Collaborations and Strategic Alliances on resources
EMBL goal: provide world-class research infrastructure and services to its member states

Bioinformatics Services

Provide Europe with the biological data that serves basic research and innovation in biology, health and agriculture.

• Keeping up with growing data volumes
• Data integration

ELIXIR: Construct a new European research infrastructure for biological information

• EMBL-EBI as the hub
• nodes at national research organisations
EMBL goal: provide world-class research infrastructure and services to its member states

The future of European research infrastructures

Engage in the construction and operation of the next generation of biomedical research infrastructures in Europe:

- Active participation in the ESFRI process
- Input into governance and organisational models of biomedical ESFRI projects
- ELIXIR
- Euro-BioImaging
- Participation in Instruct, BBMRI, Infrafrontier, EMBRC, EU-Openscreen
Collaboration

• Work at the EBI has continued to benefit from many collaborations
• Almost all of our resources are funded through collaborative agreements
• During 2009-2010, 77% of our publications involved collaborations with external colleagues.
Collaborations as measured by (a) publications with other institutions and (b) funding shared with other institutions. Data for (a) were de-duplicated if the same institution appeared in the affiliations list of more than one paper. Data for (b) were not de-duplicated and in some cases the same institution is represented several times through different collaborations.
Collaborations for the major databases
Other collaborations

- **ENA** content is determined by the submitter. Added-value information is provided as an additional resource. This dataset is coordinated by virtue of the International Nucleotide Sequence Database Collaboration (INSDC), forming a single, worldwide coordinated set of information with partner groups at NCBI and DDBJ.

- **UniProt** is a collaboration of the EMBL-EBI, the Swiss Institute of Bioinformatics and the Protein Information Resource group at Georgetown University Medical Center and the University of Delaware.
Collaborations

**Reactome** pathway database provided in collaboration with New York University and the Ontario Institute for Cancer Research.

**ChEMBL** has a data exchange agreement with PubChem (NCBI)

**Array Express** has a data exchange agreement with GEO (NCBI)
The DiXa Proposal

The diXa project is dedicated to developing and implementing a robust and sustainable service infrastructure for data from EU-funded research into non-animal tests for predicting chemical safety.

Activities

diXa will make it possible to deliver commonly agreed, core service support by providing SOPs for seamless data sharing. This will be supported by hands-on training.

The diXa Joint Research Initiative will carry out cross-platform integrative statistical analyses, cross-study meta-analyses and systems modeling for predicting chemical safety as alternative to animal tests.

These efforts will contribute to the vision expressed by Riding the Wave and Europe’s Digital Agenda.

How the diXa services might be used

Who is involved?

- Maastricht University - Jos Kleijnans (Coordinator)
- EMBL-EBI - John Overington
- Genedata - Timo Wittenberger
- Max Planck Institute for Molecular Genetics - Ralf Herwig
- Imperial College London - Hector Keun
- EC Joint Research Centre (JRC) - Clemens Wittwehr
- Klinikum der Universitaet zu Koeln - Jürgen Hescheler

Added value

- Optimised use of the EU’s best research capacities
- Increase the scale of federation and interoperability of data resources
- New research opportunities
- Socioeconomic impact
- Better, faster, cheaper, computerized, non-animal based tests for chemical safety

Data and services

- Clear identification of ‘feeder’ resources in project plan
- EU-funded projects to deliver results that are accessible to the public
- Direct submission of data sets
- Automated population of diXa warehouse from public repositories
- Data (pre-)processing
  - Raw and meta data submitted to EMBL-EBI*
  - Transferred to Genedata for pre-processing and quality control
  - Data and reports submitted to project team and EMBL-EBI
- Statistical analysis of pre-processed data at Genedata
- Available from EMBL-EBI for users:
  - raw and meta data, pre-processed data, QC reports, analysis results, data processing and analysis workflows
- Access rights
  - Users complete simple form on diXa website, detailing aims, publication policy, etc.
  - diXa Executive Board makes decisions if required.

* EMBL-EBI is a not-for-profit organisation that provides freely available bioinformatics tools and services to the public. It is part of the European Molecular Biology Laboratory.