NCBO BioPortal

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NATIONAL CENTER FOR
BIOMEDICAL ONTOLOGY
NCBO BioPortal

• The National Center for Biomedical Ontology (http://bioontology.org) is developing BioPortal, an open-source repository of ontologies, terminologies, and thesauri of importance in biomedicine.

• An early version of BioPortal is accessible at http://bioportal.bioontology.org. Users can access the BioPortal content interactively via Web browsers or programmatically via Web services.
BioPortal adopts a layered architecture
NCBO Products and Technologies Landscape

NCBO End-Users

NCBO products and technologies

External NCBO partner products

RSNA RadLex Portal – J2EE Application

Integration – REST

Web Browser

Protégé Java

Integration – REST

BioPortal - J2EE Web Application and Ruby on Rails

Integration – REST

LexGrid Java

Integration – REST

Phenote+ - Java Swing Application

Integration – Java API

Desktop Client

Jambalaya Java Applet*

Integration – REST

Open Biomedical Resources – J2EE RESTlet Services

Integration – REST

OBD – J2EE RESTlet Services

Integration – REST

Note that though Jambalaya integrates through REST services, it is technically part of the BioPortal presentation UI.
New BioPortal prototype

• New features include:
  – Visualization
  – Mappings between ontologies
  – “Marginal notes” to annotate ontologies

• To join the testing team, visit our Web site:
  – URL: http://alpha.bioontology.org
  – Email Feedback: ngriff@stanford.edu

• An active BioPortal user group is providing feedback on new features and guiding future development work
Feature: Browse Ontologies
Feature: Multiple Ontology Navigation
Feature: Mappings between Ontologies

The image shows a screenshot of the BioPortal interface with a focus on the Mappings section. The screen displays the mappings for the term "blood". The table shows a mapping from "Adult Mouse Anatomy" to "blood" with the following details:

- **Mapping To**: Adult Mouse Anatomy => blood
- **Mapped By**: Nick Griffith
- **Mapped On**: 10/3/07

The circle around the mapping indicates that it is an active mapping.
Feature: Create Mapping
Feature: Links to Online Data Repositories

PubMed is a service of the U.S. National Library of Medicine that includes over 17 million citations from MEDLINE and other life science journals for biomedical articles back to the 1950s. PubMed includes links to full text articles and other related resources.

ArrayExpress is a public repository for microarray data, which is aimed at storing MIAME-compliant data in accordance with MGED recommendations. The ArrayExpress Data Warehouse stores gene-indexed expression profiles from a curated subset of experiments in the repository.

<table>
<thead>
<tr>
<th>Element ID</th>
<th>Annotation Context</th>
<th>Element Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-GEOD-4731</td>
<td>title</td>
<td>View Element</td>
</tr>
<tr>
<td>E-GEOD-5230</td>
<td>title</td>
<td>View Element</td>
</tr>
<tr>
<td>E-MEXP-199</td>
<td>title</td>
<td>View Element</td>
</tr>
<tr>
<td>E-MEXP-199</td>
<td>description</td>
<td>View Element</td>
</tr>
<tr>
<td>E-MEXP-84</td>
<td>description</td>
<td>View Element</td>
</tr>
<tr>
<td>E-SMDB-2975</td>
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<td>View Element</td>
</tr>
<tr>
<td>E-TABM-36</td>
<td>description</td>
<td>View Element</td>
</tr>
</tbody>
</table>

ClinicalTrials.gov provides regularly updated information about federally and privately supported clinical research in human volunteers. ClinicalTrials.gov gives you information about a trial's purpose, who may participate, locations, and phone numbers for more details. The information provided on ClinicalTrials.gov should be used in conjunction with advice from health care professionals. Before searching, you may want to learn more about clinical trials.

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Feature: Marginal Notes
Feature: BioPortal Ontology Developer Home Page

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<tr>
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<tbody>
<tr>
<td><strong>Home</strong></td>
<td>BioPortal home page.</td>
</tr>
<tr>
<td><strong>Browse</strong></td>
<td>Browse the BioPortal.</td>
</tr>
<tr>
<td><strong>Search</strong></td>
<td>Search for ontologies.</td>
</tr>
<tr>
<td><strong>Subscribed Feeds</strong></td>
<td>Subscribed feeds and their descriptions.</td>
</tr>
<tr>
<td><strong>My Ontologies</strong></td>
<td>Ontologies and their statuses.</td>
</tr>
<tr>
<td><strong>Statistics</strong></td>
<td>Total number of ontologies, NCBO Library, Remote, number of classes/types.</td>
</tr>
</tbody>
</table>
BioPortal will offer

- Ontology repository functionality
- Linkages among different ontologies
- Community-based peer review and ontology annotation
- Linkages between ontology content and related online data repositories
- Support for communities of ontology users and developers