

02.09.10

JOBIM 2010  
7-9 Septembre  
Montpellier  
France

# IntAct and data distribution with PSICQUIC

Marine Dumousseau (EBI, Hinxton, UK)



# The IntAct molecular interaction database

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



- Freely available, open-source database system
- Public repository of experimental molecular interactions (228,023 binary interactions)
- Interactions manually curated and reviewed by experts
- Interaction derived from literature or direct user submissions
- Curation standard exceeding Minimum Information Required for Molecular Interaction (**MIMIx**) \*
- Member of **IMEx** (<http://www.imexconsortium.org/>)

\* *The minimum information required for reporting a molecular interaction experiment (MIMIx), Orchard et al., Nat Biotechnol. 2007 Aug;25(8):894-8*

# IntAct tabular view

EBI > Databases > Pathways & Networks > IntAct > View

Search:  Search Clear [Show Advanced Fields »](#) [MIQL syntax reference](#)

Home Search **Interactions (49)** Browse Lists Interaction Details Molecule View Graph

Browse by [taxonomy](#), [gene ontology](#)

[What is this view](#)

- > 49 binary interactions were found in IntAct. 13 of them are originated from [spoke expanded co-complexes](#) and you may want to [filter](#) them.
- > Your query also matches 147 interaction evidences from 6 other databases.
- > Your query also matches 7 interaction evidences from 1 other IMEx databases.

**MITAB  
PSI-MI XML**

Previous 1-30 of 49 Next 19 | Export to:  Export  Previous 1-30 of 49 Next 19

	Name molecule A	Links molecule A	Name molecule B	Links molecule B	Aliases molecule A	Aliases molecule B	Species molecule A	Species molecule B	Publication Identifier	Interaction Detection Method	Interaction AC	Expansion Method
1	HSP27 <small>PR PY UN</small>		HSP27 <small>PR BA UN</small>		HSP27; HSP28; Heat shock 27 kDa protein; [+]	HSP27; HSP28; Heat shock 27 kDa protein; [+]	<a href="#">9606</a>	<a href="#">9606</a>	<a href="#">11003656</a>	<a href="#">pull down</a>	<a href="#">EBI-1559154</a>	
2	HSP27 <small>PR BA UN</small>		EPN <small>PR PY UN</small>		HSP27; HSP28; Heat shock 27 kDa protein; [+]	EPN; Neutral endopeptidase 24.11; Enkephalinase; [+]	<a href="#">9606</a>	<a href="#">9606</a>	<a href="#">17342744</a>	<a href="#">anti bait coimmunoprecipitation</a>	<a href="#">EBI-1391418</a>	
3	<small>PR NE UN</small>		<small>PR NE UN</small>					<a href="#">17342744</a>	<a href="#">confocal microscopy</a>	<a href="#">EBI-1391434</a>		
4	<small>PR PY UN</small>		<small>PR BA UN</small>					<a href="#">17342744</a>	<a href="#">anti bait coimmunoprecipitation</a>	<a href="#">EBI-1389788</a>	<a href="#">Spoke</a>	
5	<small>PR PY UN</small>		<small>PR BA UN</small>					<a href="#">17342744</a>	<a href="#">anti bait coimmunoprecipitation</a>	<a href="#">EBI-1573319</a>	<a href="#">Spoke</a>	

**interaction**
**Choice of UniProtKB or Dasty View**
**UniProt Taxonomy**
**PubMed**
**Method (PSI-MI CV)**

# PSICQUIC : a common query interface

<http://psicquic.googlecode.com>

EBI > Databases > Pathways & Networks > IntAct > View

Search:    [Show Advanced Fields »](#)

[Home](#) [Search](#) [Interactions \(49\)](#) [Browse](#) [Lists](#) [Interaction Details](#) [Molecule View](#) [Graph](#)

 Browse by [taxonomy](#), [gene ontology](#)

> **49** binary interactions were found in IntAct. **13** of them are originated from [spoke expanded co-complexes](#) and you may want to [filter](#) them.

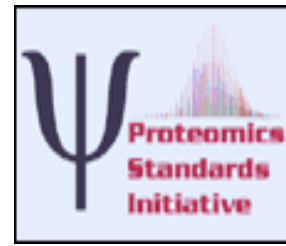
> Your query also matches **147** interaction evidences from **6** other databases.  
> Your query also matches **7** interaction evidences from **1** other IMEx databases.

- **Proteomics Standards Initiative Common QUery Interface**
- Community effort to standardise the way to access and retrieve data from Molecular Interaction databases.
- Widely implemented by independent interaction data resources.
- Based on the PSI standard formats (PSI-MI XML and MITAB)\*
- Data access : SOAP or REST

\* *The HUPO PSI Molecular Interaction Format - A community standard for the representation of protein interaction data, Hermjakob et al., Nat Biotechnol. 22, 2004: 177-183*

# PSICQUIC view

<http://www.ebi.ac.uk/Tools/webservices/psicquic/view/main.xhtml>



 **PSICQUIC View**

Search:    [Fields »](#) [MIQL syntax reference](#)

Total: **14,327,334** binary interactions

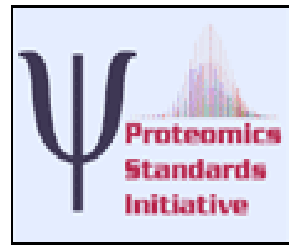
Click on the links below to display the results for each service ([refresh](#))

<a href="#">APID</a> - 416,124	<a href="#">InnateDB</a> - 9,909	<a href="#">MINT</a> - 124,473	<a href="#">STRING</a> - 12,231,763
<a href="#">BioGrid</a>	<a href="#">IntAct</a> - 228,023	<a href="#">MPIDB</a> - 24,268	
<a href="#">ChEMBL</a> - 581,858	<a href="#">iRefindex</a> - 404,453	<a href="#">Reactome</a> - 74,861	
<a href="#">DIP</a> - 20,769	<a href="#">MatrixDB</a> - 845	<a href="#">Reactome-Fls</a> - 209,988	

- 14,327,334 binary interactions in PSICQUIC
- 13 molecular interaction databases

# PSICQUIC view

<http://www.ebi.ac.uk/Tools/webservices/psicquic/view/main.xhtml>



**PSICQUIC View**

Search:  Search Clear [Fields >](#) [MIQL syntax reference](#)

Total: **388** binary interactions

Click on the links below to display the results for each service ([refresh](#))

- APID - 0
- BioGrid
- ChEMBL - 6
- DIP - 0
- InnateDB - 11
- IntAct - 49
- iRefIndex - 56
- MatrixDB - 0
- MINT - 21
- MPIDB - 0
- Reactome - 0
- Reactome-Fls - 22
- STRING - 223

IntAct

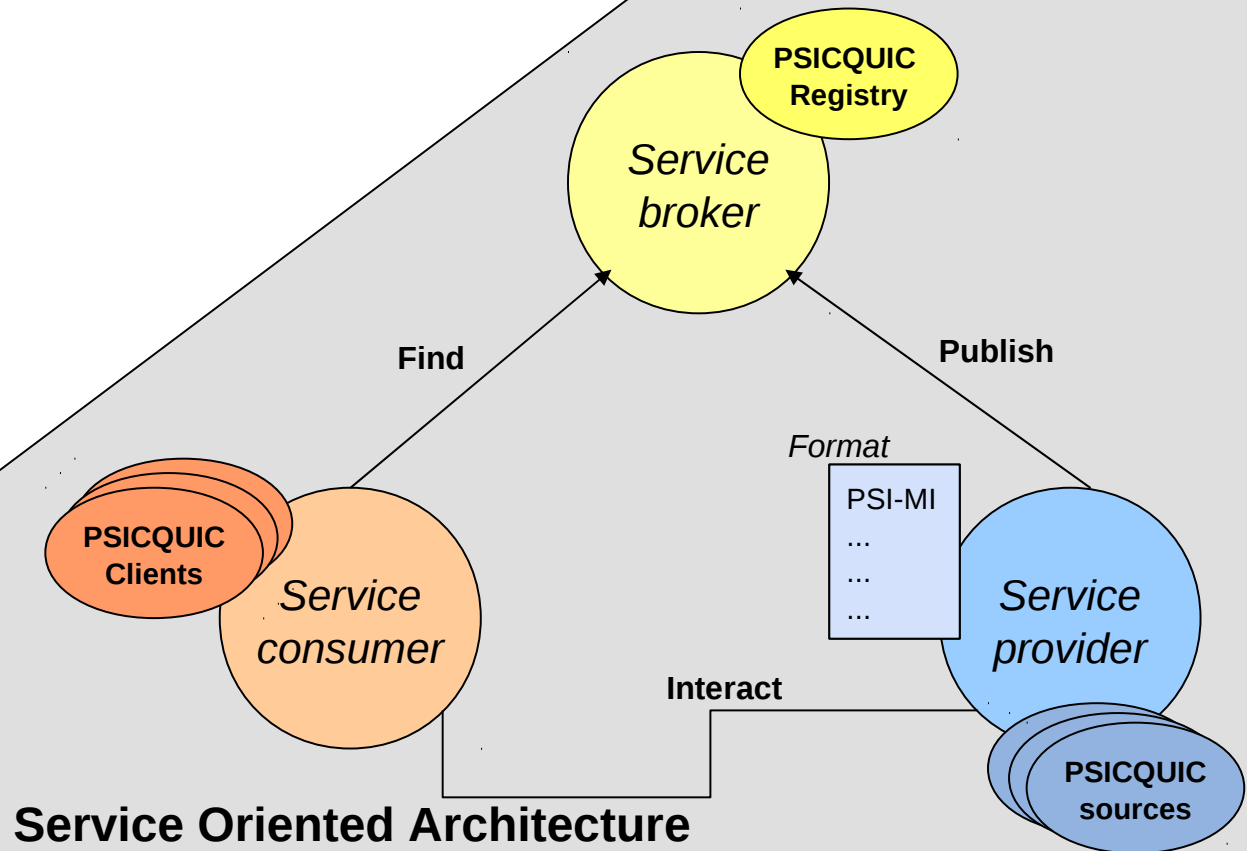
Export: [PSI-MI TAB](#) [PSI-MI 2.5](#)

	Name molecule A	Links molecule A	Name molecule B	Links molecule B	Alt. identifiers molecule A	Alt. identifiers molecule B	Aliases molecule A	Aliases molecule B	Species molecule A	Species molecule B	First Author	PubMed Identifier	Interaction Type	Interaction Detection Method
1	<a href="#">P15991</a> ; <a href="#">EBI-1559114</a>	<a href="#">UniProt</a>	<a href="#">P04792</a> ; <a href="#">EBI-352682</a>	<a href="#">UniProt</a>	HSP 27; Heat shock 27 kDa protein; HSP27; hspb1_criilo	HSP27; HSP28; Heat shock 27 kDa protein; HSP 27; Stress-responsive protein 27; Estrogen-regulated 24 kDa protein; 28 kDa heat shock protein; hspb1_human	HSPB1	HSPB1	Long-tailed hamster ( <a href="#">10030</a> )	Human ( <a href="#">9608</a> )	Charette et al. (2000)	<a href="#">11003656</a>	<a href="#">physical association</a>	<a href="#">pull down</a>

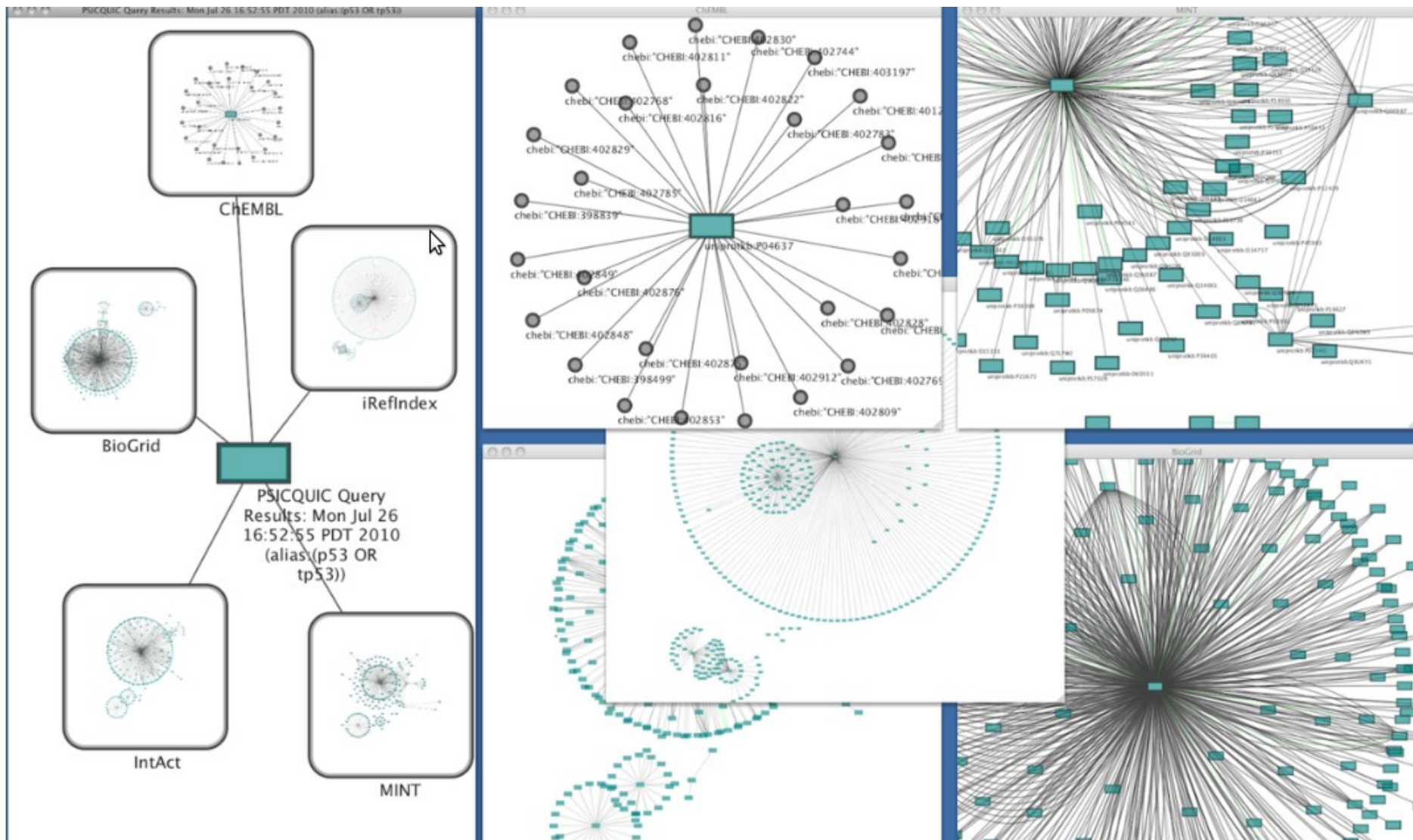


# PSICQUIC implementation

- PSICQUIC Server (SOAP/REST **web service**)
- PSICQUIC Registry
- PSICQUIC Clients
  - PSICQUIC view
  - Cytoscape
  - ...
- **Open source !**



# PSICQUIC Plugin in cytoscape





# Acknowledgements



## IntAct team :

Marine DUMOUSSEAU  
Samuel KERRIEN  
Jyoti KHADAKE  
Sandra ORCHARD  
Bruno ARANDA  
Margaret DUESBURY  
Henning HERMJAKOB



IntAct is funded by the European Commission under SLING, grant agreement number 226073 (Integrating Activity) within Research Infrastructures of the FP7, under PSIMEx, contract number FP7-HEALTH-2007-223411 and under APO-SYS, contract number FP7-HEALTH-2007-200767.

## & former colleagues

PSICQUIC  
support



More ...

**PSIMEx Workshop : Interaction and Pathways**

September 27-29

Lyon, France