GENE-SWitCH

Project ID: 817998
Funded under:
H2020-EU.3.2.1.1. - Increasing production efficiency and coping with climate change, while ensuring sustainability and resilience
H2020-EU.3.2.3.1. - Developing sustainable and environmentally-friendly fisheries

The regulatory GENomE of SWine and CHicken: functional annotation during development

From 2019-07-01 to 2023-06-30, ongoing project

Project details

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<th>Total cost:</th>
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<th>EU contribution:</th>
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<td>EUR 5 999 886</td>
<td>RIA - Research and Innovation action</td>
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Objective

GENE-SWitCH aims to deliver new underpinning knowledge on the functional genomes of two main monogastric farm species (pig and chicken) and to enable immediate translation to the pig and poultry sectors. The activation status of functional genome sequences varies across time and space, and in response to environmental perturbations. In full coordination and synergy with global effort and ongoing projects of the Functional Annotation of ANimal Genomes (FAANG) community, we will characterize the dynamics (“switches”) of the functional genome from embryo (chicken) and fetus (pig) to adult life by targeting a panel of tissues relevant to sustainable production. New expression QTL data in pigs and existing high-resolution QTL data in chicken will be used for developing innovative genomic predictive models that integrate functional annotations, and these models will be validated in commercial pig and poultry populations. In addition, nutritional epigenetic data will allow evaluation of the influence of maternal diet on the epigenome of the pig fetus and whether such effects persist until post-weaning. These open-shared datasets will conform fully with FAANG standards and add valuable knowledge on genetic and epigenetic variation of functional elements to FAANG. A comprehensive plan of dissemination and outreach activities to a large audience of stakeholders will be implemented. The GENE-SWitCH consortium brings together partners representing pan-European excellence (including the academic institutions which pioneered FAANG) and world-leading animal breeding and biotech industry in a true co-creation effort. Overall, GENE-SWitCH will contribute to the global FAANG effort considerably, demonstrate how functional annotation of genomes can foster the advancement of genomic selection for immediate benefit to the breeding industry, and produce cutting-edge research paving the way to new studies and strategies for sustainable productions.
**Coordinator**

INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE  
Rue De L'Universite 147  
75338 PARIS CEDEX 07  
France

**EU contribution:** EUR 1 195 073

See on map

**Activity type:** Research Organisations

Contact the organisation

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**Participants**

INRA TRANSFERT S.A.  
RUE DU DOCTEUR FINLAY 28  
75015 PARIS  
France

**EU contribution:** EUR 209 750

See on map

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

Contact the organisation

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THE UNIVERSITY OF EDINBURGH  
OLD COLLEGE, SOUTH BRIDGE  
EH8 9YL EDINBURGH  
United Kingdom

**EU contribution:** EUR 905 523

See on map

**Activity type:** Higher or Secondary Education Establishments

Contact the organisation

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WAGENINGEN UNIVERSITY  
DROEVENDAALSESTEEG 4  
6708 PB WAGENINGEN  
Netherlands

**EU contribution:** EUR 971 783

See on map

**Activity type:** Higher or Secondary Education Establishments

Contact the organisation

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EUROPEAN MOLECULAR BIOLOGY LABORATORY  
Meyerhofstrasse 1  
69117 HEIDELBERG  
Germany

**EU contribution:** EUR 710 478

See on map

**Activity type:** Research Organisations

Contact the organisation
UPPSALA UNIVERSITET
VON KRAEMERS ALLE 4
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Sweden

**EU contribution:** EUR 287 500

**Activity type:** Higher or Secondary Education Establishments

**Contact the organisation**

DIAGENODE
RUE DU BOIS SAINT JEAN 3 LIEGE PARK SCIENCE
4102 SERAING
Belgium

**EU contribution:** EUR 548 000

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Contact the organisation**

EUROPEAN FORUM OF FARM ANIMAL BREEDERS
DREIJENLAAN 2K 1060 1061
6703 HA WAGENINGEN
Netherlands

**EU contribution:** EUR 197 357

**Activity type:** Research Organisations

**Contact the organisation**

FEDERAZIONE EUROPEA DI ZOOTECNICA
VIA GIUSEPPE TOMASSETTI 3 A/1
00161 ROMA
Italy

**EU contribution:** EUR 120 687

**Activity type:** Other

**Contact the organisation**

HENDRIX GENETICS RESEARCH, TECHNOLOGY & SERVICES BV
SPoorstraat 69
5831 CK BOXMEER
Netherlands

**EU contribution:** EUR 343 743

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Contact the organisation**
Activity type: Other

Contact the organisation

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