



The Open PHACTS Discovery Platform from a network biology perspective

DOI:

[10.7490/f1000research.1112676.1](https://doi.org/10.7490/f1000research.1112676.1)

Document Version

Final published version

[Link to publication record in Manchester Research Explorer](#)

Citation for published version (APA):

Evelo, C., Willighagen, E. L., Lynch, N., Williams-Jones, B., Loizou, A., Soiland-Reyes, S., Miller, R., Gaulton, A., Papadatos, G., Harland, L., Goble, C., Woollard, P., Ecker, G., Digles, D., & Senger, S. (2016). *The Open PHACTS Discovery Platform from a network biology perspective*. Poster session presented at Network Biology SIG 2016, Orlando, United States. <https://doi.org/10.7490/f1000research.1112676.1>

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The Open PHACTS Discovery Platform from a network biology perspective

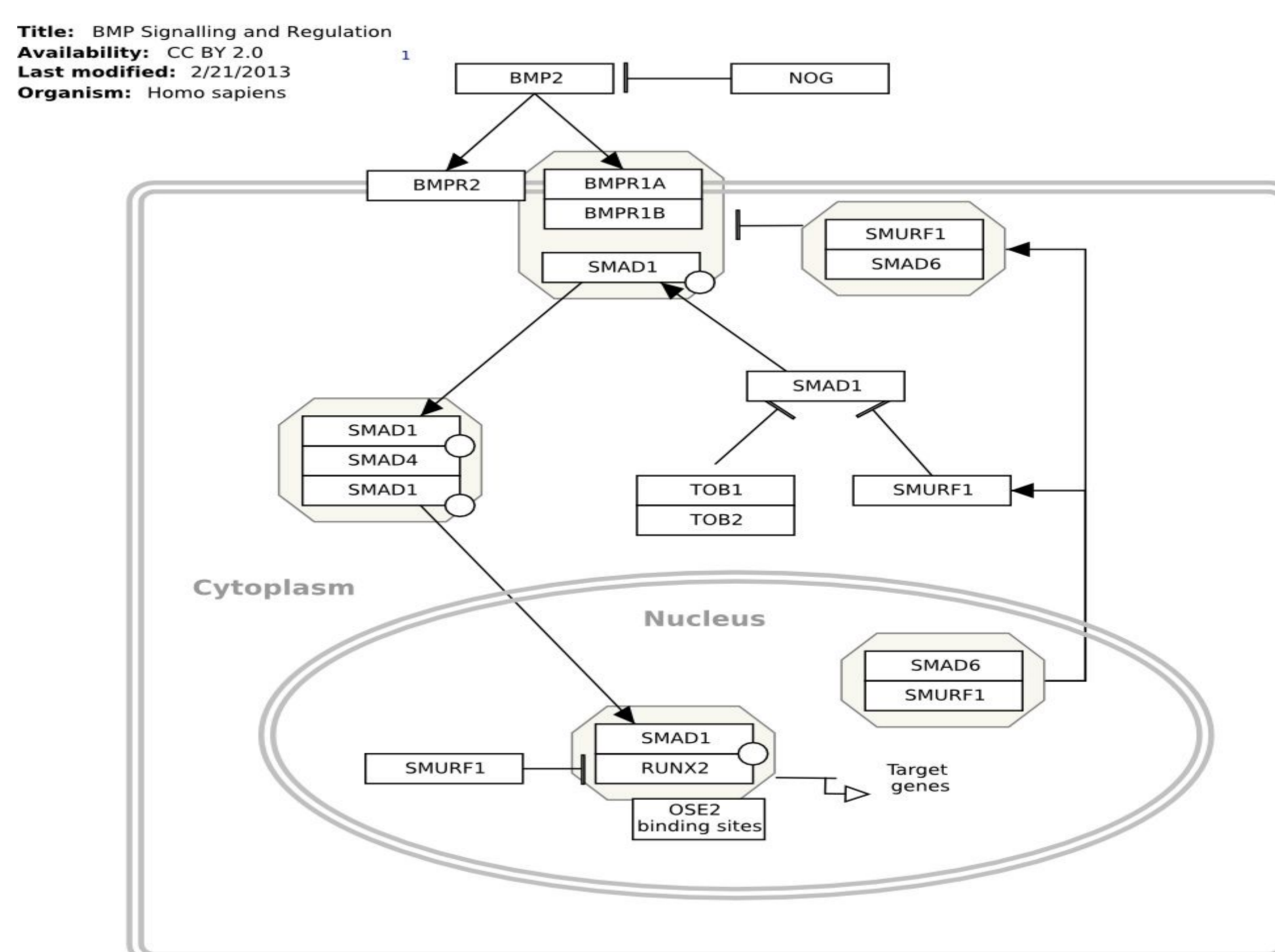
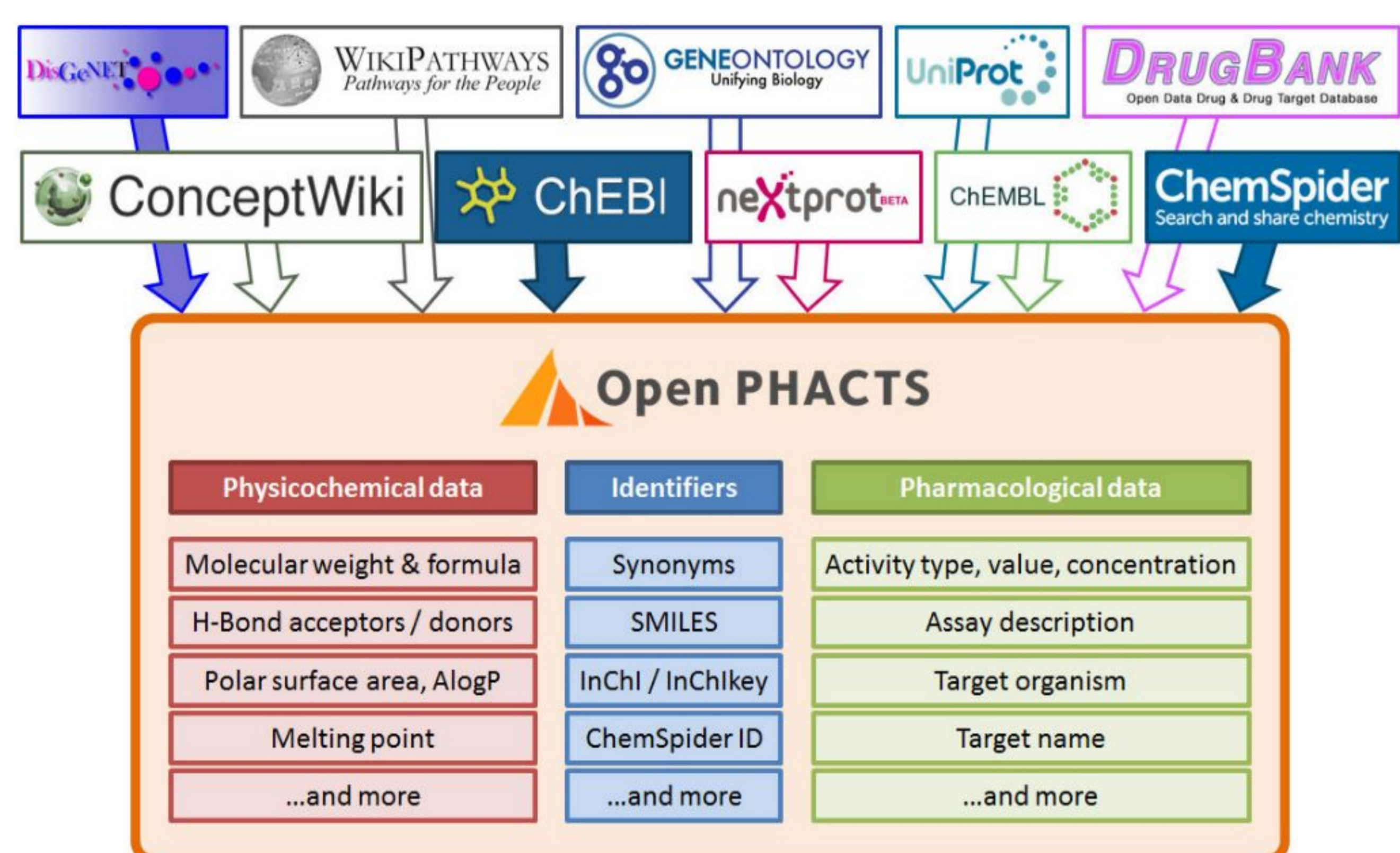
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Open PHACTS Background and History

Open PHACTS started as an Innovative Medicines Initiative (IMI) project in 2011. The objective was to integrate a wide range of pharmacologically related data into a central resource that is described according to standards of the semantic web community. Central to this unification was the development of an API to allow the project partners to build their own custom applications and workstreams. Also central to the Open PHACTS Discovery Platform is the development of *identity resolution* and *identity mapping* services and a chemistry resolution service. Over the last year the Open PHACTS Discovery Platform has matured with many exciting improvements and greater sustainability of the platform, improved code, data updates and new data sources.



WikiPathways and Interactions

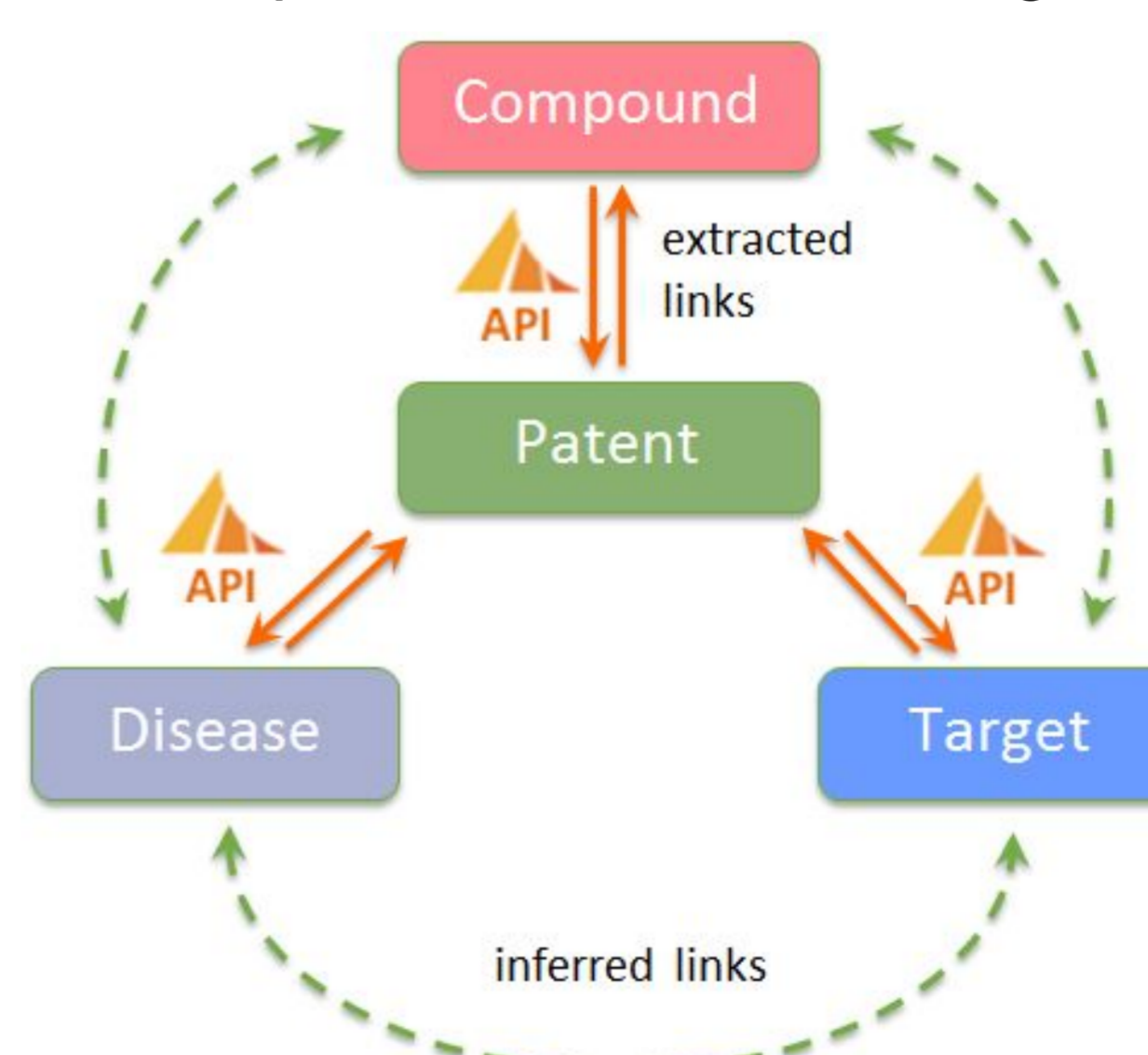
WikiPathways is an open, collaborative platform dedicated to the curation of biological pathways. WikiPathways thus presents a new model for pathway databases that enhances and complements ongoing efforts, such as KEGG, Reactome and Pathway Commons. WikiPathways increasingly tracks the interactions semantically by connecting data nodes in the pathway diagram to one another. The human Reactome pathways in WikiPathways are also incorporated in the Open PHACTS discovery platform. In the latest update for the API, three methods were added for pathway information, and specifically around interactions: Get Interactions, Interactions by Entity, and a count of these entities.

getInteractions example results

source	target	interactionType
http://identifiers.org/ensembl/ENSG00000170365	http://identifiers.org/ensembl/ENSG00000170365	http://vocabularies.wikipathways.org/wp#DirectedInteraction
http://identifiers.org/ensembl/ENSG00000198742	http://identifiers.org/ensembl/ENSG00000170365	http://vocabularies.wikipathways.org/wp#DirectedInteraction
http://identifiers.org/ensembl/ENSG00000198742	http://identifiers.org/ensembl/ENSG00000170365	http://vocabularies.wikipathways.org/wp#Inhibition
http://identifiers.org/ensembl/ENSG00000125845	http://identifiers.org/ncbigene/659	http://vocabularies.wikipathways.org/wp#DirectedInteraction
http://identifiers.org/ensembl/ENSG00000198742	http://identifiers.org/ensembl/ENSG00000124813	http://vocabularies.wikipathways.org/wp#DirectedInteraction

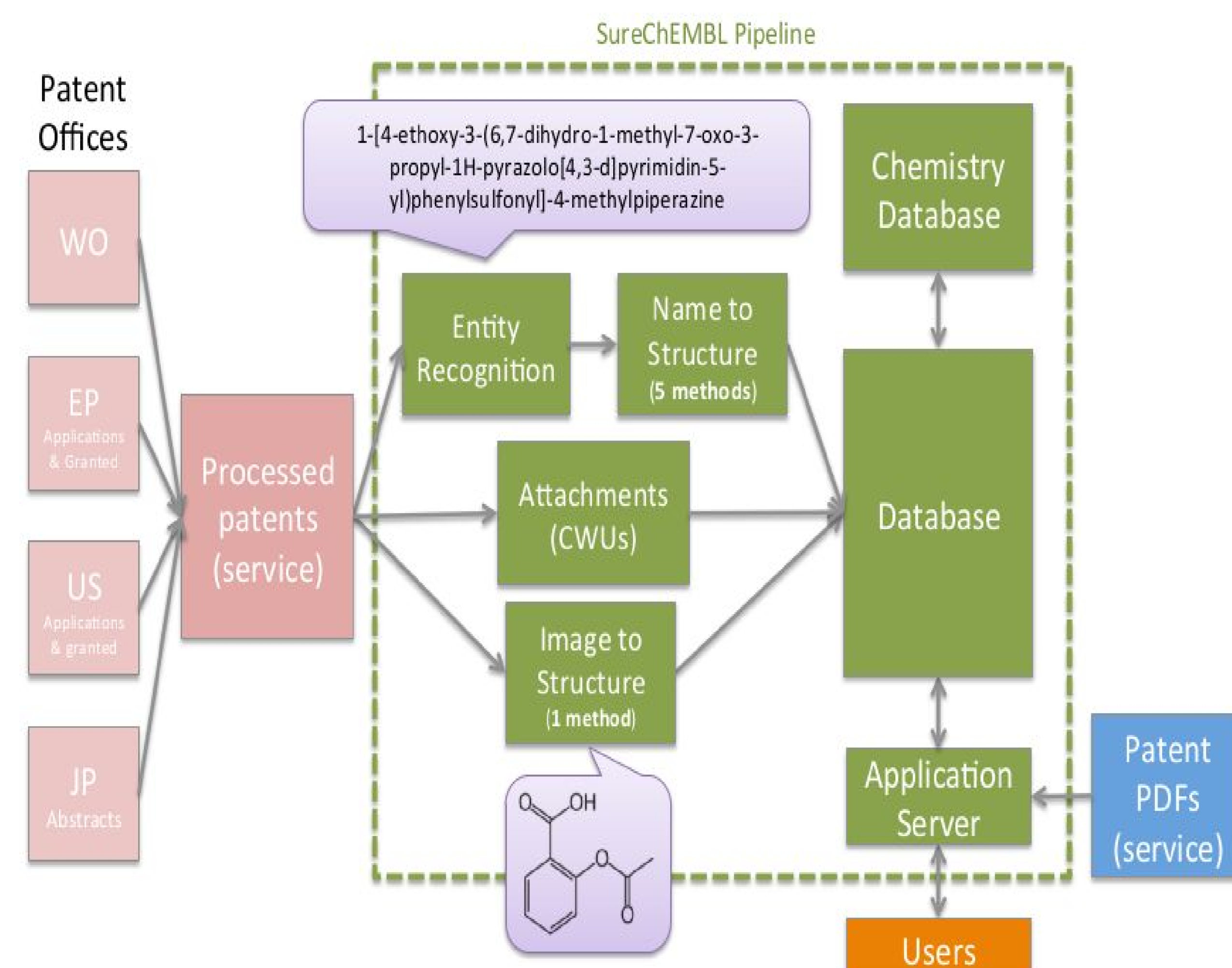
SureChEMBL and Open PHACTS

The association between patent documents and annotated chemical and biological entities for 3.6 million life-science relevant patents are now available via a set of API calls. A series of web services calls have been developed to allow users to query the data and to integrate it with the other data resources: the new API calls include Patent Information, Patent Entities, Patents for Compound, Patents for Target, and Patents for Disease.



Acknowledgements

We wish to acknowledge the Open PHACTS Foundation, the charitable organisation responsible for the Open PHACTS Discovery Platform, without which this work would not have been possible. The Open PHACTS project was supported by the Innovative Medicines Initiative Joint Undertaking under grant agreement no. 115191, resources of which are composed of financial contribution from the European Union's Seventh Framework Programme (FP7/2007-2013) and EFPIA companies' in kind contribution.



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Links:

Open PHACTS Foundation <http://www.openphactsfoundation.org>
WikiPathways <http://www.wikipathways.org>
WikiPathways RDF <http://rdf.wikipathways.org>
WikiPathways SPARQL <http://sparql.wikipathways.org>
Open PHACTS API <https://dev.openphacts.org>
SureChEMBL <https://www.surechembl.org/>