Deliverable D5.2

Consolidated list of all labs using GE in Europe

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Changes with respect to the DoA (Description of Action)

This first version of the deliverable is in line with the DoA. Additionally, we suggest regular updating of this deliverable to allow for the inclusion of additional labs.

Table of Content

1. Summary of results

This deliverable aims to establish a consolidated list of all labs using Genome Editing (GE) techniques in farmed animals in Europe. An initial list of contacts was developed using web-based searches of organisations and institutions in Europe that mention GE on their outward facing web pages. These contacts were then invited to fill in a survey identifying whether their institute or organisation currently uses GE techniques. Unfortunately, the number of respondents to the survey was low, which probably reflects that there is still some reluctance to communicated widely where the technology is being used. We were, however, able to identify five European labs working with GE techniques: CIGENE, GABI, The Roslin Institute, University of Edinburgh, the Institute for Marine Research and CRISPR Functional Genomics Lab. The field of new genomic techniques (NGTs) is changing quickly. Therefore, the list of labs working on GE in farmed animals that is established in this deliverable requires regular updating. Our aim is to distribute the survey again in 2024 and and expect more impact through EuroFAANG networks to add additional labs and more detail to the list. Once a substantial number of labs are connected on our map, more specific information about facilities and capabilities will be collected to help to move towards realising an infrastructure of inter-connected labs providing transnational (TNA) access to GE for G2P research in farmed animals.

2. Introduction

The EU Horizon Europe research program funds the EuroFAANG Research Infrastructure (RI) project under *HORIZON-INFRA-2022-DEV-01.* This call focuses on developing, consolidating and optimizing the European research infrastructure landscape and maintaining global leadership, ultimately creating a world-leading, coherent, agile and attractive RI landscape in Europe. This project will look at how to develop the concept for a research infrastructure for farmed animal genotype to phenotype research in Europe, the EuroFAANG RI project. RIs are facilities, resources and services used by the research communities to conduct research and foster innovation in their fields. They include major scientific equipment (or sets of instruments), knowledge-based resources such as collections, archives and scientific data, e-infrastructures, such as data and computing systems and communication networks and any other tools essential to achieve excellence in research and innovation.

The EuroFAANG RI aims to streamline the use of interdisciplinary capabilities for Genotype-to-Phenotype (G2P) research in terrestrial and aquatic farmed animals and provide transnational access to all of the relevant facilities, expertise and knowledge to European stakeholders. This will address the need to bring together national facilities at the pan-European level in the field of animal genetic resources, phenotyping and breeding, and animal health, which was identified as a gap in the infrastructure landscape by the 2021 ESFRI Roadmap. The proposal builds on the foundation of six current H2020 EuroFAANG projects, AQUA-FAANG, BovReg, GENE-SWitCH, HoloRuminant, GEroNIMO and RUMIGEN. It also connects with existing infrastructures for data management and animal agriculture in the European research infrastructure landscape.

Within EuroFAANG RI project, work package (WP) 5 aims to develop a framework for sharing and expanding capabilities in genome editing as a route to application for FAANG data for understanding the genotype-to-phenotype link in farmed animals (1). To achieve this it has three main objectives or tasks:

I. Provide a route to the application of FAANG data in vitro by creating a framework for access to high-throughput phenotyping (HTP) platforms to validate candidate causal variants.
II. Devise a framework to facilitate access to genome editing technology in vivo in the form of: i) animal facilities equipped to handle/raise and conserve genome-edited animal lines across generations and ii) in silico modelling studies to predict the effect of introducing an edit into a breeding population.
III. Creation of a European think-tank on genome editing in farm animals, connecting national ethics committees, projects and research infrastructures.

Deliverable D5.2 is part of the second task of WP5. The aim of Task 5.2 is to facilitate access to genome editing technology *in vivo* and *in vitro* by connecting animal facilities

doing *in vivo* work and laboratory facilities performing genome editing *in vitro* using organoids and cell lines. In D5.2, we will explore how the EuroFAANG research infrastructure could provide transnational access (TNA) to cryopreserved edited animal lines, cell lines and organoid systems, facilities to generate these resources *in vivo* and *in vitro,* and the expertise required. The aim of deliverable 5.2 is to create a consolidated list of all labs using genome editing technologies in Europe. Creating this list will help determine the geographical spread of genome editing facilities, working on farmed animals using in vivo and in vitro systems, across Europe. It will also explain how the EuroFAANG research infrastructure could provide transnational access (TNA) to cryopreserved edited animal lines, cell lines and organoid systems, facilities to generate these resources *in vivo* and *in vitro,* and the expertise required. The overarching goal is to improve accessibility to genome editing technology across the European research and development space for genotype to phenotype research in farmed animals.

3. Results

Methodology

The aim of deliverable 5.2 was to create a consolidated list of all labs using genome editing technologies in Europe. Creating this list will help determine the geographical spread of genome editing facilities across Europe. It will also explain how the EuroFAANG research infrastructure could provide transnational access (TNA) to cryopreserved edited animal lines, cell lines and organoid systems, facilities to generate these resources *in vivo* and *in vitro,* and the expertise required.

The first part of this deliverable involved a comprehensive search of web-based information to identify research labs using genome editing technologies in farmed animals. This information was collated into a table with the institution's name, country and contact information. The collected information by web-based searches was to be verified in a second step. The final contact list contained 83 institutions and is included as **Annex 1** (without associated contact information).

For this second step, a survey was created, which was sent to the entire contact list (Annex 1). The survey was set up to consolidate the web-based searchers and gather more in-depth information on the research being performed by each lab. For this purpose, the following questions were included:

I. What is your name?
II. What is your affiliation?
III. What type of stakeholder group do you represent?
    a. Breeding company
    b. Academic stakeholder
    c. Other
IV. Do you perform genome editing (GE), and/or do you use GE technologies?
    a. Yes
    b. No

The implementation of conditional formatting ended the survey after selecting no in question four. In case of yes, the following additional questions were included:

V. Do you use your own or an external lab?
    a. Own lab
    b. External lab
VI. Name of the lab?
VII. Location of the lab?
VIII. Does your GE research focus on:
    a. Plants
    b. Animals
    c. Micro-organisms
IX. How do you conduct your research?
    a. In vivo
    b. In vitro
    c. Both
X. On what type of research is your research focused?
    a. Farm animals
    b. Lab animals
    c. Both
XI. What is your research focus?
    a. Agricultural
    b. Biomedical
    c. Both
XII. Please describe your research in one or two sentences

As mentioned, the survey was disseminated via the contact list developed at the start and was also shared within the AnGenMap internet discussion group (https://www.animalgenome.org/community/angenmap/), which includes many researchers in the field of animal genome research from across the globe.

Overview of survey outcomes

Unfortunately, the number of respondents to the survey was very low. After dissemination of the survey, 20 responses were received from which one needed to be omitted due to being non-European. In total, 7 institutes positively answered the survey on using Genome Editing technologies; these are shown in **Table 1**.

Table 1 Overview of the institutes and corresponding labs that responded positively to using genome editing techniques in the survey.

Institution	Own lab or external	Lab	Location	Research focus
Norwegian University of Life Sciences (NMBU)	Own	Genome Biology (CIGENE)	Ås, Norway	Animals
INRAE	Own	GABI	Jouy en Josas, France	Animals
INRAE	Own	Fish Physiology and Genomics	Rennes, France	Animals
The Roslin Institute, University of Edinburgh	Own	Roslin Institute Labs	Edinburgh, Scotland	Animals
Institute of Marine Research	Own	Institute of Marine Research	Matre, Norway	Animals
Karolinska Institutet	Own	CRISPR Functional Genomics	Stockholm, Sweden	Animals
Genus PIC[1]	External	Roslin Institute Labs	Edinburgh, Scotland	Animals
Kmetijski inštitut Slovenije	Own	Kmetijski inštitut Slovenije	Ljubljana, Slovenia	Micro-organisms
Institute of Genetics and Animal Biotechnology of the Polish Academy of Sciences	Own	Team for Genome Editing and Transcriptional Regulation	Magdalenka, Poland	Animals

[1]Genus PIC collaborates on projects with the Roslin Institute, and it uses other external laboratories outside of Europe.

Detailed information on labs using genome editing technologies

In the following section, additional information acquired from the survey for all labs with animals as the research focus is provided, including a short description of their own research. FBN did not answer the survey but is also using genome editing technologies.

Genome Biology (CIGENE) lab *Academic stakeholder*	
In vitro or in vivo?	**Research focus**
In vitro	Farm animals
Research description: Developing tools and optimizing protocols for GE in salmonids, cattle and pig. Using these to improve understanding of genotype-phenotype links and investigate genomics underlying sustainability traits.	
More information: https://cigene.no	

GABI *Academic stakeholder*	
In vitro or in vivo?	**Research focus**
In vitro	Lab and farm animals
Research description: establishing in vitro cell system to perform genotype-to-phenotype studies; early pig and bovine embryonic development and pluripotency	
More information: https://www6.jouy.inrae.fr/gabi_eng/	

The Roslin Institute Labs *Academic stakeholder*	
In vitro or in vivo?	**Research focus**
In vitro and in vivo	Farm animals
Research description: Producing animal models of human diseases where existing models are not sufficient for translation. Alternatively alter animal genomes to improve their utility for agricultural settings.	
More information: https://www.ed.ac.uk/roslin	

Institute for Marine Research *Academic stakeholder*	
In vitro or in vivo?	**Research Focus**
In vitro and in vivo	Farm animals
Research description: Functional genomics in Atlantic salmon	
More information: https://www.hi.no/en	

CRISPR Functional Genomics lab *Academic stakeholder*	
In vitro or in vivo?	**Research Focus**
In vitro and in vivo	Farm animals
Research description: We are a research facility that uses CRISPR mainly to establish knockout and knocking cell lines. In addition, the majority of our facility works on CRISPR screens in cell lines.	
More information: https://www.scilifelab.se/units/crispr-functional-genomics/	

Team for Genome Editing and Transcriptional Regulation *Academic stakeholder*	
In vitro or in vivo?	**Research Focus**
In vitro	Farm animals
Research description: Functional Validation of Gene Mutations and SNPs using Mammalian Cell Lines	
More information: https://www.igbzpan.pl/en/	
Fish Physiology and Genomics *Academic stakeholder*	
In vitro or in vivo?	**Research Focus**
In vivo	Farm and lab animals
Research description: Gene function analysis to produce sterile farmed fish	
More information: https://lpgp.rennes.hub.inrae.fr	
FBN *Academic stakeholder*	
In vitro or in vivo?	**Research Focus**
In vitro	Farm animals
Research description: Gene editing (CRISPR for knock-out) is used in various cell culture systems to investigate the regulation of genes and their effects on the transcriptome	
For more information: https://www.fbn-dummerstorf.de/	

In the map below (Figure 1), the geographical locations of the included labs are shown. The map also includes whether GE techniques are used in vivo or in vitro and whether the research focus of the lab is 'lab animals' (including mice, rats and other small animal models) or 'farm animals' (including pigs, sheep or aquaculture species). This map will be updated when more labs are included on the consolidated list.

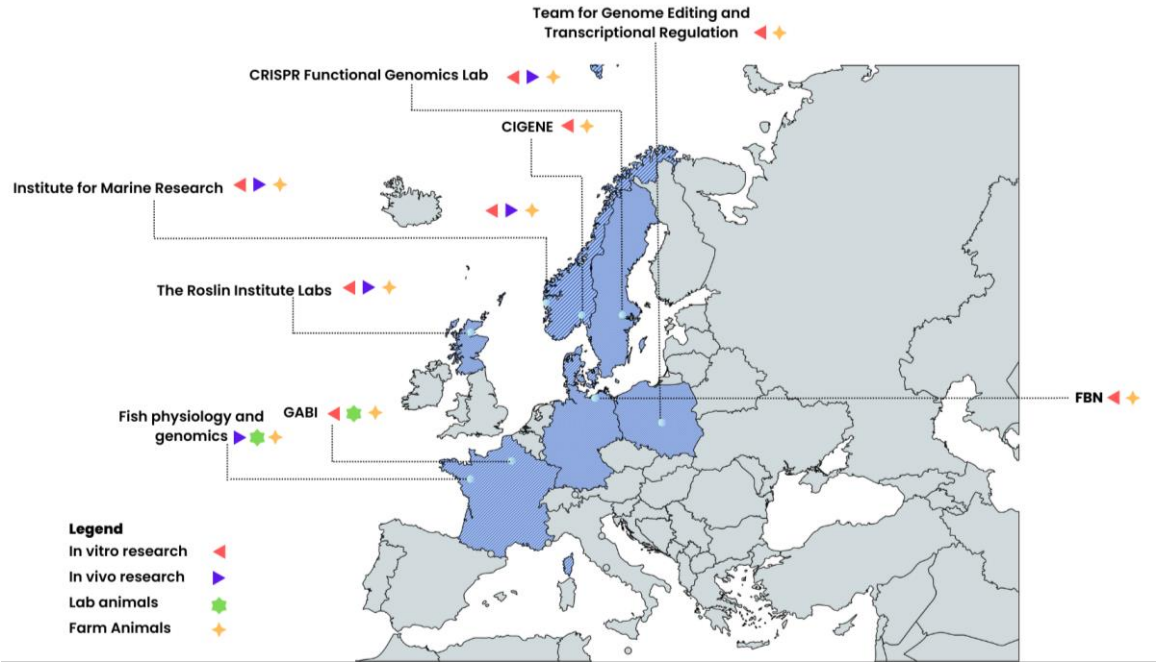

Figure 1 Map of Europe with all institutes and corresponding labs that responded positively to using genome editing techniques in the survey (from Table 1).

Recommendations

The field of new genomic techniques (NGTs) is changing quickly. Therefore, the list of labs working on GE in farmed animals that are established in this deliverable requires regular updating. We intend to update this list annually. With technological advancements and changing regulations, more labs may enter the playing field and be more willing to answer questions about the use of GE technology. We also plan to be more strategic over the coming year and to ask specific labs within the EuroFAANG H2020 projects and partner in their networks that we know are using GE if they can respond to specific set of pre-defined questions, relating to facilities and capabilities and the potential for TNA, rather than to the survey.

The low level of respondents to the survey suggests that yet, even when labs engage in GE, being in micro-organisms, lab- or farm animals, willingness to share such details might be a barrier. To allow for more insight into this barrier and how it affects this deliverable, close collaboration will be sought with D5.3 and D5.5. For D5.5 the 'think-tank on genome editing' has now been formed and has successfully held its first meeting (see D5.5). As such we can ask experts in the think-tank to suggest ways to overcome this barrier and the implications it has for TNA to genome editing technologies in Europe.

The aim is not only to consolidate this list but also to connect these facilities performing GE activities ensuring fair and equitable TNA to GE technologies for G2P research for farmed animals in Europe. These links will be further consolidated by collaboration with WP4 (*Development of a framework for biobanking and use of in vitro cellular models)* to

optimize the potential for sharing expertise and capabilities in in vitro models, to be used as alternative and to better focus the further use of in vivo GE in farmed animals.

As this list is updated over the course of the EuroFAANG project we plan to collect more information to connect these labs to facilitate Transnational Access (TNA) to expertise and facilities via the EuroFAANG RI project. The recommended information to be acquired can be found in Table 2.

Table 2 Recommendations for additional information to collect in establishing an infrastructure for TNA

Country	Country in which the lab is based
Funding type	Public, private
Type of organisation	Private company, NGO, research institute, academics
Address	Address of the laboratory
Website	Website of the laboratory
Contact	E-mail address of the designated contact person
Expertise	An overview of the key expertise of the laboratory
Additional information	Any additional information to share, such as the capacity of the lab, equipment available and the services offered

The recommended additional information has been gathered for three out of nine labs (from seven institutions) that answered the survey. We have chosen these labs as examples as they are partners within the EuroFAANG RI project and as such we can share the associated details. The tables below will be used as a template for future labs which will be added to this list once they have provided details. To provide precise information for future TNA, it is essential to collect specific data on the tools and resources of the labs. This could be expanded for the expertise of staff and training opportunities.

Table 3 Additional information about GABI for TNA

Name and Country *Country in which the lab is based*	**GABI** France
Funding type *Public, private*	
Type of organisation *Private company, NGO, research institute, academics*	Research Insititute/Academics
Address *Address of the laboratory*	UMR GABI Domaine de Vilvert 78352 JOUY-EN-JOSAS cedex - FRANCE
Website *Website of the laboratory*	https://www6.jouy.inrae.fr/gabi_eng/
Contact *E-mail address of the designated contact person*	Michèle Tixier-Boichard michele.tixier-boichard@inra.fr *Member of the EuroFAANG RI Project*
Expertise *An overview of the key expertise of the laboratory*	The scientific interests of GABI aim at understanding and exploiting animal genetic variability to analyze the construction of phenotypes, the interactions with microbial ecosystems and more broadly with the environment, within the context of the agroecological transition
Additional information *Any additional information to share, such as the capacity of the lab, equipment available and the services offered*	**Experimental Platforms and Devices** • The @BRIDGe platform (animal Biological Resources for Integrated and Digital Genomics): The range of services and equipment includes the conservation of the biological sample and its analysis at the molecular, cellular or tissue level. • The Transmission Electron Microscopy service of the MIMA2 multi-site platform: Multi-scale imaging, electron and photonic microscopy, in vivo imaging and image analysis

	• INRAE Experimental Units: This INRAE-specific facility hosts numerous genetic resources to conduct various interdisciplinary research programs. • The Mouse Transgenesis Workshop: an experimental facility dedicated to the breeding of mice in a confined environment. **Other research facilities** • The objectives of the CRB-Anim Biological Resource Center (INRAE ISC Infrastructure): CRB-Anim aims to integrate and strengthen biological resource centers (BRCs) conserving reproductive material and genomic material for domestic animal species farmed in France, mammals, birds, fish and shellfish.. • The National Observatory of Bovine Anomalies (ONAB): Observation of the emergence and clinical description of genetic anomalies, at the national level between the different actors.

Table 4 Additional information about The Roslin Institute Labs for TNA

Name and Country *Country in which the lab is based*	**The Roslin Institute Labs** **University of Edinburgh** Scotland
Funding type *Public, private*	Public
Type of organisation *Private company, NGO, research institute, academics*	Research Institute
Address *Address of the laboratory*	The Roslin Institute, University of Edinburgh, Easter Bush Campus, Midlothian, Edinburgh, EH25 9RG.
Website *Website of the laboratory*	https://www.ed.ac.uk/roslin
Contact *E-mail address of the designated contact person*	Emily Clark Emily.Clark@roslin.ed.ac.uk *Member of the EuroFAANG RI Project*
Expertise *An overview of the key expertise of the laboratory*	Producing animal models of human diseases where existing models are not sufficient for translation. Editing of farmed animal genomes to improve their utility for agricultural settings, improve disease resistance, health and welfare.
Additional information *Any additional information to share, such as the capacity of the lab, equipment available and the services offered*	The Roslin Institute, University of Edinburgh is a world leader in genome editing in livestock. Researchers at the Roslin Institute have generated pigs that are resistant to PRRSV (2), chickens that are resistant to avian influenza (3) and pioneered the use of surrogate host technology in poultry production (4) amongst other projects. They also have significant expertise in the use of *in vitro* systems and CRISPR screens to identify genome editing targets for resistance e.g. to African Swine Fever in porcine cells (5). Specific capacity and lab equipment at the Roslin Institute are as follows: Edinburgh Genomics Sequencing Facility National Avian Research Facility Centre for Comparative Pathology Bioimaging & Flow cytometry Large Animal Research and Imaging Facility for Large Animal Models Proteomics and Metabolomics Facility

	Immunological Toolbox Research Aquaria for aquaculture research Bioinformatics Biological Research Facility for Rodent Models Cell culture facilities for *in vitro* systems

Table 5 Additional information about FBN Labs for TNA

Name and Country *Country in which the lab is based*	**FBN Dummerstorf** Germany
Funding type *Public, private*	
Type of organisation *Private company, NGO, research institute, academics*	Research Institute
Address *Address of the laboratory*	Wilhelm-Stahl Allee 2 18196 Dummerstorf
Website *Website of the laboratory*	Fbn-dummerstorf.de
Contact *E-mail address of the designated contact person*	Expertise und Service (fbn-dummerstorf.de)
Expertise *An overview of the key expertise of the laboratory*	Gene editing (CRISPR) is used in various cell culture systems to investigate the regulation of genes and their effects on the transcriptome
Additional information *Any additional information to share, such as the capacity of the lab, equipment available and the services offered*	• Service group Next-Generation-Sequencing The NGS service group from the Department of Genome Biology therefore offers its expertise as a service for FBN-internal and external collaborations in the field of functional genome analysis. Furthermore, we develop specific methodological protocols for NGS projects and questions for functional genome analysis of farm animals on request. Our NGS sequencer NextSeq 2000 from Illumina works with a high-throughput flowcel. We offer sequencing of DNA, RNA and the microbial 16s metagenome. Our service extends to the following established sequencing methods RNA-Seq (total RNA, mRNA, depletion protocols) miRNA-Seq ChIP-Seq

	DNA methylation sequencing (RRBS and WGBS) 16S/18S-Seq metagenome. ScRNA-Seq • Metabolomics Platform Using state-of-the-art mass spectrometry (MS) equipment, FBN's metabolomics platform offers the simultaneous analysis, characterization and quantification of hundreds of different metabolites, providing the ideal prerequisite for understanding biological processes in livestock. Common metabolites include proteinogenic amino acids, organic acid metabolites, non-proteinogenic amino acids, carbohydrates and fatty acids. • Cytometry Service Group We provide methods of flow cytometry, fluorescence-activated cell sorting (FACS), histology, microscopy, confocal laser scanning microscopy, image cytometry and image analysis, as well as live cell imaging.

With regular annual updating of the consolidated list, new additions of labs and other facilities will be acquired. Once a substantial number of labs are connected on our map, acquiring the recommended information will become useful for the EuroFAANG RI project to ensure access across Europe and maximise the potential of GE technology for farmed animal G2P research.

4. Conclusions

The aim of deliverable 5.2 was to create a consolidated list of all labs using genome editing in Europe to help facilitate fair and equitable TNA to GE technology for G2P research in farmed animals via the EuroFAANG RI project. Creating this list has provided a first assessment of the geographical spread of genome editing facilities across Europe. It will also help assess how and to what extent the EuroFAANG research infrastructure could provide TNA to in vitro systems as an alternative and to better focus the use of in vivo GE in farmed animals. This could happen, for example, via TNA to cryopreserved edited animal lines, cell lines and organoid systems, the facilities to generate these resources *in vitro,* and the expertise required. Currently, the consolidated list of labs using GE in farmed animals contains only 5 laboratories. We believe this is only a small number of labs that are actually using GE and this is due to a hesitancy to complete the survey and outwardly acknowledge use of GE, as well as some general lack of enthusiasm towards survey based approaches for information gathering. As regulations relax and societal perceptions evolve this effect may also change and we will be able to provide a more accurate picture. Over the coming year we will ask specific labs for details and use a focused approach to try and build an accurate picture of the expertise and capacity available across Europe for GE. As the field is rapidly evolving, this list will be regularly updated, at least annually. Once a sufficient number of laboratories, spanning good geographical coverage of the European continent, are connected on our map, the plan is to proceed with the collection of additional information and data to establish and consolidate an infrastructure for potential TNA activities.

5. References

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6. Annexes

List of labs contacted

Table 5 List of labs contacted for the survey, including their country of origin

Lab	Country
CRISPR Therapeutics AG	Switzerland
Cellectis	France
Novartis Institutes for BioMedical Research	Switzerland
The Francis Crick Institute	UK
École Polytechnique Fédérale de Lausanne (EPFL),	Switzerland
Institute of Molecular Biology (IMB),	Germany
Max Planck Institute of Molecular Cell Biology and Genetics	Germany
Wellcome Trust Sanger Institute	UK
University of Cambridge	UK
ETH Zurich	Switzerland
Institute for Research in Biomedicine (IRB Barcelona)	Spain
Center for Genomic Regulation (CRG)	Spain
Earlham Institute	UK
MRC Laboratory of Molecular Biology	UK
Karolinska Institute	Sweden
University of Copenhagen	Denmark

Norwegian Institute of Science and Technology NTNU	Norway
University of Helsinki	Finland
Leiden University - goncalves	Netherlands
EMBL - Pausch lab	Germany
Eurofins genomics	Germany
Ludwig-Maximilians-Universität München	Germany
University of Edinburgh	UK
Institute of Genetics and Animal Breeding the Polish Academy of Sciences	Poland
University of Nottingham	UK
Pasteur Institute	France
Kings College London, Genome Editing and Embryology Core (GEEC) Facility	UK
The Royal Veterinary College	UK
Norwegian Institute of Marine Research	Norway
TEAGASC	Ireland
San Raffaele Telethon Institute for Gene Therapy	Italy
University of Pavia	Italy
Aarhus University	Denmark
Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut	Germany
CIMA Universidad de Navarra	Spain

Vienna BioCenter	Austria
University of Geneva	Switzerland
University of Oslo	Norway
University of Oxford	UK
University of Turin	Italy
Universitat Pompeu Fabra	Spain
Austrian Agency for Health and Food Safety	Austria
Insititute for Agricultural and Fisheries Research	Belgium
Walloon Agricultural Research Centre	Belgium
AgroBioInstitute	Bulgaria
Biotechnological Analyses Division Seed Testing Laboratory Institute for Seed and Seedlings Croatian Centre for Agriculture, Food and Rural Affairs	Croatia
Agricultural Research Institute	Cyprus
State General Laboratory	Cyprus
Crop Research Institute - Reference Laboratory for GMO Detection and DNA fingerprinting	Czech republic
State Veterinary Institute Jihlava	Czech republic
Laboratory of DNA analysis department of gene technology - Tallinn University of Technology	Estonia
Agricultural Research Centre	Estonia

Genetic Identification Laboratory of the Hellenic Agricultural Organization	Greece
BIOMI ltd	Hungary
Public Analyst Laboratory	Ireland
Plant Health Laboratory, Seed Certification Division,Backweston Agri-labs	Ireland
Veterinary Public Health Institute for Lazio and Toscana Regions; National Reference Centre for GMO Analysis	Italy
Institute of Food Safety, Animal Health and Environment "BIOR"	Latvia
National Phytosanitary Laboratory	Latvia
National Food and Veterinary Risk Assessment Institute Molecular Biology and GMO Department	Lithuania
Public Health Laboratory	Lithuania
National Veterinary Instittue	Norway
National Veterinary Research Institute in Pulawy	Poland
Genetically Modified Organism Controlling Laboratory	Poland
Polish academy of sciences	Poland
Institute for Diagnosis and Animal Health,	Romania
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca	Romania
State veterinary and Food Institute Dolny Kubin	Slovakia
Agricultural Institute of Slovenia	Slovenia
National Institute of Biology	Slovenia

Biological Quantitative Analyses Service Center for Research in Agricultural Genomics	Spain
Laboratory Agroalimentary of the Spanish Ministry of Agriculture	Spain
Agroscope Liebefeld – Posieux ALP – Swiss Federal Research Station for Animal Production and Dairy Products - Posieux	Switzerland
Institut National de Recherche Agronomique –INRAE – Jouy-en-Josas Cedex	France
Štátny veterinárny a potravinový ústav - Bratislava (State Veterinary and Food Institute Bratislava)	Slovakia
Czech Academy of Sciences	Czech republic
Instituto de Agricultura Sostenible (IAS-CSIC), Córdoba, Spain	Spain
Wageningen University	Netherlands
Centre of Microbial and Plant Genetics	Belgium
Hubrecht Institute	Netherlands
ARRIGE	Worldwide
Genus PIC	Worldwide
Norwegian University of Life Sciences (NMBU)	Norway