



New portal for plant genomics will support research into improved crops

Hinxton, 7 October 2009 – Today sees the launch of Ensembl Plants – a freely available web resource for plant genomics research – by the European Molecular Biology Laboratory’s European Bioinformatics Institute (EMBL-EBI), in partnership with the Cold Spring Harbor Laboratory, USA. Ensembl Plants allows researchers worldwide to access and visualise the results of genome-scale experiments in different plant species. By pinpointing the genetic basis of beneficial characteristics such as drought and pest resistance, Ensembl Plants will make it easier for scientists to improve the productivity and health of crops – an important step towards meeting growing global food requirements over the coming decade.

Paul Kersey, leader of the Ensembl Genomes team at EMBL-EBI, said: “Ensembl Plants makes the results of genome-scale experiments available to the whole scientific community. The interface is familiar to researchers as it is already in use for the visualisation of information about the genomes of other species, making this new resource very accessible.”

The first release includes genome data from new research funded by the Biotechnology and Biological Sciences Research Council (BBSRC). Richard Mott from the University of Oxford’s Wellcome Trust Centre for Human Genetics, along with Paula Kover from the University of Bath, have sequenced the genomes of 17 strains of the thale cress *Arabidopsis thaliana*. *Arabidopsis* was the first plant to have its genome sequenced, and is an important reference point for

applied plant research. In addition to providing a detailed catalogue of variation in the *Arabidopsis* genome, the project serves as a pilot for the application of high-throughput sequencing methods to plant genomes.

Richard Mott said: “Now that we have 17 *Arabidopsis* genomes represented in the database we have an incredibly powerful tool for plant genetics research. This will allow us to identify useful genetic traits that are likely to be found throughout the plant kingdom.” “Researchers across the world can then use that information to improve crops, contributing towards efforts to increase food production and adapt crops to changing climates,” added Paula Kover.

Ensembl Plants has been co-developed by EMBL-EBI and the group of Doreen Ware who run the Gramene database at the Cold Spring Harbor Laboratory, USA. Gramene already utilises the Ensembl open source software system, originally developed by EMBL-EBI and the Wellcome Trust Sanger Institute, for studying the genetic differences between plant species. The Ensembl Plants and Gramene groups will collaborate to maintain a common set of reference databases, integrating experimental data generated on both sides of the Atlantic.

The launch of Ensembl Plants completes the set of new Ensembl-powered portals (for bacteria, protists, fungi, and invertebrate metazoa) launched by EMBL-EBI during 2009. ●

<http://plants.ensembl.org>

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About EMBL-EBI:

The European Bioinformatics Institute (EBI) is part of the European Molecular Biology Laboratory (EMBL) and is located on the Wellcome Trust Genome Campus in Hinxton near Cambridge (UK). The EBI grew out of EMBL's pioneering work in providing public biological databases to the research community. It hosts some of the world's most important collections of biological data, including DNA sequences (EMBL-Bank), protein sequences (UniProt), animal genomes (Ensembl), three-dimensional structures (the Protein Databank in Europe), data from gene expression experiments (ArrayExpress), protein-protein interactions (IntAct) and pathway information (Reactome). The EBI hosts several research groups and its scientists continually develop new tools for the biocomputing community. www.ebi.ac.uk

About EMBL:

The European Molecular Biology Laboratory is a basic research institute funded by public research monies from 20 member states (Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom) and associate member state Australia. Research at EMBL is conducted by approximately 80 independent groups covering the spectrum of molecular biology. The Laboratory has five units: the main Laboratory in Heidelberg, and Outstations in Hinxton (the European Bioinformatics Institute), Grenoble, Hamburg, and Monterotondo near Rome. The cornerstones of EMBL's mission are: to perform basic research in molecular biology; to train scientists, students and visitors at all levels; to offer vital services to scientists in the member states; to develop new instruments and methods in the life sciences and to actively engage in technology transfer activities. EMBL's International PhD Programme has a student body of about 170. The Laboratory also sponsors an active Science and Society programme. Visitors from the press and public are welcome. www.embl.org

About the Cold Spring Harbor Laboratory:

Cold Spring Harbor Laboratory (CSHL) is a private, not-for-profit research and education institution at the forefront of efforts in molecular biology and genetics to generate knowledge that will yield better diagnostics and treatments for cancer, neurological diseases and other major causes of human suffering. The Laboratory was founded in 1890 as one of the first institutions to specialize in genetics research and subsequently has played a central role in the seminal field of molecular biology. In addition to cancer and neuroscience, researchers at the Laboratory, led by President Bruce Stillman, Ph.D., are renowned for their expertise in plant biology and quantitative biology. CSHL is also an innovative force in science education, its efforts encompassing the unique Ph.D. program at Watson School of Biological Sciences, an active postgraduate research program, the world-famous Meetings & Courses and Banbury Center programs, and public genetics education programs at the pioneering Dolan DNA Learning Center. CSHL is ranked #1 by Science Watch (Reuters Essential Science Indicators) for its impact upon molecular biology and genetics over the last decade. www.cshl.edu

About BBSRC:

The Biotechnology and Biological Sciences Research Council (BBSRC) is the UK funding agency for research in the life sciences. Sponsored by Government, BBSRC annually invests around £450 million in a wide range of research that makes a significant contribution to the quality of life for UK citizens and supports a number of important industrial stakeholders including the agriculture, food, chemical, healthcare and pharmaceutical sectors. BBSRC is the biggest funder of agriculture and food-related research in the UK, funding around £185M of research in plant and crop science, food safety and nutrition, animal health and welfare and other research to underpin food security. It carries out its mission by funding internationally competitive research, providing training in the biosciences, fostering opportunities for knowledge transfer and innovation and promoting interaction with the public and other stakeholders on issues of scientific interest in universities, centres and institutes. The Babraham Institute, Institute for Animal Health, Institute of Food Research, John Innes Centre and Rothamsted Research are Institutes of BBSRC. The Institutes conduct long-term, mission-oriented research using specialist facilities. They have strong interactions with industry, Government departments and other end-users of their research. www.bbsrc.ac.uk

About the Wellcome Trust Centre for Human Genetics:

The Wellcome Trust Centre for Human Genetics was established to undertake research into the genetic basis of common diseases. The scientific objective of the Centre is to explore all aspects of the genetic susceptibility of disease. The Centre houses multi-disciplinary research teams in human genetics, functional genomics, bioinformatics, statistical genetics and structural biology. www.well.ox.ac.uk

About the University of Bath:

The University of Bath is one of the UK's leading universities, with an international reputation for quality research and teaching. Bath is ranked in the UK top ten of universities in both The Guardian University Guide and the Complete University Guide published by The Independent. The University values working collaboratively with others and has a global network of contacts in business, the professions, the public sector, and the voluntary sector. It also benefits from strong links with the local community. www.bath.ac.uk

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