

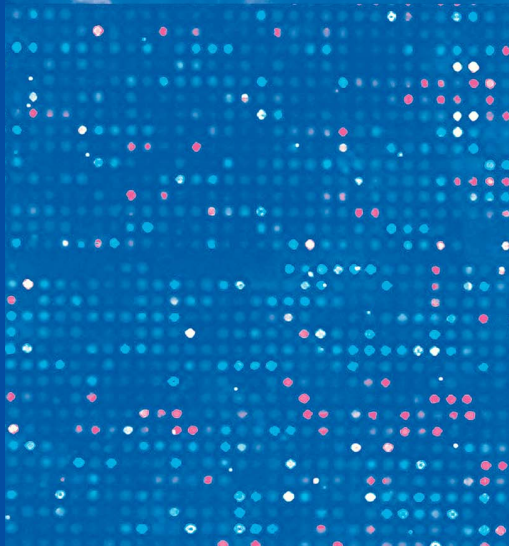
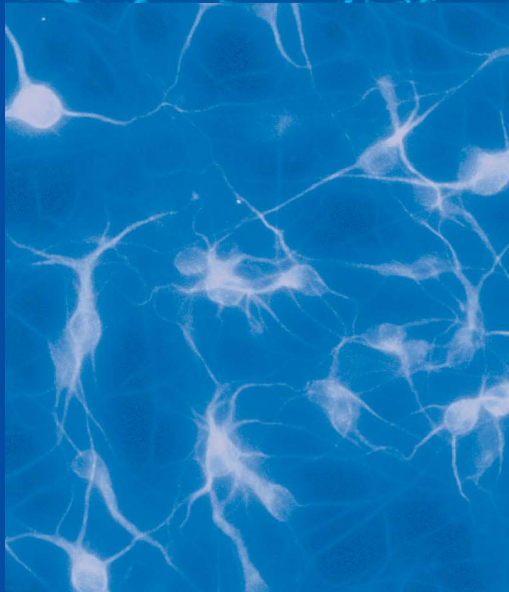
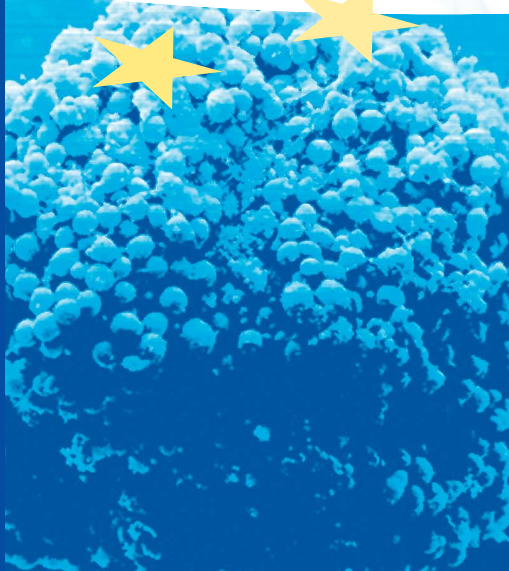


FunGenES

Functional Genomics
in Embryonic
Stem Cells

Partnering on a European Level to Advance Stem Cell Research

www.fungenes.org



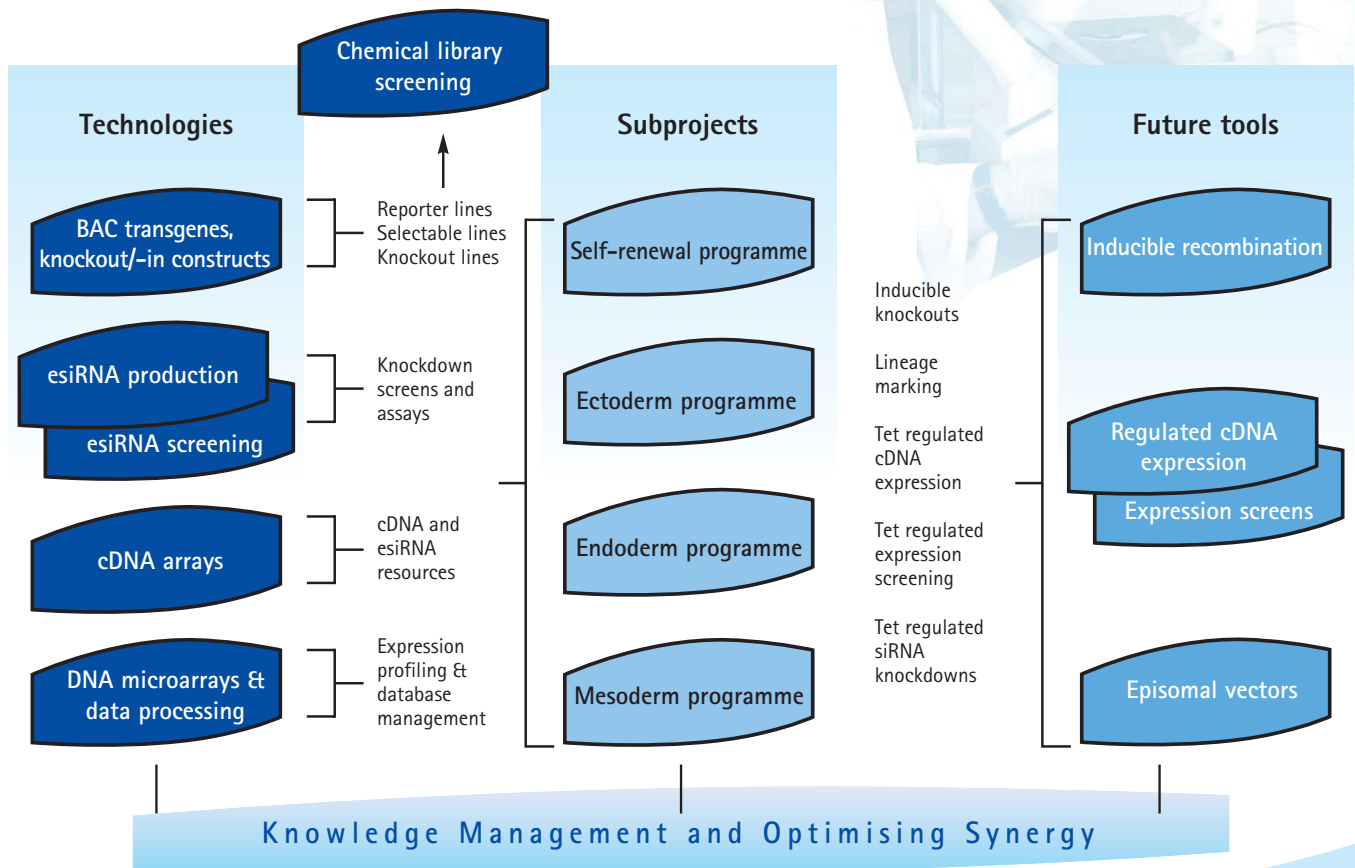
FunGenES - "Functional Genomics in Embryonic Stem Cells" assembles distinguished scientists from 18 organisations from industry and academic research across Europe. This pan-European research initiative is set up as an Integrated Project with a budget of about 12 Million Euros, partially funded through the 6th Framework Programme of the European Union.

The FunGenES consortium brings together specialists from Germany, France, Italy, Portugal, Greece and the UK for a period of 3 years to investigate the functional genomics of mouse embryonic stem (ES) cells.

FunGenES will identify the gene subsets which are active at various stages of mouse ES cell differentiation. Its major objective is to produce a gene expression atlas covering the development of ES cells into the various somatic cell types. Understanding the genetic pathways underlying differentiation of ES cells to somatic cells would lead to the development of therapeutic strategies to "repair" damaged or diseased organs as an alternative to transplantation. More specifically, the consortium's objectives include:

- Developing a detailed understanding of embryonic stem cell self-renewal, differentiation and lineage commitment to different organ-specific cells, including the identification of potential novel target genes for therapeutic intervention
- Deriving new cellular and molecular tools to allow characterisation of gene function in tissue-specific cell populations (Functional Genomics)
- Developing new embryonic stem cell-based methods for high throughput screening of small candidate molecules for therapeutic applications in human diseases.





The FunGenES gene expression atlas may also contribute to the development of adult stem cell-based therapies. We have assembled a team of leading academic and industrial researchers studying extrinsic and intrinsic pathways of ES cell differentiation as well as experts in relevant molecular biology techniques. The FunGenES project is subdivided into four subprojects investigating self-renewal, ectodermal, endodermal and mesodermal differentiation processes. Several technology units support the subprojects:

- A BAC (bacterial artificial chromosome) transgene and knockout/knockin construct production unit for the generation of reporter and mutant cell lines.
- A genome resource unit providing sets of arrayed and sequenced cDNA clones and a library of chemically mutagenised ES cells.
- An esiRNA production and screening unit for studying gene function in embryonic stem cells.
- An Affymetrix microarray and bioinformatics unit for large-scale expression profiling and data analysis.

The Knowledge Management and Optimising Synergy unit supports the research activities of the subprojects, strengthens integration of the research, and increases the efficiency by avoiding duplicate efforts.

FunGenES Partners

- University of Cologne, Germany
- Aventis Pharma Recherche-Développement, France
- Institut National de la Santé et de la Recherche Médicale, France
- GSF - National Research Centre for Environment and Health, Germany
- University of Edinburgh, United Kingdom
- Stem Cell Sciences Ltd, United Kingdom
- DeveloGen, Germany
- Max-Delbrück-Center for Molecular Medicine, Germany
- Institute for Stem Cell Research (Fondazione Centro San Raffaele del Monte Tabor), Italy
- Max-Planck-Institute of Molecular Cell Biology and Genetics, Germany
- Max-Planck-Institute for Molecular Genetics, Germany
- Centre National de la Recherche Scientifique, France
- Arttic, France
- Instituto de Medicina Molecular, Portugal
- Technische Universität Dresden, Germany
- Institute of Molecular Biology & Biotechnology (Foundation for Research & Technology Hellas), Greece
- University of Bath, United Kingdom
- IPK Gatersleben (Institute of Plant Genetics and Crop Plant Research), Germany



Supported by the Life-Science-Health Programme
Sixth EU Framework Programme for Research and Technological Development