIS members

Measure and communicate the societal impact of EATRIS

Performance of our digital communications channels in 2021



Website

	New:	Returning:
Number of visitors	50,389	843
Pages per session	2.03	
Average session duration	1 min 42 sec	
Bounce rate	68.22%	

YouTube

Total number of public videos	46
Number of followers	266 (216 new)
Watch time (aggregate across all videos)	800.8h
Number of likes and comments (aggregate across all videos)	211

Electronic Updates

Internal EATRIS Monthly update	Open rate	29.35%
	Click rate	4.35%
	Audience size	547
Translational Trends Quarterly update	Open rate	32.09%
	Click rate	4.09%
	Audience size	1697

Twitter

Number of tweets	572
Number of followers	1,884 (470 new)
Impressions	464,732
Number of likes	3,242
Number of comments	25
Number of retweets	1,315
Number of post & hashtag clicks and media engagement	4,245

Facebook

Number of posts	491
Number of followers	150 (33 new)
Reach	2,753

LinkedIn

Number of posts	523
Number of followers	1,995 (851 new)
Impressions	138,709
Number of likes and comments	3,343
Number of shares	657

eatris

Data for year 2021

A snapshot of the major changes on the new EATRIS website

We conducted extensive work on the needs of our community, including focus groups, surveys, interviews and user experience testing and incorporated all of the feedback into the new design.

From the outset we wanted the website redesign to speak to every corner of our community. A strength of EATRIS is that we have many stakeholders, but this also creates a challenge for how we present ourselves in a way that universally speaks to our many audiences. It became apparent early on that we would need a way to triage our website users to content that is relevant for them. To that end, we are excited to roll out the new "Explore EATRIS as" functionality. Via a navigation bar at the top of the browser – users can select to curate the content according to who they are – a scientist, a policy-maker, a patient or a company.

Our preliminary work also indicated that we needed to re-think the site navigation. An expandable mega menu was deployed in the header, with the structure and naming convention being adapted in line with stakeholder feedback. For example, we renamed 'Insights' to 'News' on both the front and backend of the site.

We also:

- added a new 'Resources' section – a repository for policy statements, leaflets, our annual report, strategic plan, and more.
- set up a 'Brand Centre' to house our logo for external users, and information about the EATRIS brand.
- implemented the ability to view previous news and events.
- installed a new PDF viewer.
- constructed an EATRIS Quality Initiative (EQI) page.
- introduced a new accordion layout for pages.
- established a new favicon (the website icon that you can see in the address bar or in the browser's tab).
- re-wrote most of the text on the site.

...and more!

BANNER IMAGE: BEAUTIFUL MICROSCOPIC IMAGES (E.G. THIS ONE OF A WOUND HEALING ITSELF)

"EXPLORE EATRIS AS" CONTENT CAN BE TAILORED BY USERS DEPENDING ON WHO THEY ARE

INTERACTIVE MAP: USERS CAN CLICK ON COUNTRIES ON THE MAP & BE TAKEN THROUGH TO THAT PAGE

SCROLLING SERVICES RIBBON SO USERS CAN SEE THE FULL LIST OF SERVICES WE OFFER AND CLICK FOR MORE INFO

FUNDING BODIES: ACKNOWLEDGED ON EVERY PAGE

Education and Training

In 2021, the education and training (E&T) team contributed to the EATRIS mission of supporting researchers in developing their biomedical discoveries into novel translational tools and interventions for better health outcomes by designing and executing a multitude of training activities. In 2021, we ran nine online workshops with over 300 participants and 18 webinars with more than 950 registrants.

Of the nine workshops, three were targeted at the next generation of researchers (TMex, ATMP Development, Enable Career Workshop) and six to senior researchers (e.g. Personalised Medicine Summer School, Public-Private collaboration workshop). In addition, six trainings were exclusively targeted at EATRIS members (e.g. Grant Writing Workshop, Patient Engagement Workshop).

In comparison to 2020, we doubled the number of training events. This is partly due to the strong commitment and ownership of the C&S team to running E&T events such as the AI symposium but also due to successful collaborations with strategic partners. This included collaborations with EMA and the global partnership Translation Together and collaborations in strategic projects such as EJP-RD, EATRIS-Plus and EOSC-Life.

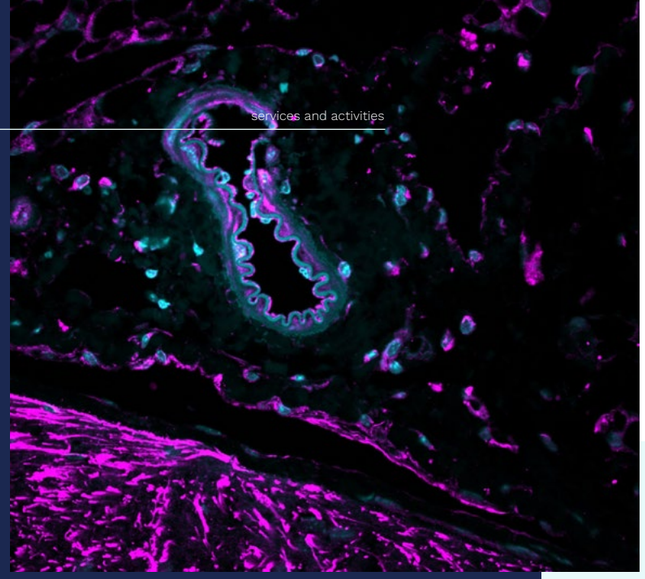
To better showcase our education and training activities and direct our users to the most suitable courses, we set up a webpage as a one stop shop - Transmed Academy (eatris.eu/transmed-academy). In addition, we chose a new learning management system for our e-learning courses to improve the user experience of these courses, which also allows us to obtain better user statistics.

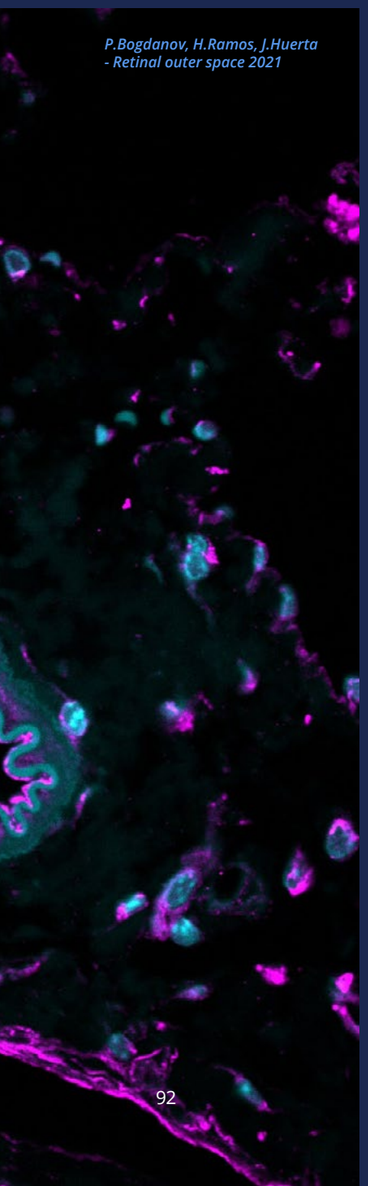
In 2022, we plan to transfer the "The landscape of Translational Medicine" course, as well as the ADVANCE e-learning to the new system and are also preparing a new offer on regulatory aspects of vaccine development.

Selected training highlights

	TMex Translational Medicine Explained Course	EATRIS-Plus Summer School on Personalised Medicine	ADVANCE Course on ATMP Development	EATRIS-Plus Grant Writing Workshop
Lead Partners	VHIR, SPAIN, EATRIS C&S	INFARMED, PORTUGAL; UNIVERSITY LUBLJANA, SLOVENIA; EATRIS C&S	ISS, ITALY, UNIVERSITY LUBLJANA, SLOVENIA; EATRIS C&S	EATRIS C&S
Target audience	NEXT GENERATION RESEARCHERS	SENIOR RESEARCHERS	NEXT GENERATION RESEARCHERS	NATIONAL COORDINATORS
# Participants	28	99	30	27

Testimonial from the ADVANCE blended learning programme





P.Bogdanov, H.Ramos, J.Huerta - Retinal outer space 2021

“Everything about this course was top quality and I must congratulate all contributors for the amazing organisation. In the last 16 years, I have attended many workshops, but this EATRIS workshop on ATMPs wins hands down. The breadth of the topics covered was excellent and all speakers and the content were flawless. Furthermore, I have to mention separately the group exercise which was a great chance for cooperation, but also to go deep into the intricacies of ATMPs when it comes to the regulatory part (Market Authorisation etc) - which happens to be my main objective at work. I really enjoyed this exercise (which involved cooperation between group members, critical thinking and also communication - to deliver the message via the report and a presentation) and it will help me tremendously in my forthcoming projects in the Commission. Lastly, I met some really nice people in the course and I have already made contacts with them (via LinkedIn) and I already have something in mind about a future collaboration.”

Evangelos Daskalopoulos
European Commission, Joint Research Centre (JRC)

Secondment at the EMA: An Interview with Rosan Vegter

Rosan Vegter is the EATRIS Scientific and Education Manager. She spent a year as a ‘Seconded National Expert’ at the European Medicines Agency (EMA). Rosan kindly agreed to sit down with us and tell us about her experience

Please can you tell us about your role at the EMA?

I took up the role of ‘Academia Liaison’ within the EMA’s Regulatory Science and Innovation Task Force. My role was to reinforce collaboration with academia through the implement of EMA’s Framework for Academia and goal 5 of the Regulatory Science Strategy towards 2025, which is all about enabling and leveraging research and innovation in regulatory science.

What were your main achievements during the secondment?

My work fell into the following five main activities:

Creating academia-targeted materials to promote existing regulatory tools and provide regulatory and scientific support to foster development of new and innovative medicines in academia.

Providing support to consortia in externally funded projects and establishing partnerships in areas regulatory science research.

Engaging with academia to develop and deliver regulatory training modules and resources.

Supporting the establishment of staff-exchange programmes and placements to enable training of early-career researchers in regulatory science.

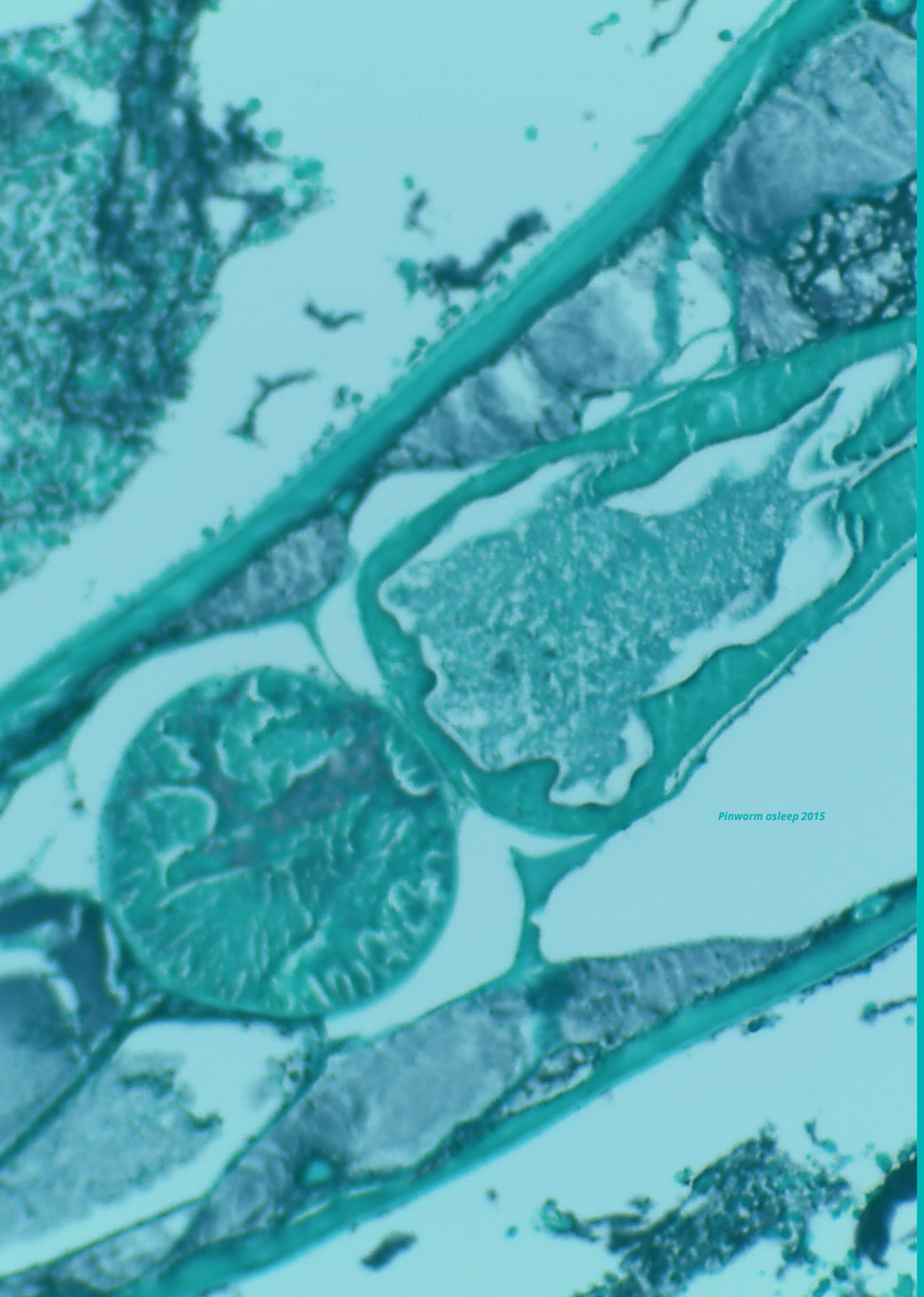
Identifying expertise to participate in committees, working parties and scientific procedures at EMA. Organising scientific workshops and information days.

What were your main achievements during the secondment?
The fee waiver for protocol assistance, a special type of scientific advice for orphan medicines, was definitely one of the highlights of my secondment. Applicants from the academic sector can now receive free protocol assistance for developing orphan medicines and this will greatly enhance research and development in the field of rare diseases. Other achievements include updating the dedicated webpage for academia and supporting the relaunch of the Agency’s traineeship programme for recent graduates.

Arguably the most significant achievement for EATRIS during my secondment was the commitment of EMA to support and contribute to several EATRIS training activities. For EATRIS’s yearly TMex course, we designed a case study and lecture to teach young professionals on the regulatory pathway of a medicinal product. For the Erasmus+ funded project ADVANCE, the Agency’s Advanced Therapy Medicinal Products (ATMPs) experts developed a regulatory module for the ATMP e-learning and jointly organised a webinar with EATRIS on navigating the regulatory requirements for ATMPs.

Is there anything else you wish to add?

I would like to express my sincere gratitude to EMA and its staff for this experience, having had the opportunity to learn more about the regulatory activities and scientific procedures at EMA, attend scientific and briefing meetings, work with great and passionate people and to grow my personal skillset. I am particularly thankful to my colleagues at the Innovation and Research Task Force, especially Jordi Llinares Garcia who was my mentor and support at EMA and who sadly passed away recently. Last but not least, a big thanks to EATRIS C&S for supporting and enabling my secondment, I am very happy and proud to be part of such a dedicated and passionate team.



Pinworm asleep 2015

financial summary

The amounts stated below concerning the figures 2021 and 2020 have been derived from the audited financial statements 2020 and 2021 of EATRIS ERIC.

Figure 1 - Income and operating result

	Annual report 2021 €	Approved report 2020 €	Annual report 2019 €
Contributions income	1,558,370	1,664,608	1,727,651
Grant income	872,438	885,044	355,107
Total income	**2,430,808**	**2,549,652**	**2,082,758**
Salaries and wages	1,289,956	1,157,179	913,304
Recharge to EU projects	-613,468	-546,704	-202,088
Sub total staff	563,072	580,452	448,264
Personnel expenses	**1,239,560**	**1,190,927**	**1,159,480**
Depreciation	7,060	6,318	5,539
Other expenses	405,612	352,403	533,020
Other expenses "project costs EU"	749,009	742,376	299.914
Total expenses	**2,401,241**	**2,292,024**	**1,997,953**
Total operating result	**29,567**	**257,628**	**84,805**

Figure 2 – Analysis of the balance sheet

Below we have included an analysis on the balance sheet as per 31 December 2020 versus 31 December 2019:

	2021	2020	Analysis
Activa	€'000	€'000	
Tangible fixed assets	15.8	16.6	The book value of the tangible fixed assets remained broadly similar to 2020, plus regular depreciation.
Current receivables	335	372	
Cash at banks	2,107	2,014	Cash at banks increased mainly due to an increase current liabilities.
	2,458	**2,402**	

	2021	2020	Analysis
Equity & Liabilities	€'000	€'000	
Reserves	717	687	The reserve increased with a net of €29K, equal to the positive result of the financial year.
Current liabilities	1,741	1,715	The increase is caused by grant advance payments.
	2,458	**2,402**	

meet the community

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Senior Science and Business Strategy Developer

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Scientific Director

Anne Charlotte Fauvel
Head of EU Affairs

Anton Ussi
Operations & Finance Director

Ben Lydall
Finance & Sustainability Specialist

Camilla Santinelli
Grants Administrator

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Team Assistant & IT Coordinator

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Clinical Project Director

Eliis Keidong
EU Project Manager

Emanuela Oldoni
Scientific Programme Manager Biomarker Platform

Florence Bietrix
Head of Operations

Frank de Man
Advisor to the Executive Board

Gary Saunders
Data Director

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Junior Communications Manager

Rebecca Ludwig
Head of Training

Rosan Vegter
Senior Scientific and Training Manager

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Scientific & SME Outreach Manager

Tamara Carapina
Senior Legal Counsel

Dora Wrona
Office Administration Assistant

BoG, BoND and National Coordinators

Country	Board of Governors	Board of National Directors	National Coordinator
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	Milena Glavcheva	*Rumen Pankov*	
CROATIA			
	Jelena Ilic Dreven	Fran Borovecki	
	Smiljka Vikic-Topic	*Nada Bozina*	
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	Marian Hajdúch		
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	Riina Vuorento		
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	Simone Mergui	*Simone Mergui*	
ITALY			
	Maria Ferrantini	Franca Moretti	
	Francesca Capone	*Francesca Capone*	
LATVIA			
	Uldis Berkis	Liene Nikitina-Zake	
		Uldis Berkis	
		Zaiga Nora-Krukle	
LUXEMBOURG			
	Jean-Claude Milmeister	Frank Glod	Iris Egner
	Lynn Wenandy		
NORWAY			
	Marianne Gronsleth	Janna Saarela	Anita Kavlie
PORTUGAL			
	Rui Santos Ivo	Claudia Maria Coelho de Faria (Chair)	Dinah Duarte*
	Helena Baião		Helena Baião
SLOVENIA			
	Albin Kralj	Irena Mlinaric-Rascan	Žiga Jakopin
	Irena Mlinaric-Rascan		
SPAIN	Pilar Gayoso		
	Gonzalo Arévalo Nieto*	Joan Comella	Marta Marin
	Cristobal Belda	*Fatima Nunez*	
SWEDEN			
	Maria Nilsson	Pontus Aspenström	Ulrika Bäckman
	Håkan Billig (Chair)		
THE NETHERLANDS			
	Saco de Visser	Gerrit Meijer	
		Jan-Willem Boiten	

** Left in 2021*

Alternate contacts (in italics)

Abbreviations

A	**AI**	Artificial Intelligence
	ATMP	Advanced Therapy Medicinal Products
B	**BBMRI-ERIC**	Biobanking and BioMolecular Resources Research Infrastructure
	BMS RI	Biological and Medical Research Infrastructures
	BoG	Board of Governors
	BoND	Board of National Directors
	BPRC	Biomedical Primate Research Centre
C	**C-COMEND**	Competency-based course on Translational Research and Medicines Development
	CAR-T Cell	Chimere Antigen Receptor Cell
	CDRD	Centre for Drug Research and Development
	CEST/MRI	Chemical Exchange Saturation Test - Magnetic Resonance Imaging
	CORBEL	Coordinated Research Infrastructures Building Enduring Life-Science Services
E	**E&T**	Education and Training
	EANM	European Association of Nuclear Medicine
	EARL	EANM Research Ltd.
	EATRIS -C&S	EATRIS Coordination and Support Office
	EATRIS	European Infrastructure for Translational Medicine
	EC	European Commission
	ECRIN	European Clinical Research Infrastructure Network
	EFPIA	European Federation of Pharmaceutical Industries and Associations
	EIC	European Innovation Council
	EMA	European Medicines Agency
	EMMRI	Executive Masters in Management of Research Infrastructures
	EPF	European Patients' Forum
	EPND	European Platform for Neurodegenerative Diseases
	EPTRI	European Paediatric Translational Research Infrastructure
	EQI	EATRIS Quality Initiative
	ERA	European Research Area
	ERIC	European Research Infrastructure Consortium
	ESFRI	The European Strategic Forum for Research Infrastructures
	ESMO	European Society for Medical Oncology
	EU	European Union
	EU-AMRI	Alliance of Medical Research Infrastructures
	EUPATI	European Patients' Academy on Therapeutic Innovation
	EURIPRED	European Infrastructure for Poverty-Related Diseases
	EVI	European Vaccine Initiative
G	**GDPR**	General Data Protection Regulation
	GSK	GlaxoSmithKline
H	**HE**	Horizon Europe
	HESI	Health and Environment Sciences Institute
	HTA	Health Technology Assessment
	HTS	High Throughput Screening
I	**IBBL**	Integrated BioBank of Luxembourg
	ICM	Institut du Cerveau et de la Moelle épinière – Brain & Spine Institute

	ICO	Industry Contact Officer
	ILO	Industry Liaison Officer
	IMI	Innovative Medicines Initiative
	IRP	Integrated Research Platform
	ISCT	International Society for Cellular Therapy
J	**JTC**	Joint Transnational Call
L	**LAC**	Latin American and Caribbean
	LoE	Letter of Engagement
	LS RI	Life Science Research
	LTP	Linked Third Party
M	**MEB**	Medicines Evaluation Board
	MIRCen	Molecular Imaging Research Center
	MoU	Memorandum of Understanding
	MRCA	Master Research Collaboration Agreement
N	**NASH**	Non-Alcoholic Steatohepatitis
	NC	National Coordinator
	NeurATRIS	French Node of EATRIS
	NHP N	on-human primates
	NIBSC	National Institute for Biological Standards and Control
	NIH-NCATS	US National Institutes of Health - National Center for the Advancement of Translational Science
	NTNU	Norwegian University of Science and Technology
P	**PAC**	Patient Advisory Comm
	PET/CT	Positron Emission Tomography - Computed Tomography
	PET/MRI	Positron Emission Tomography - magnetic resonance imaging
	PI	Principal Investigator
	PMC	Personalised Medicine Coalition
	PoC	Proof of Concept
R	**R&D**	Research and Development
	RI	Research Infrastructure
	RIS	Regulatory Information System
	RITRAIN	Research Infrastructures Training Programme
S	**SAB**	Scientific Advisory Board
	SMEs	Small and medium-sized enterprises
	SOP	Standard Operating Procedure
	SRIA	Scientific Research and Innovation Agenda
T	**TIA**	Therapeutic Innovation Australia
	TRANSVAC	European Network of Vaccine Research and Development
	TNA	Transnational Access
	TT	Translation Together
U	**UMC**	University Medical Centres
V	**VHIR**	Vall d'Hebron Research Institute
W	**WP**	Work Package

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Mercedes Arrúe Gonzalo - Nebulosa 2021

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European infrastructure
for translational medicine