

## Europe and the retina

■  
**With a boost from the European Vision Institute (EVI) and the EVI-GENORET project, European research in ophthalmology is attempting to catch up with American efforts. The Paris region and its laboratories are playing an important role in this endeavour.**

With the build-up of scientific research in the Old World, European research on eye diseases is gradually getting a boost. The Fifth Research and Development Framework Programme (FP5, 1998-2002) devoted several research networks to ophthalmology (including PRORET, PRO-AGE-RET, RETRAINET and EUREYE). The first two of these projects (i.e. "Neuroprotection of the retina" and "Protection of the retina during aging") were coordinated by José-Alain Sahel's INSERM team, then located in Strasbourg.

The Sixth Framework Programme (FP6) currently underway (2002-2006) should facilitate the transition to a higher level as a result of the 2003 creation of the European Vision Institute (the EVI in Brussels), which is a European Economic Interest Grouping (EEIG) (1).



### Training and genomics

The EVI has four founding fathers: José-Alain Sahel, José Cunha-Vaz, Eberhart Zrenner and Adam Sillito, the respective directors of Unit 592 (Saint-Antoine Hospital, Paris, and responsible for the "Vision Institute" project), the association for biomedical research and innovation on light and the image (AIBILI, Coimbra, Portugal), the University Eye Clinic of Tübingen (Germany), and the London Institute of Ophthalmology. It is currently supporting two far-reaching initiatives: RETNET, the European network of nine laboratories responsible for training young scientists in the field of retinal research (2), and, above all, the EVI-GENORET project ("Functional genomics of the retina"), the largest integrated scientific project on eye diseases ever set up in Europe. Funded at €10 million over four years, the objective of GENORET is to create the first integrated, fundamental European clinical database of retinal tissue: "The idea being," points out Olivier Lorentz, the network's project manager, "to create a kind of ID card for each gene that will contain full information on its function in the retina."

Scheduled for launch on 1 April 2005, the EVI-GENORET project will be conducted by a consortium of approximately 50 laboratories from 24 different academic and industrial entities (3) located in 12 European countries. Sahel will be responsible for scientific coordination, with the administrative and financial aspects being handled by the EVI and INSERM Transfert, a private subsidiary of INSERM responsible for the economic development of research and the transfer of knowledge to industry (4).

### **The survival of the cones**

The scientific objective of GENORET is to discover which genes and proteins are involved in the development and survival of the photoreceptors in the cones of the retina (the cells affected by macular degeneration and other retinopathies). If we can succeed in protecting the cones, blindness can be avoided even if the rod photoreceptors are affected.

Thanks to the diversity of the stakeholder teams and to a major biocomputing effort that will make it possible to transcribe, annotate and classify the data from various origins in a standardized way, a database will gradually be constituted containing all available data on the functions of the listed genes: preclinical experimental data obtained from animal research, clinical data (types of pathology, ophthalmology tests, retinal images and so on), biological data (cellular and molecular biology, the biological role of the development of the retina and of its normal and pathological functioning) and so-called “functional genomics” data concerning the differential expression of genes and proteins in the normal and degenerated retina.

In actual practice, once constituted this database should be useful to both researchers and manufacturers for such purposes as the validation of therapeutic targets, the identification of patient cohorts and the discovery of innovative tools for clinical trials.

RETNET and EVI-GENORET will put Paris and Europe on the map, among the major participants in international research on diseases of the retina.



---

(1) <http://www.europeanvisioninstitute.org>

(2) <http://www.euro-ret.net/>

(3) In France, INSERM, INSERM Transfert, the European Centre for biological and medical research (CERBM) in Strasbourg, and the GenOway company, specializing in transgenesis.

(4) <http://www.inserm-transfert.fr>