

EMBL-EBI Bioinformatics resources for exploring functional genomics data

Introduction to EMBL-EBI resources

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9 November 2017





UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

A bit about your speaker...

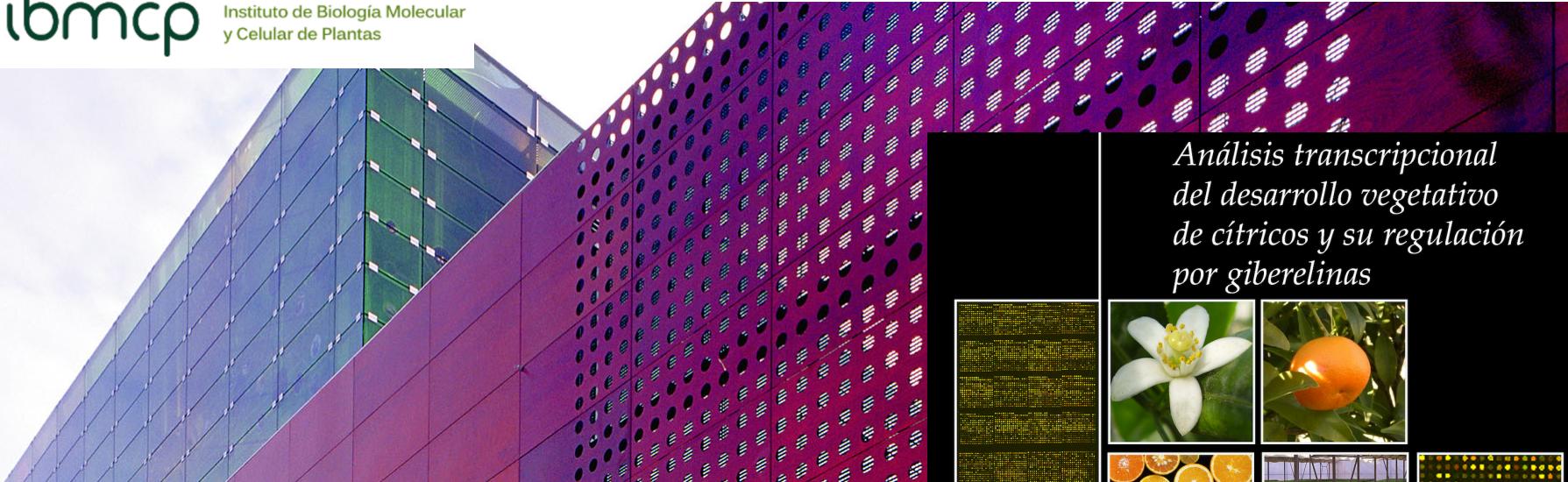


- Agronomic Engineer, major in Biotechnology
- Cloning and characterisation of a GA 20-oxidase gene from *Citrus sinensis* (L.) Osbeck. Prof. José Luis García Martínez

A bit about your speaker...

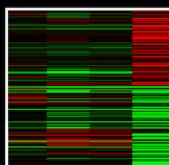
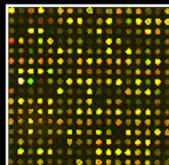


Instituto de Biología Molecular
y Celular de Plantas



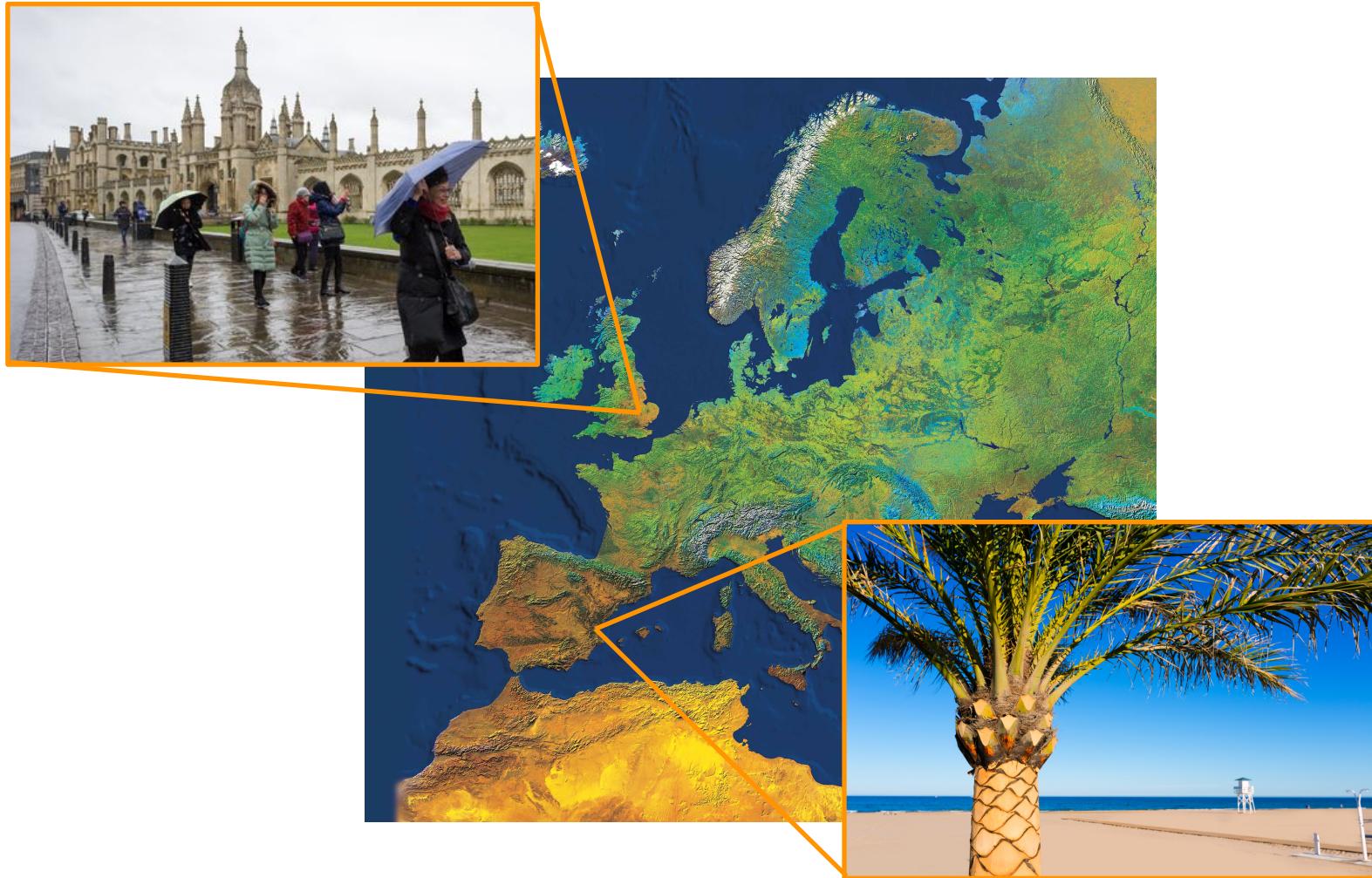
<http://www.ibmcp.csic.es>

*Análisis transcripcional
del desarrollo vegetativo
de cítricos y su regulación
por giberelinas*



TESIS DOCTORAL
Laura Huerta Martínez

A bit about your speaker...

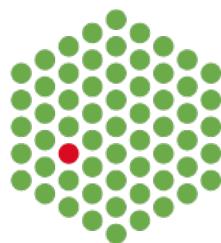




WELLCOME
GENOME
CAMPUS



EMBL-EBI



The European Bioinformatics Institute

The home for big data in biology

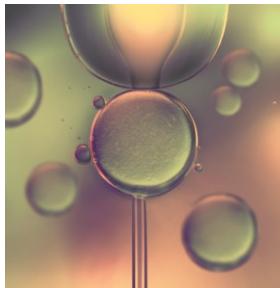
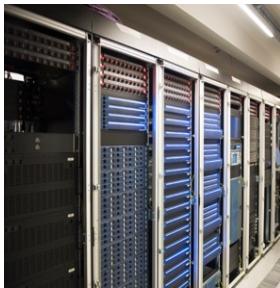


www.ebi.ac.uk

What is EMBL-EBI?

- Europe's home for biological data services, research and training
- A trusted data provider for the life sciences
- Part of the European Molecular Biology Laboratory, an intergovernmental research organisation
- International: 600 members of staff from 60 nations
- Home of the ELIXIR Technical hub.

What is EMBL-EBI? – Our mission



Deliver
scientific
services

Deliver
excellent
research

Train the
next
generation
of scientists

Engage
with
European
industry

Coordinate
bioinformatics
in Europe

OUR MISSION

To provide freely available data and bioinformatics services to all facets of the scientific community in ways that promote scientific progress



OUR MISSION

To contribute to the advancement of biology through investigator-driven research in bioinformatics



OUR MISSION

To provide advanced bioinformatics training to scientists at all levels, from PhD students to independent investigators



OUR MISSION

To help disseminate
cutting-edge
technologies to
industry



OUR MISSION

To support, as an ELIXIR Node, the coordination of biological data provision in Europe



The Wellcome Genome Campus



The European Molecular Biology Laboratory

+80 nationalities

Heidelberg, Germany



Main Laboratory

>1600 personnel

Hinxton, Cambridge, UK



Bioinformatics

6 sites in Europe

Grenoble, France



Structural Biology



Barcelona, Spain



Monterotondo, Rome, Italy



Hamburg, Germany

EMBL member states



Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, the Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and the United Kingdom

Associate member states: Argentina, Australia

Prospect member states: Montenegro, Lithuania



Source of funding

- EMBL-EBI is primarily funded by EMBL member states.
- Other major funders:
 - European Commission
 - Research Councils UK
 - National Institutes of Health
 - Wellcome Trust
 - Industry Programme



How we are organised

Services

Ewan Birney and Rolf Apweiler
Directors

Research

Genes, Genomes & Variation
RNA, Protein & Metabolite Expression
Proteins & Protein Families
Molecular & Cellular Structures
Chemical Biology
Molecular Systems
Cross-Domain Resources
Archival Resources

Genomics - Sequence analysis methods
Proteins & Protein Structures - Multi-dimensional statistical analysis
Chemical Biology - Data-driven biological discovery
Pathways & Systems – from plant biology to mammalian development and disease

Training Programme • Industry Programme •
Systems Applications • Systems Infrastructure • Administration • Web Production •
Web Development • External Relations

Bioinformatics services

Data and tools to support life science
research

www.ebi.ac.uk/services

Who uses EMBL-EBI services

~27 million
requests to EMBL-EBI
websites every day

Scientists at over
3.2 million
unique IP addresses use
EMBL-EBI websites

EMBL-EBI delivered
152 million
jobs to its users in 2016

120 petabytes
of storage capacity in our data
centres

“Essential to research”

70%

of users agreed EMBL-EBI services are “essential to their research”*

*From a survey of over 1800 users in 2013 and 2014

Top 1%

for the processes of generation and scholarly communication of scientific knowledge*

**From the Ranking Web of Research Infrastructures*

Europe PMC offers
3.9 million

full-text articles, 1.2 million of which are Open Access

Over
350 000
scientists used EMBL-EBI’s online training in 2016

Saving cost, enabling innovation

79%

“EMBL-EBI services reduced the cost of exploiting relevant data.”

93%

“EMBL-EBI services reduced the time needed to find required data.”

79%

“EMBL-EBI services permitted us to explore more novel research questions.”

81 %

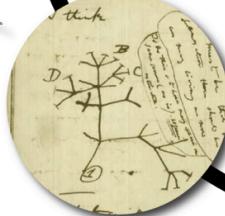
“EMBL-EBI services reduced duplication of effort.”

What services do we provide?

...provide tools to help researchers use it



Analyse it



Share it with other data providers



Labs around the world send us their data and we...



Archive it

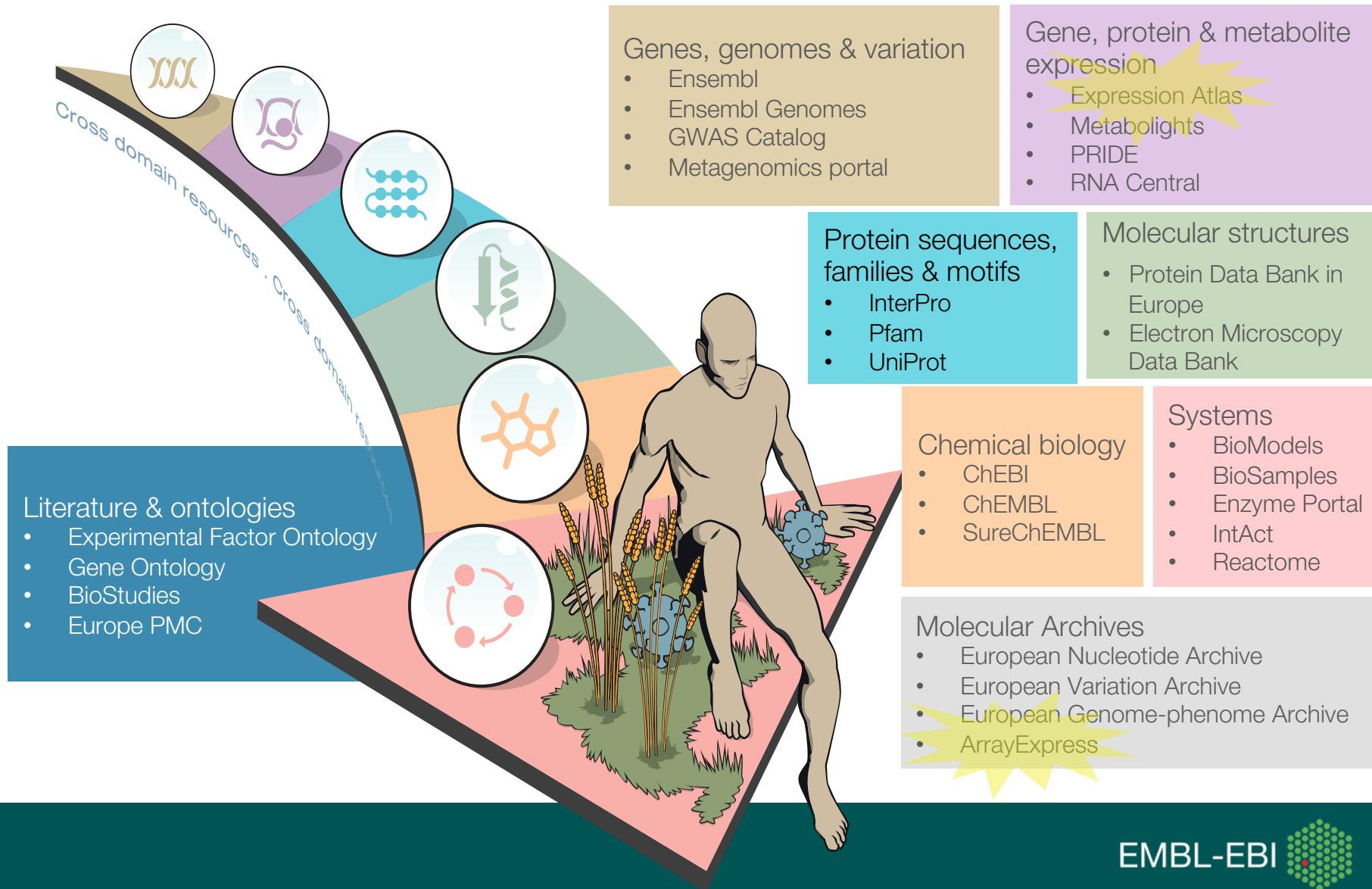


Classify it



EMBL-EBI

Data resources at EMBL-EBI



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