France

http://www.arabidopsis.org/portals/masc/countries/France.jsp
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Major funding sources for *Arabidopsis* functional genomics

- Genoplante : http://www.genoplante.com/
- French National Research Agency (ANR): www.gip-anr.fr/
- ERA-PG: www.erapg.org/

A major source of funding in France for *Arabidopsis* functional genomics projects is Genoplante, a federative program for plant genomics research created by public institutions and several French ag-biotech companies. Created in 1999, it has supported research on the genomes of crop plants, and also has directed over €62 million of research on *Arabidopsis*, supporting creation of high throughput genomics tools and resources as well as functional genomics studies. An initiative was launched in April 2005 to sustain research in plant genomics to the year 2010: "GENOPLANTE 2010" is a 6 year initiative involving seven partners from the public sector (INRA, CNRS, CIRAD, IRD) and private companies (Biogemma, Arvalis, Sofiproteol). This program is now administered by the French National Research Agency (ANR: Agence Nationale de la Recherche). The annual budget for the program for the next few years is around 30 million Euros per year. Although a large part is devoted to crop plants, several *Arabidopsis* projects are funded through the "New Tools" committee. The ANR also contributes significantly to funding *Arabidopsis* research through its "white programs" for fundamental research.

Newly funded research projects (2006)

http://www.genoplante.com/doc/File/Projets 2006.pdf
http://www.agence-nationale-recherche.fr/documents/aap/2006/selection/blanc.pdf

Examples of newly funded projects :

- Cyclic nucleotide-gated cation channels involved in hypersensitive cell death in *Arabidopsis thaliana*, PI: Claudine Balague, CNRS Toulouse
- Natural variation for drought tolerance: from QTL for Targeted traits to functional polymorphisms, PI: Olivier Loudet, INRA Versailles
- Identification of signals controlling the protein trafficking between the secretory pathway and the chloroplast, PI: Patrice Lerouge, CNRS Rouen
- Initiation, synthesis, and degradation: an integrated approach toward the understanding of starch metabolism and formation in plants, PI: Christophe D'Hulst, CNRS Lille
- MicroRNA Transcription and Activity: uncovering and exploiting the genes between the genes, PI: Olivier Voinnet, CNRS Strasbourg
- Design and exploitation of a versatile *Arabidopsis* whole-Genome Tiling Array, PI: Michel Caboche, INRA Evry
- RNA dependent RNA Polymerases involved in epigenetic silencing in plants, PI: Patrice Crété, Marseille University
- Cell calcium signatures regulate plant phenypropanoid metabolic phenotype, PI: Raoul Ranjeva, CNRS Toulouse
- Control of cellulose synthesis in higher plants, PI: Samantha Vernhettes, INRA Versailles
- Epigenetic role of histone methylation in environmental adaptation in *Arabidopsis*, PI: Wen-Hui Shen, CNRS Strasbourg
- Analysis of the cross-talk between transcriptional and post-transcriptional small RNA pathways in *Arabidopsis*, PI: Herve Vaucheret, INRA Versailles
- The TOR/PTEN signalization pathway in plants, PI: Christian Meyer, INRA Versailles

Genoplante and ANR projects funded in 2005 and before

http://www.genoplante.com/doc/File/pdf/Projets 2005.pdf
http://www.agence-nationale-recherche.fr/documents/aap/2005/finances/financeBLANCSAE2005.pdf
Other ongoing Genoplante projects (January 2006 update) : http://www.genoplante.com/doc/File/pdf/Projets en cours.pdf

European projects

http://www.genoplante.com/doc/File/pdf/Projets collaboratifs.pdf

- French-Spanish-German projects and ERA-PG: Several Génoplante projects are jointly funded with similar German and Spanish initiatives in the frame of bi- and tri-lateral collaborations. (www.genoplante.com/doc/File/pdf/Projets collaboratifs.pdf
- Génoplante and ANR are participating in ERA-PG, a European network of research funding organizations responsible for the development of national or regional plant genomics research programs. The network concentrates on creating a stimulating and fruitful environment for European plant genomics. ERA-PG started in 2004 with twelve member organizations from eleven countries funded through the EU's 6th Framework Program. In 2005, four new countries have joined.

Arabidopsis genomics tools and resources

The **Plant Genomics Unit** (URGV, Evry), runs large generic programs on *Arabidopsis* functional genomics (http://www.evry.inra.fr/public/scientific/functional.html), including

- FLAGdb++: an *Arabidopsis* genomics database including amongst many other things an inventory of flanking sequence tags from the Versailles *Arabidopsis T*-DNA collection. Also includes the rice genome and its annotation. (www.evry.inra.fr/public/projects/bioinfo/flagdb.html)
- CATMA and CATdb : A complete *Arabidopsis thaliana* microarray containing more than 24000 gene-specific tags (http://www.evry.inra.fr/public/projects/transcriptome/transcriptome.html). This program involves several EU countries (www.catma.org). CATdb (http://www.evry.inra.fr/public/projects/bioinfo/catdb.html) is a relational database developed to contain the description of Biological experiments (plant species, growth conditions, treatments...); Micro-arrays used (sequences, clones...); Hybridizations (protocols, results, statistics...)
- ATOME: *Arabidopsis thaliana* ORFeome whose goal is to create expression vectors. ATOME, in collaboration with Invitrogen, aims to clone up to 5000 Arabidopsis ORFs into Gateway entry vectors. (http://www.evry.inra.fr/public/projects/orfeome/orfeome.html)

The **Institut Jean Pierre Bourgin** (INRA Versailles, www-ijpb.versailles.inra.fr/en/) houses the French Resource Centre for *Arabidopsis* (www-ijpb.versailles.inra.fr/en/sgap/equipes/variabilite/crg) which distributes insertion lines, natural accessions and several populations of recombinant inbred lines. Nested core-collections of 8, 16, 24, 32, 40, 48 *Arabidopsis* accessions maximizing diversity has been established. All relevant information can be found at :

- VNAT: A database on *Arabidopsis* natural variation (http://dbsgap.versailles.inra.fr/vnat/
- Agrobact +: A database for the Versailles T-DNA lines (http://dbsgap.versailles.inra.fr/agrobactplus/English/Accueil_eng.jsp)

The **National Resources Centre for Plant Genomics** (CNRGV) in Toulouse distributes *Arabidopsis* cDNA and BAC clones. They also provide services including high density colony arrays, genomic pools, custom screening, robotic services and large scale PCR amplification.

- CNRGV: (http://cnrgv.toulouse.inra.fr/ENG/)