

# BioModels Database

<http://www.ebi.ac.uk/biomodels>

Chen Li

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## Updates including, but not limited to . . .

- **Non-curated pipeline**
- Simulation result
- Integrated with MIRIAM database
- Search engine optimization
- New graphical format (except GIF and SVG, dynamic applet is available)

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## External resources

model	Submitter, Creators, publication, Gene Ontology, ICD10, KEGG pathway, OMIM, Reactome, Taxonomy
compartment	Gene Ontology
reaction participant	BIND complex, ChEBI, Ensembl, Gene Ontology, InterPro, KEGG compound, OMIM, Taxonomy, UniProt
mathematical expression	BIND interaction, EC code, Gene Ontology, IntAct, KEGG pathway, KEGG Reaction, Reactome

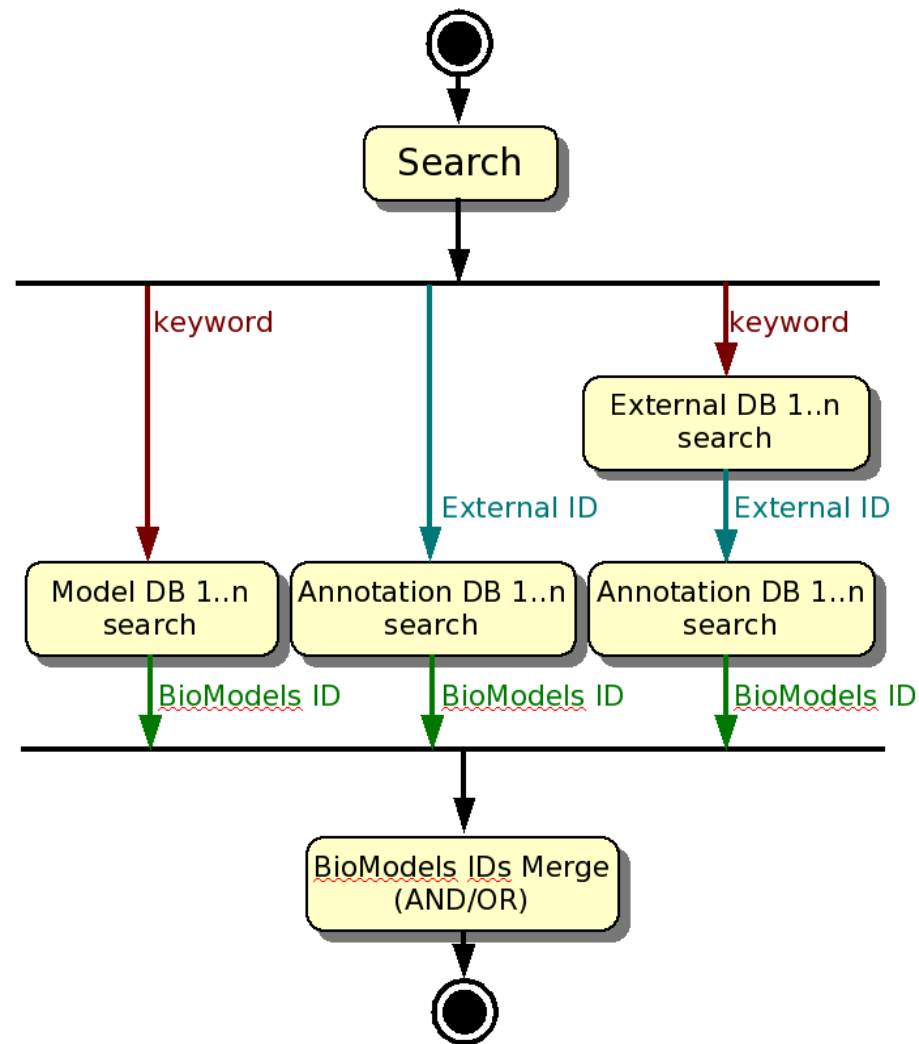
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## Search engine principles





- ..... Browse
- ..... Search
- Submit Your Model**
- ..... Curation tips
- ..... Annotation tips
- Sign in**
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- Model of the month
- Terms of Use
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- Meetings
- Contact
- Quote

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## Search Models

[Text Search](#)

You can search BioModels Database for models using one or more of the following criteria:

- ◆ **BioModels ID** → Search BioModels Database for *exact* BioModels identifiers (for example *BIOMD0000000001* or *BIOMD0000000022*).
- ◆ **Person** → Search BioModels Database for model submitter and/or creator(s) names, or model reference publication author(s) names (for example *Nicolas Le Novère*, *Nicolas Bruce Shapiro* or *Shapiro*, *Edelstein* or *Novak*).
- ◆ **SBML Elements** → Search BioModels Database for SBML elements by either name or *notes* content (for example *Edelstein* or *nicotinic*).
- ◆ **Resource** → Search BioModels Database for related information found in the models reference publication or third-party resources, by either publication/resource identifier or text (for example *9256450* or *cyclin* for publication, *GO:0007049* or *cell cycle* for [Gene Ontology](#), *P04551* or *cell division* for [UniProt](#)).
- ◆ **Resource ID** → Search BioModels Database for annotations, by third-party resource identifiers (for example *IPR002394* for [InterPro](#), *hsa04080* for [KEGG Pathway](#), *68910* for [Reactome](#)).

A part from the *BioModels ID* -based search, for every other criteria the search operates on a *contains* basis. Searching for *Shapiro* or *shapiro* will return the same results as searching for *Shapiro* or *shapiro*. In addition, since search strings are case-insensitive, searching for *Shapiro* or *shapiro* will return the same results as searching for *Shapiro* or *shapiro*.

Multiple criteria can be combined with either *and* or *or*. If *and* is selected, only those models satisfying all the criteria will be returned. If *or* is selected, all the models satisfying at least one of the criteria will be returned.

**BioModels ID:**

**Person:**

**SBML Elements:**

**Resource:** Publication

**Resource:** Publication

**Resource:** Publication

**Resource ID:** BIND

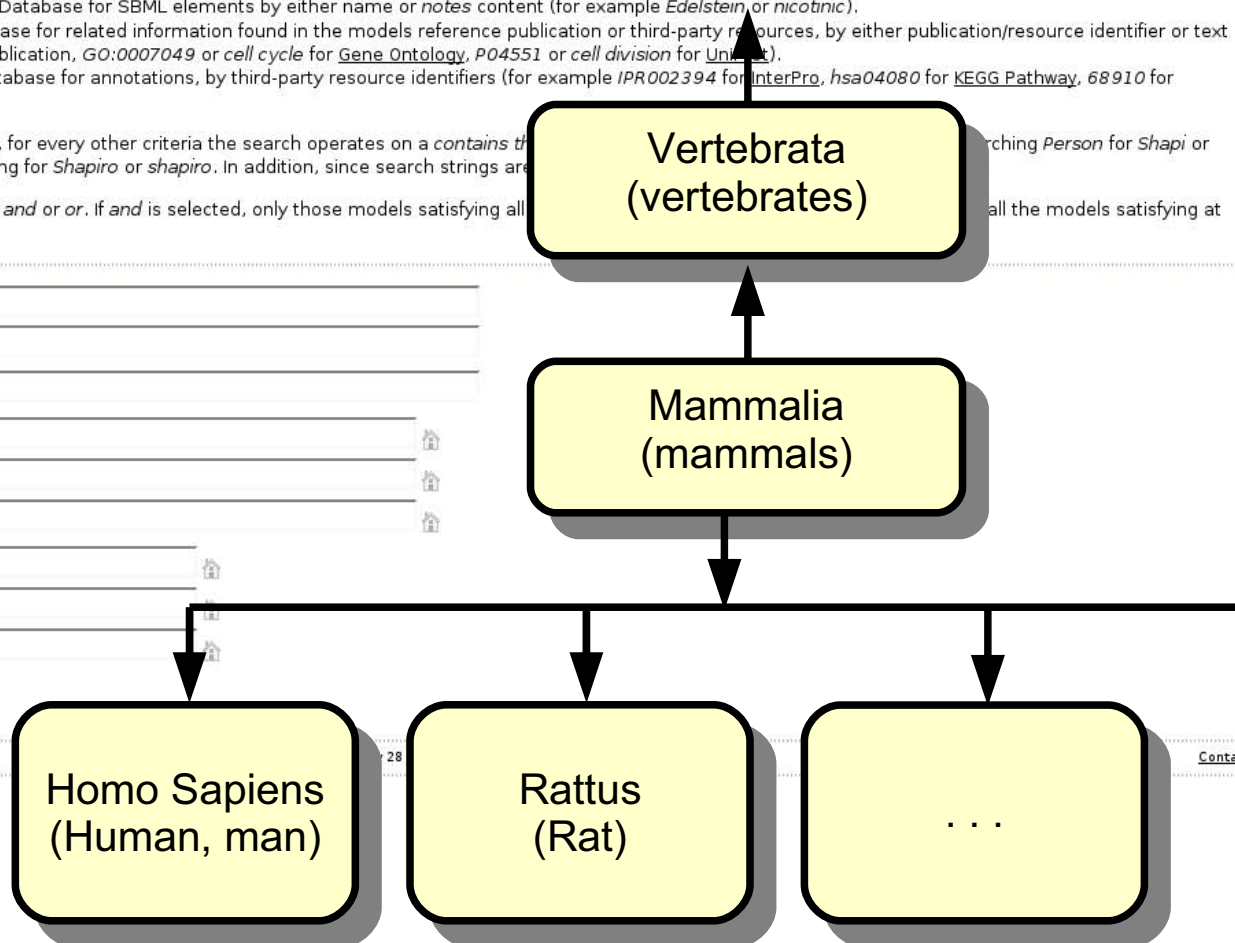
**Resource ID:** BIND

**Resource ID:** BIND

Compose by:  and  or

[Top](#)

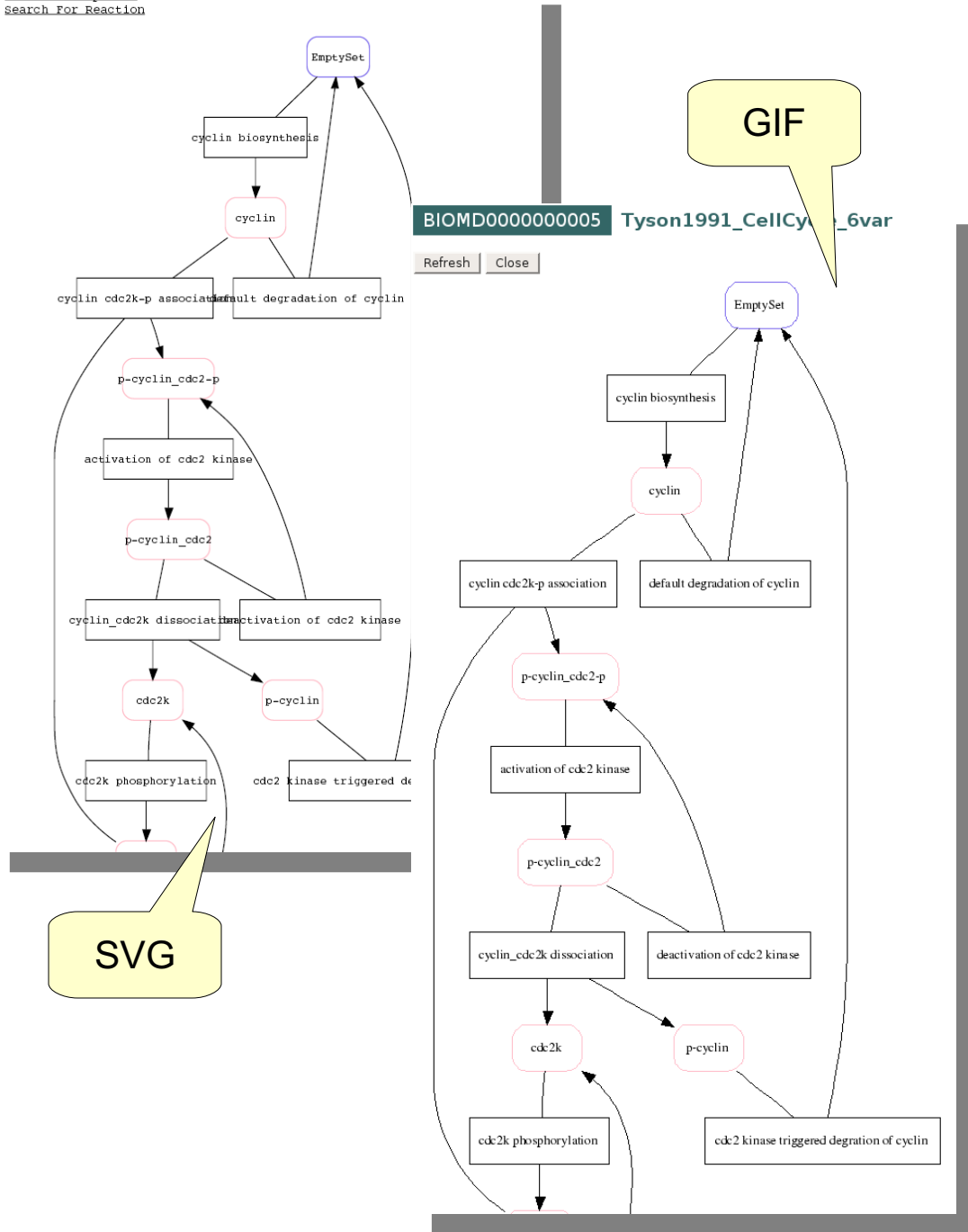
[Contact](#)



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Search For Species  
Search For Reaction





## Future plan

- **SBML L2V2**
- Web Services
- Integrate other SBML softwares with BioModels DB
- Integration with SBO
- Interface improvement (AJAX)
- Relational database

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## Web Services planned

- **getModelById(String modelId)**
- **getModelByName(String name)**
- **getModelNameById(String modelId)**
- **getModelIdByName(String modelName)**
- **getModelByPublicationId(String publicationId)**
- **getModelsByAuthor(String authorName)**
- **getModelsByTaxonomy(String taxonomyName)**
- . . .

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Curated Models

Non-curated Models

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# BIOMD0000000005 Tyson1991\_CellCycle\_6var

SBML L2 V1 | CellML | SciLab | XPP | BioPAX

View Model Graph | View Model SVG | View Model Applet Graph

Submit Model Comment/Bug

☰ ☱ ☲

## Reference Publication

**Publication ID:** [1831270](#)

Proc Natl Acad Sci U S A 1991 Aug;88(16):7328-32.  
 Modeling the cell division cycle: cdc2 and cyclin interactions.  
 Tyson JJ.  
 Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg 24061. [\[more\]](#)

## Model

**Original Model:** *Unspecified*

**Submitter:** [Nicolas Le Novere](#)

**Submission Date:** 2005-09-13T13:31:08

**Last Modification Date:** 2006-04-02T18:20:03

**Creation Date:** 2005-02-08T18:28:27

**Creators:** [Bruce Shapiro](#)

**Gene Ontology** [mitotic cell cycle](#)

**KEGG Pathway** [sce04110](#)

**Reactome** [69278](#)

**Taxonomy** [Fungi/Metazoa\\_group](#)

## Compartments (1)

**cell**  
 Referred to as: *cell*

bqbiol:is set #1 **Gene Ontology** [cell](#)

## Species (7)

**EmptySet**  
 Compartment: [cell](#)  
 Referred to as: *EmptySet*

**cdc2k**  
 Compartment: [cell](#)  
 Referred to as: *C2*

**cdc2k-P**  
 Compartment: [cell](#)  
 Referred to as: *CP*

**p-cyclin\_cdc2**  
 Compartment: [cell](#)  
 Referred to as: *M*

**p-cyclin\_cdc2-p**  
 Compartment: [cell](#)  
 Referred to as: *pM*

**cyclin**  
 Compartment: [cell](#)  
 Referred to as: *Y*

**p-cyclin**  
 Compartment: [cell](#)

bqbiol:isVersionOf set #1 **UniProt** [CDC2\\_SCHPO](#)

bqbiol:isVersionOf set #1 **UniProt** [CDC2\\_SCHPO](#)

bqbiol:hasPart set #1 **InterPro** [IPR006670](#)  
**UniProt** [CDC2\\_SCHPO](#)

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Models

Annotate  
Noncurated-models

Delete Public  
Model

Admin Users

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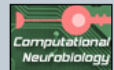
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Reference Publication	
<b>Publication ID:</b> <u>1833774</u> <a href="#">Edit</a>	Proc Natl Acad Sci U S A 1991 Oct;88(20):9107-11. A minimal cascade model for the mitotic oscillator involving cyclin and cdc2 kinase. Goldbeter A. Faculté des Sciences, Université Libre de Bruxelles, Belgium. <a href="#">[more]</a>
Model	
<b>Original Model:</b> <i>Unspecified</i> <a href="#">Edit</a>	bqbiol:is set #1 <a href="#">Taxonomy Amphibia</a> <a href="#">Remove</a>
<b>Submitter:</b> <a href="#">Nicolas Le Novere</a>	Update Gene Ontology GO: <a href="#">Add</a> <a href="#">Home</a>
<b>Submission Date:</b> 2005-09-13T13:24:56	set #1 <a href="#">Gene Ontology mitotic cell cycle</a> <a href="#">Remove</a>
<b>Last Modification Date:</b> 2006-09-06T23:26:41	Update <a href="#">KEGG Pathway hsa04110</a> <a href="#">Remove</a>
<b>Creation Date:</b> 2005-02-06T23:39:40	Gene Ontology GO: <a href="#">Add</a> <a href="#">Home</a>
<b>Creators:</b> <a href="#">Bruce Shapiro</a> <a href="#">Remove</a>	set #1 <a href="#">Reactome REACT_152</a> <a href="#">Remove</a>
<a href="#">Add</a>	Update Gene Ontology GO: <a href="#">Add</a> <a href="#">Home</a>
<a href="#">Add</a>	bqmodel:is Gene Ontology GO: <a href="#">Add</a> <a href="#">Home</a>
Compartments (1)	
<b>cell</b> <i>Referred to as: cell</i>	bqbiol:is set #1 <a href="#">Gene Ontology cell</a> <a href="#">Remove</a>
<a href="#">Update</a>	Gene Ontology GO: <a href="#">Add</a> <a href="#">Home</a>
<a href="#">Add</a>	bqmodel:is Gene Ontology GO: <a href="#">Add</a> <a href="#">Home</a>
Species (3)	
<b>Cyclin</b> Compartment: <i>cell</i> <i>Referred to as: C</i>	bqbiol:isVersionOf set #1 <a href="#">InterPro IPR006670</a> <a href="#">Remove</a>
<a href="#">Update</a>	CHEBI CHEBI: <a href="#">Add</a> <a href="#">Home</a>
<a href="#">Add</a>	bqmodel:is CHEBI CHEBI: <a href="#">Add</a> <a href="#">Home</a>
<b>CDC-2 Kinase</b> Compartment: <i>cell</i> <i>Referred to as: M</i>	Update <a href="#">UniProt CDC2B_XENLA</a> <a href="#">Remove</a>
<a href="#">Add</a>	set #1 <a href="#">UniProt CDC2A_XENLA</a> <a href="#">Remove</a>
<a href="#">Add</a>	CHEBI CHEBI: <a href="#">Add</a> <a href="#">Home</a>
<a href="#">Add</a>	bqmodel:is CHEBI CHEBI: <a href="#">Add</a> <a href="#">Home</a>
<b>Cyclin Protease</b> Compartment: <i>cell</i> <i>Referred to as: X</i>	bqmodel:is CHEBI CHEBI: <a href="#">Add</a> <a href="#">Home</a>
Rules (2)	
<b>Assignment Rule</b>	bqmodel:is Enzyme Nomenclature <a href="#">Add</a> <a href="#">Home</a>
<b>Assignment Rule</b>	bqmodel:is Enzyme Nomenclature <a href="#">Add</a> <a href="#">Home</a>
Reactions (7)	
<b>creation of cyclin</b>	bqbiol:isVersionOf set #1 <a href="#">Gene Ontology translation</a> <a href="#">Remove</a>
Reactants:	Update Enzyme Nomenclature <a href="#">Add</a> <a href="#">Home</a>
Products: <a href="#">Cyclin</a>	bqmodel:is Enzyme Nomenclature <a href="#">Add</a> <a href="#">Home</a>
Modifiers:	<a href="#">Add</a> <a href="#">Home</a>

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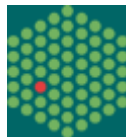
### **EBI**

- Nicolas Le Novère
- Marco Donizelli
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- Nicolas Rodriguez
- Mélanie Courtot
- Arnaud Henry
- Camille Laibe

### **SBML Team**

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