France

http://www.Arabidopsis.org/info/2010_projects/France.jsp
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The major source of funding in France for *Arabidopsis* functional genomics projects is Génoplante, 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. Over a hundred projects have been funded by the ministries of research and agriculture.

A new 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 planned to be around 12 million Euros per year. Although a large part is devoted to crop plants, several *Arabidopsis* projects are funded through the "Functional Analysis" and "New Tools" committees. The ANR also contributes to funding *Arabidopsis* research through its "white programs" for fundamental research.

Examples of newly funded research projects (2005)
(http://www.genoplante.com/doc/File/pdf/Projets 2005.pdf)
(http://www.agence-nationale-recherche.fr/documents/aap/2005/finances/financeBLANCSAE2005.pdf)

- *Improving homologous recombination and gene targeting, a three species confrontation.* PI : Marie-Pascale Doutriaux, Gif
- *Repair mechanisms of oxidized proteins in chloroplast of Arabidopsis thaliana,* PI : Pascal Rey, Cadarache
- *Arabidopsis Functions Involved in Disease Susceptibility*, PI : Bruno Favery, Antibes
- *The role of abscisic acid and reversible protein phosphorylation in drought adaptive responses*. PI: Annie Marion-Poll, Versailles
- *Characterization and control of meiotic recombination in plants.* PI: Mathilde Grelon, Versailles
- *Structural and functional study of oil and protein storage bodies in A. thaliana and in B. napus: towards environmentally friendly oil and protein extraction process?* PI: Thierry Chardot, (Grignon)
- *Dissection of redox interactions and their role in stress responses using insertion mutants and metabolomics.* PI: Graham Noctor (Orsay)
- *Functional and structural characterization of the Arabidopsis APC/cyclosome*. PI: Pascal Genschik (Strasbourg).
- *Identification of plant Components involved in the perception by Arabidopsis of Ralstonia solanacearum, a bacterial pathogen.* PI: Yves Marco (Toulouse)

Ongoing Research Projects
- A short description of ongoing Génoplante projects can be found at:
(www.genoplante.com/doc/File/pdf/Projets en cours.pdf)
Arabidopsis Génoplante projects funded in 2004 included efforts on biotic stress (D Roby, I Jupin, P Saindrenan, L Jouanin), epigenetics (V Colot, O Vionnet), seed development and eQTLs (M Caboche, L Lepiniec) and new methods for purifying TAP-tagged protein complexes (H Mireau).
- 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.

Major funding sources for *Arabidopsis* functional genomics:

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

***Arabidopsis* genomics tools and resources:**

The Plant Genomics Unit (URGV, Evry), runs large generic programs on *Arabidopsis* functional genomics (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: A complete *Arabidopsis thaliana* microarray containing more than 24000 gene-specific tags. This program involves several EU countries. (www.catma.org)
- CAGE: A reference expression database using the CATMA microarray chip. Involves a consortium of European researchers. (www.cagecompendium.org/objectives.htm)
- 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. (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 and several populations of recombinant inbred lines and contains

- 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 recently created "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/)