

4th Annual Forum for SMEs

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EMBL-EBI



Overview of EMBL-EBI data resources and services

EMBL-EBI



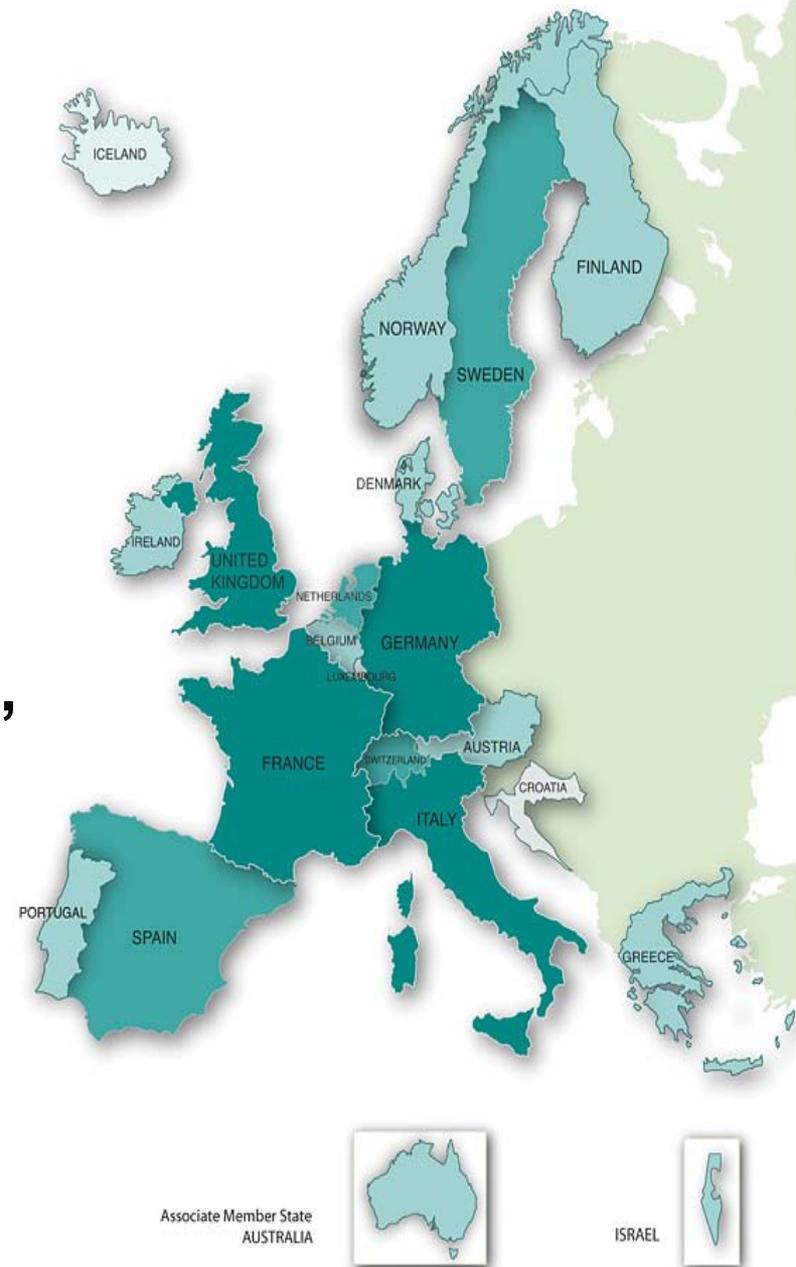


What is EMBL-EBI?

- 
- Based on the Wellcome Trust Genome Campus near Cambridge, UK
 - Part of the European Molecular Biology Laboratory
 - Non-profit organisation

EMBL member states

**Austria, Belgium, Croatia,
Denmark, Finland, France,
Germany, Greece, Iceland,
Ireland, Israel, Italy, Luxembourg,
the Netherlands,
Norway, Portugal, Spain, Sweden,
Switzerland and the United
Kingdom**
**Associate member state:
Australia**



The five branches of EMBL

- EMBL is a basic research institute funded by public research monies from 20 member states.
- 1400 staff, over 60 nationalities.

Heidelberg



Basic research in
molecular biology
Administration
EMBO

Hamburg



Structural biology

Hinxton



Bioinformatics

Grenoble



Structural biology

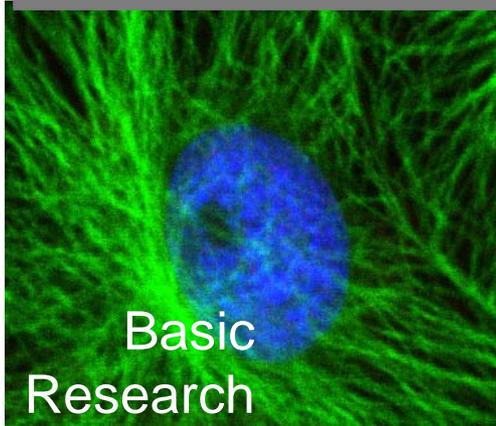
Monterotondo



Mouse biology



TODAY: EMBL-EBI's Mission





EMBL-EBI's mission

- To provide freely available data and bioinformatics **services** to all facets of the scientific community in ways that promote scientific progress
- To contribute to the advancement of biology through basic investigator-driven **research** in bioinformatics
- To provide advanced bioinformatics **training** to scientists at all levels, from PhD students to independent investigators
- To help disseminate cutting-edge technologies to **industry**

What Technologies?

- Bioinformatics resources
- Literature resources
- Cheminformatics resources (ChEBI, CDK)
- ChemoGenomics resources (ChEMBL)
- Knowledge management technologies and standards
- ...

EMBL-EBI Data Resources

Genomes and genes	Ensembl	A joint project with the Sanger Institute presenting genome data of a subset of higher animals
	Ensembl Genomes	Ensembl-based environment for genome data from other branches of the tree of life
	1000 Genomes	Catalogue of human variation from major world populations
	EGA *	European Genome-phenome Archive – Genotype, phenotype and sequence data – particularly those of relevance to human disease
	European Nucleotide Archive	Submitted assembled DNA and RNA sequences. Reads from next generation sequencing (SRA). Traces from next generation sequencing (Trace Archive).
Transcripti on	ArrayExpress	Archive of transcriptomics and other functional genomics data
	Expression Atlas	Differentially expressed genes in tissue or cell types, disease or under treatment
Protein	UniProt	Protein sequences and functional annotation
	InterPro	Integrated resource for protein families, motifs and domains
	PRIDE	Public data repository for proteomics data
Structure	PDBe	Resource for biomacromolecular structure and function
Small molecules	ChEBI	Chemical Entities of Biological Interest
	ChEMBL	Bioactive compounds (drugs and drug-like molecules), their quantitative properties and bioactivities

EMBL-EBI Data Resources

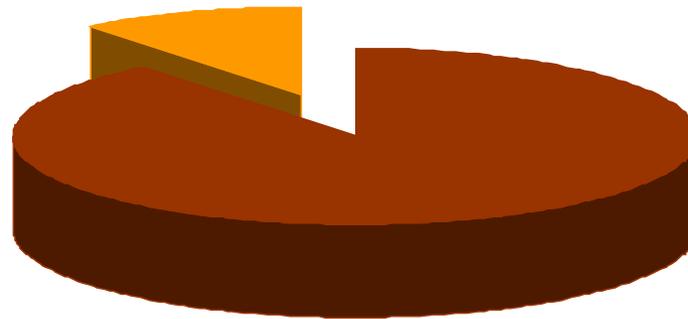
Processes	Intact	Public repository for molecular interaction data
	Reactome	A curated resource of core pathways and reactions in human biology
	BioModels	Mathematical models of cellular processes
Ontology	GO	Gene Ontology for consistent descriptions of gene products
Literature	CiteXplore/UK PMC	Bibliographic query system



Sector of your organization

Industry/Commercial/SME (61)

11%



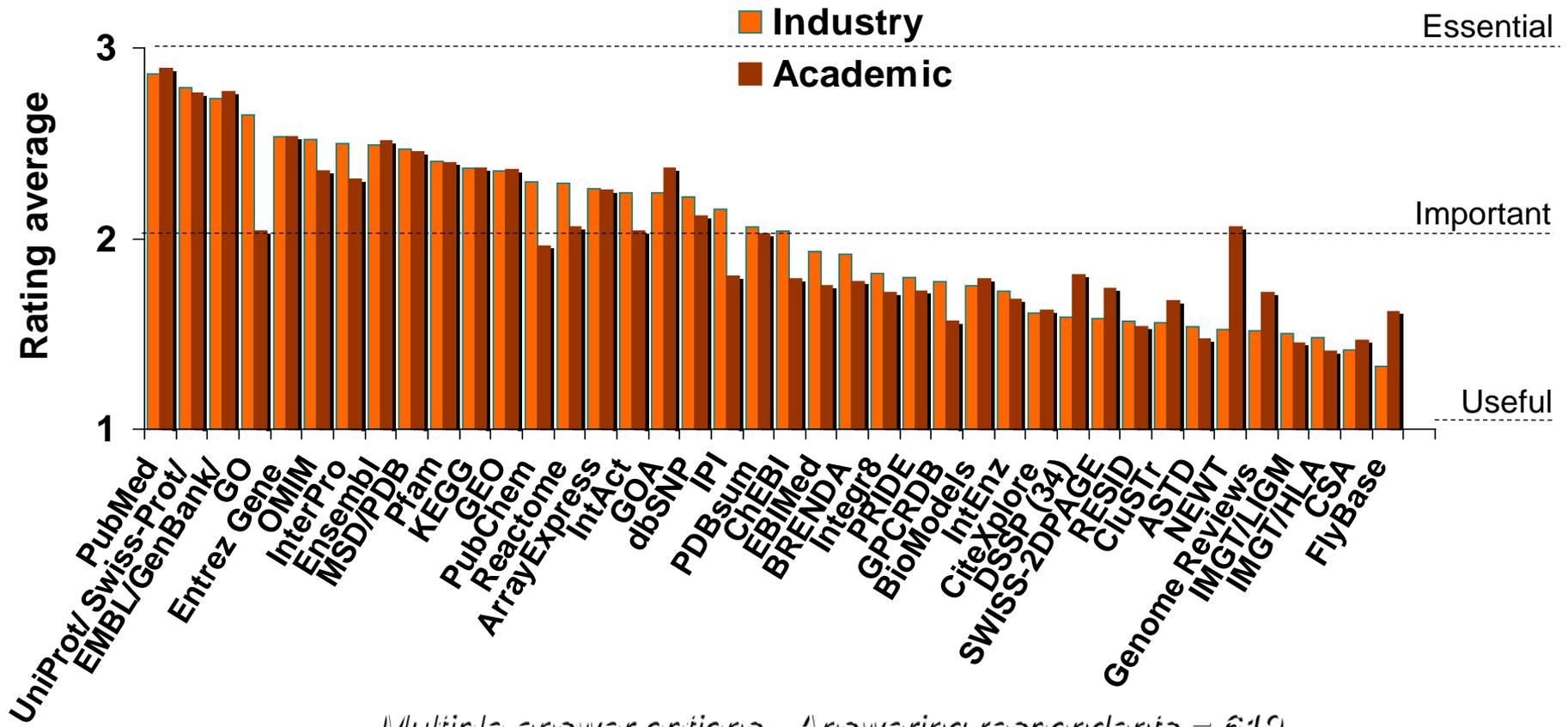
89%

Academic/Non-profit (516)

Response frequency = % of answering respondents (i.e. 577)

Interests of Industry & academics overlap

Important databases according to **sector**

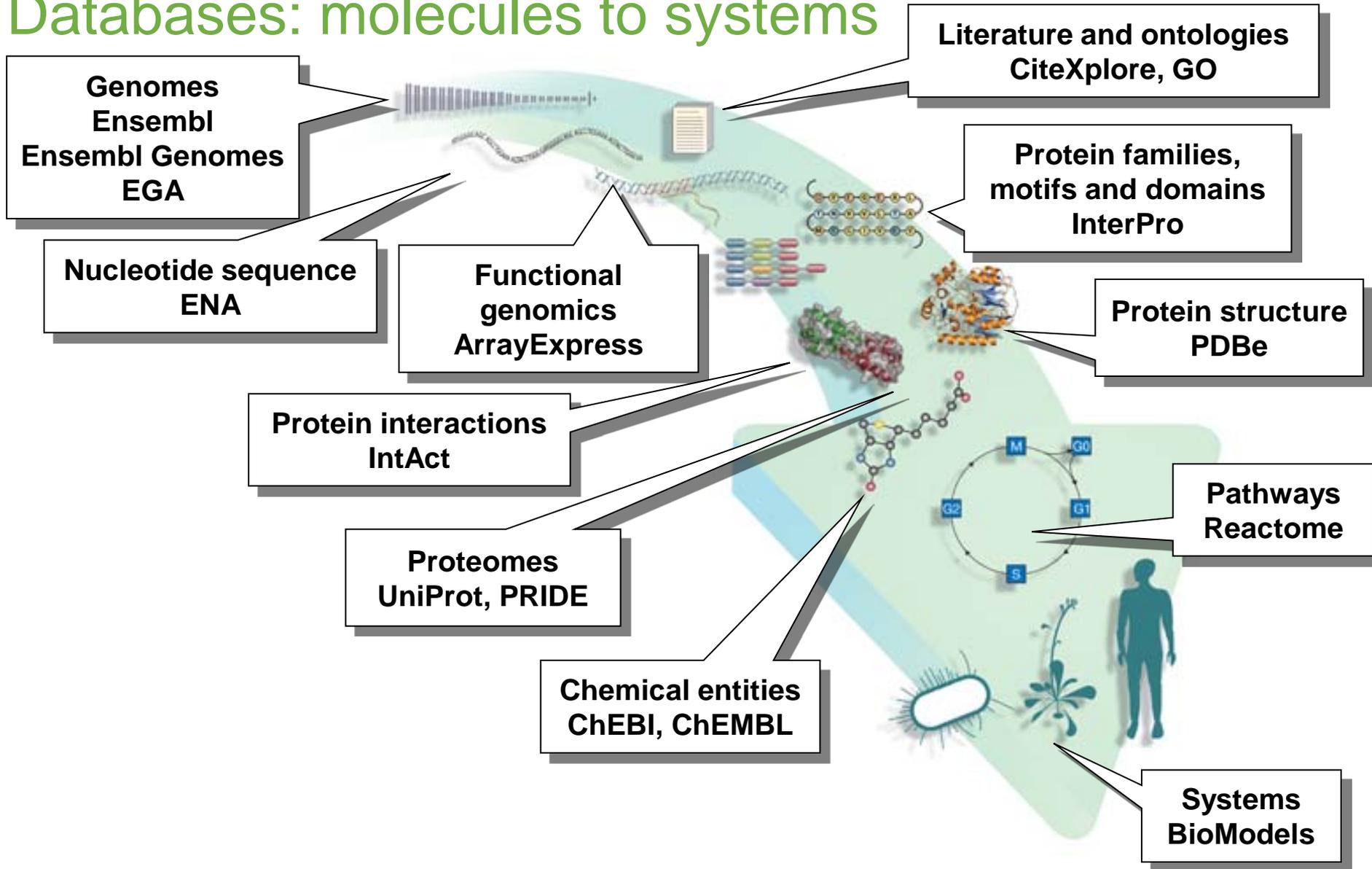


Multiple answer options - Answering respondents = 619

The EMBL-EBI service Mission

- In addition, there are 25-30 small specialist databases and supporting resources such as controlled vocabularies. According to a recent survey run in the context of ELIXIR, the emerging European Life-Science Infrastructure for Biological Information, there are roughly 200 databases offered by 100 institutions throughout Europe. The EBI, perhaps not surprisingly, was found to hold the largest data collection and serve by far the largest number of users. EMBL-EBI also forms a European node in several global data-sharing collaborations.
- The EMBL-EBI also offers a range of computational tools to explore the data available in the repositories, for example tools for sequence alignment or pattern searching. These services are used by academic and commercial researchers throughout Europe and the

Databases: molecules to systems



How do we support industry, generically?

- EMBL-EBI data resources and services are freely available to industry stakeholders in the same way as they are freely available to members of the academic research community. With the exception of EGA, they can be searched, downloaded in their entirety etc.
- For training courses that are funded through EMBL-EBI core funds or EU grants, industry stakeholders may attend all EMBL-EBI on a similar cost basis as academic researchers.
- (But restrictions apply to courses funded by Wellcome Trust, EMBO and FEBS)
- www.ebi.ac.uk/training/handson/
- www.ebi.ac.uk/events

Meeting Overview

EMBL-EBI





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Why an SME Forum?

- SMEs are enormously important for the economies of EMBL member states.
- Support for Industry is part of the mission of the EMBL-European Bioinformatics Institute.
- To this end we have established an annual series of information workshops based in differing locations in Europe hosted by regional agencies in bio-clusters, who have existing links with the SMEs in their cluster.

How do SMEs benefit?

- In relation to the larger companies, SMEs are often driven by shorter-term expedients.
- Our experience is that SMEs benefit most greatly from knowledge dissemination meetings that focus on tools and information resources that are:
 - freely available in the public domain
 - can add value to their business processes immediately.
- These workshops are designed to allow SMEs to hear about data resources, tools and services that are provided freely by EMBL-EBI and our collaborators.
- This year there is a major additional focus on tools and data provided the European Patent Office (EPO).

Annual Forum for SMEs

- These meetings have been initially funded from EU projects coordinated by EMBL-EBI.
- In 2008, the forum was held in Berlin.
- In 2009, the forum was held in Vienna.
- [In 2010, it is in Munich and co-hosted by Bio-M and the EPO.](#)
- www.enfin.org/SME2010

The Forum Topics

- The topics of the workshop have been specifically selected on the basis of previous interactions with SMEs and include:
 - chemogenomics, cheminformatics,
 - proteomics,
 - text mining, literature services and analysis,
 - web services
 - and patent services providing by EMBL-EBI and the European Patent Office.
- This year in addition to the presentations, discussion and networking opportunities, there will also be an opportunity for some hands-on tutorials at the offices of the EPO.

Monday 18th October 2010

12.40	Welcome from Bio ^M Prof. Dr. Horst Domdey , Managing Director, BioM Biotech Cluster Development GmbH
12.50	Meeting Overview (Dominic Clark & Pascal Kahlem , EMBL-EBI)
12.55	Overview of EMBL-EBI data resources and services (Dominic Clark , EMBL-EBI)
13.10	EMBL-EBI Proteomics data resources and services (Rafael Jimenez , EMBL-EBI)
13.40	ENFIN – EnVISION and DAS (Rafael Jimenez , EMBL-EBI)
14.10	Cheminformatics resources and services at EBI (Chris Steinbeck , EMBL-EBI).
14.40	COFFEE BREAK

Monday 18th October 2010

15.10	Using Web services in Your Data Analysis Pipeline (Erik Bongcam-Rudloff , U. Uppsala)
15.40	Web Services: The Biocatalogue Project (Eric Nzuobontane , EMBL-EBI)
16.10	ChEMBL databases and tools: Support of target selection and validation (John Overington , EMBL-EBI)
16.40	Short Break
17.00	Presentations from Regional Organisation: Introduced by Mathias Lamparter , Bio ^M .
17.15	Knowledge Management for Scientific Intelligence with BioXM, Klaus Heumann , CEO, Biomax Informatics AG, BioMax Informatics AG, (http://www.biomax.com).
17.45	Presentation from Dr. Martin Seifert , Vice President Business Development and Consulting, Genomatix Software GmbH.
18.15	Closing Comments, Bio ^M
18.25	Closing Comments (Dominic Clark & Pascal Kahlem, EMBL-EBI)
18.35	Networking Buffet Supper

Tuesday 19th October 2010, EPO, room 8661 (Grasserstr 2), Munich.

Time	Item
08.45	COFFEE
09.00	Welcome Noël Camping , Direct of Know-How, EPO Introduction to the second day (Dominic Clark , EMBL-EBI)
09.10	EMBL-EBI Literature Services and Applications (Jo McEntyre , Head of Literature Services, EMBL-EBI)
09.40	EMBL-EBI text mining tools and mapping of targets/pathways to disease (Dietrich Rebholz-Schuhmann , EMBL-EBI)
10.10	EMBL-EBI Patent related services (Jennifer McDowall , EMBL-EBI).
10.35	COFFEE

Tuesday 19th October 2010, EPO, room 8661 (Grasserstr 2), Munich

11.00	EPO Services, resources for SMEs and the SLING project (Stephane Nauche , European Patent Office)
11.15	EPO information resources and esp@cenet (www.espacenet.com) (David Evans , European Patent Office, Munich)
11.45	How the EPO searches prior art in Biotech; and dissemination of knowledge (Titus Vogt , European Patent Office)
12.15	Biotech patentability (Titus Vogt , European Patent Office)
13.00	Wrap up of second morning including Panel Q&A – Pascal Kahlem EMBL-EBI..
13.15	Lunch

Hands-on Tutorials (in EPO training rooms 1909 & 1910, Bayerstr 115 “Building no. 7”).

14.30	Workshop A: EMBL-EBI resources (Jennifer McDowall , EMBL-EBI) Workshop B: EPO resources (David Evans)
15.30	Break
15.45	Workshop A: EPO resources (David Evans) Workshop B: EMBL-EBI resources (Jennifer McDowall , EMBL-EBI)
16.45	Wind down cocktail & feedback discussion
17.30	Close of day

Tutorial Contents

- Workshop A: EMBL-EBI resources (**Jennifer McDowall**, EMBL-EBI)
- Workshop B: EPO resources (**David Evans**)
 - The basics of how to use the public patent database: espacenet - ep.espacenet.com/
 - How to use patent classification codes (IPC & ECLA) for more targeted searching
 - How to interpret the search results; how to "read" a patent; how to use the search report on a patent for further leads
 - How to use espacenet to find collaborators and partners
 - How to monitor a pending application of interest in Register Plus - www.epo.org/patents/patent-information/free/register-plus.html
 - How to use INPADOC to check the status of a patent (has it lapsed? is it in force in a particular country?)

Acknowledgements

- BioM, the regional development agency for Munich, www.Bio-M.org/en/index.html
- IZB Innovation and Founding Center for Biotechnology (“Fördergesellschaft IZB mbH“) www.izb-online.de/english/home.php
- Cluster BIOTECHNOLOGY Bavaria
- The European Patent Office, www.epo.org
- EMBL-European Bioinformatics Institute, www.ebi.ac.uk
- The European Commission

Acknowledgements

- the [ENFIN](http://www.enfin.org) Project, co-ordinated by EMBL-EBI, www.enfin.org
- the [CALBC](http://www.ebi.ac.uk/Rebholz-srv/CALBC/project.html) Project, co-ordinated by EMBL-EBI, www.ebi.ac.uk/Rebholz-srv/CALBC/project.html
- the [SLING](http://sling-fp7.org/) Project, co-ordinated by EMBL-EBI, <http://sling-fp7.org/>
- the ELIXIR Project, co-ordinated by EMBL-EBI, www.elixir-europe.org
- We would also like to acknowledge support from the European Council of Bioregions, www.cebr.net for disseminating information about this event to member organisations.

Acknowledgements

- All the speakers
- Everyone involved in logistics
 - Mathias Lamparter
 - Jeremy Philpott, EPO
 - Pascal Kahlem, EMBL-EBI
 - Sonja Bremauer, EPO
 - Holly Foster, EMBL-EBI

Questions?

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[HTTPS://EMBL-EBI.WEBEX.COM/MW0306L/MYWEBEX/DEFAULT.DO?SITEURL=EMBL-EBI](https://embl-ebi.webex.com/mw0306l/mywebex/default.do?siteurl=embl-ebi)