

Contacts

Biodiversity

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Traceability

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Food quality and security

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BioDNA Research Centre



Services and research for the industry

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Introduction

The **Research Centre for Biodiversity and Ancient DNA – BioDNA**, focuses on genome evolution by *studying genetic diversity in animals, plants and microorganism through the analysis of their DNA*.

A deeper knowledge of the information embedded in a species genome allows to better understand the influence of human activities on both terrestrial and aquatic ecosystems, to optimise conservation efforts, and to better manage domestic species genetic variation, with outcomes in both the agronomic and food production fields. By adding both the geographical and time perspective to the analysis of molecular variability, it is possible to shed light on the evolutionary history of those organisms that, since the Neolithic, have accompanied humans during migrations and conquests, ultimately providing new layers of information on human history itself.

BioDNA focuses on three main research topics:

- **Biodiversity**
- **Traceability**
- **Food security, food quality and animal welfare**

Biodiversity – services:

- Genotyping, biodiversity quantification and reconstruction of the evolutionary history of both wild and domestic species;
- Identification of wild and domestic species and/or components of complex biosystems (e.g., soil, food);
- Ancient DNA analysis;
- Genetics and bioinformatics analyses for the identification of harmful/beneficial genes.

Research Group

PAOLO AJMONE MARSAN: group leader, full professor, expert in genetics and genomics

LUIGI BAVARESCO: professor, expert in varieties identification.

LICIA COLLI: expert in population genetics, head of the Ancient DNA laboratory.

ELISA EUFEMI: expert in genetic lab techniques.

LUCREZIA LAMASTRA: expert in chemical lab techniques and environmental sustainability modelling.

Traceability - services:

- GMO identification in the food production chain;
- Analysis of nucleic acids, proteome, fatty acids and metabolome of animal/plant products for traceability purposes.
- Genotyping and cross-analysis of customer-provided samples.
- Identification of plant varieties through genotyping.

Research group

ADRIANO MAROCCO: group leader, full professor in Plant physiology and genetics.

MATTEO BUSCONI: professor, expert in plant biodiversity and molecular traceability of plant-derived products.

ALESSANDRA LANUBILE: expert in molecular biology and RealTime-PCR.

MARCO TREVISAN: full professor, head of the Agilent 6550 iFunnel Q-TOF LC/MS system platform.

NICOLETA SUCIU: expert in chemical lab techniques and chemical traceability.

VITTORIO ROSSI: full professor in Plant pathology, expert in plant disease forecast models

PAOLA BATTILANI: full professor in Defense commodity food, expert in mycotoxin and development of models for predicting fungal growth and mycotoxin production

RINALDO NICOLI ALDINI: researcher in Agricultural entomology, expert in insect taxonomy

EMANUELE MAZZONI: researcher in Agricultural entomology, expert in insects monitoring techniques

ILARIA NEGRI: researcher in Agricultural entomology, expert in insect pests of crops

Food security, food quality and animal welfare - services:

- Microorganisms identification and quantification;
- Microorganisms culture and storage;
- Molecular taxonomy and identification of microbes;
- Physiological indicators of animal welfare (e.g., blood, milk);
- On-farm evaluation of animal welfare (Integrated Diagnostic System for Welfare, SDIB);

Research Group

LORENZO MORELLI: group leader, full professor in Agricultural microbiology.

EDOARDO PUGLISI: associate professor in Agricultural Microbiology, expert in genetics and bioinformatics techniques for microbial DNA analysis.

FABRIZIO CAPPÀ: researcher in Agricultural microbiology, expert in genetics and microbiology lab techniques.

ANNARITA FERRARI: expert in blood analysis techniques.

ERMINIO TREVISI: associate professor in Animal husbandry, expert in animal physiology and animal welfare evaluation.