S1 Table: Comparison of ontology tools

Tool	Platform	Between-Term Similarity (Semantic Similarity)											Between-Entity Similarity (Functional Similarity)											Visualization			Enrichment Analysis	Reference
		Node-based								Edge-based		Hybrid	Pairwise				Groupwise							Term-Term	Entity-Term	Entity-Entity		
		MICA (Most Informative Common Ancestors)				CDA (Common Disjunctive Ancestors)											Vector-based		Graph-based					DAG (Directed Acyclic Graph)	Annotation	Functional Similarity Network		
		Resnik	Lin	JC (Jiang-	Rel	Resnik	Lin	JC	Rel	Yu2005	Wu2005	Wang	Max	Avg	BMA	rcMax	Cosine	Kappa	TO	NTO	UI	GIC	LP					
No.	**ALL BIOMEDICAL ONTOLOGIES**																											
1	**UFO**	**Cytoscape**	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	
2	SML-Toolkit	Java Package	v	v	v	v	v	v	v	v		v		v	v	v	v			v	v	v	v	v					https://www.ncbi.nlm.nih.gov/pubmed/24108186
No.	**GENE ONTOLOGY**																											
1	GOSim	R	v	v	v	v	v	v	v	v				v	v	v	v	v							v			v	https://www.ncbi.nlm.nih.gov/pubmed/17519018
2	GOSemSim	R	v	v	v	v							v																https://www.ncbi.nlm.nih.gov/pubmed/20179076
3	SemSim	R	v	v	v	v							v	v	v		v												http://www.bioconductor.org/packages/2.2/bioc/html/SemSim.html
4	GOvis/GOstats	R																			v		v	v				v	http://bioconductor.org/packages/2.3/bioc/html/GOstats.html
5	esbl.go	R	v	v	v	v	v	v	v	v							v	v				v						v	https://www.ncbi.nlm.nih.gov/pubmed/19025591
6	Golorize	Cytoscape																							v			v	https://www.ncbi.nlm.nih.gov/pubmed/17127678
7	ClueGO	Cytoscape																v										v	https://www.ncbi.nlm.nih.gov/pubmed/19237447
8	BiNGO	Cytoscape																						v				v	https://www.ncbi.nlm.nih.gov/pubmed/15972284
9	SimTrek	Cytoscape	v	v	v								v	v															https://www.ncbi.nlm.nih.gov/pubmed/20801912
10	DaGO-Fun	Web	v	v		v	v	v					v	v	v	v					v	v							https://www.ncbi.nlm.nih.gov/pubmed/24067102
11	FuSSiMeG	Web	v	v	v		v	v	v					v														v	http://xldb.fc.ul.pt/tools/rebil/ssm/
12	GOToolBox	Web																						v				v	https://www.ncbi.nlm.nih.gov/pubmed/15575967
13	ProteInOn	Web	v	v	v		v	v	v							v					v	v						v	http://repositorio.ul.pt/bitstream/10451/14140/1/07-6.pdf
14	G-SESAME	Web	v	v	v								v											v					https://www.ncbi.nlm.nih.gov/pubmed/19491312
15	FunSimMat	Web	v	v	v	v								v	v		v			v	v	v	v						https://www.ncbi.nlm.nih.gov/pubmed/17932054
16	GOssTo	Web	v	v	v	v	v	v	v	v				v								v	v						https://www.ncbi.nlm.nih.gov/pubmed/24659104
17	KU-GOAL	Web	v	v	v	v														v	v								https://www.ncbi.nlm.nih.gov/pubmed/26357220
18	AmiGO	Web																						v	v			v	https://www.ncbi.nlm.nih.gov/pubmed/19033274
19	Gorilla	Web																						v				v	https://www.ncbi.nlm.nih.gov/pubmed/19192299
20	g:Profiler	Web																							v			v	https://www.ncbi.nlm.nih.gov/pubmed/27098042
21	DynGO	Standalone													v									v	v				https://www.ncbi.nlm.nih.gov/pubmed/16091147
22	FastSemSim	Python Package	v	v	v	v							v	v	v	v		v		v	v	v	v						measures
23	A-DaGO-Fun	Python Package	v	v	v	v							v	v	v	v	v	v		v	v	v	v						https://www.ncbi.nlm.nih.gov/pubmed/26476781
No.	**DISEASE ONTOLOGY**																											
1	DOSim	R	v	v	v	v	v	v	v				v	v	v	v							v					v	https://www.ncbi.nlm.nih.gov/pubmed/21714896
2	DOSE	R	v	v	v	v							v															v	https://www.ncbi.nlm.nih.gov/pubmed/25677125
3	FunDO	Web	v		v							v	v															v	https://www.ncbi.nlm.nih.gov/pubmed/19478018
No.	**PHENOTYPE ONTOLOGY**																											
1	HPOSim	R	v	v	v	v							v	v	v													v	https://www.ncbi.nlm.nih.gov/pubmed/25664462
2	OWLSim	Standalone	v										v	v	v								v						http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2774506/
3	Phenomizer	Web	v																										https://www.ncbi.nlm.nih.gov/pubmed/19800049
4	PhenoDigm	Web	v										v	v															https://www.ncbi.nlm.nih.gov/pubmed/23660285
5	PhenomeNET/PhenomeBrowser	Web																					v						https://www.ncbi.nlm.nih.gov/pubmed/21737429
6	OntoSIML	Web	v																				v						http://phenomebrowser.net/ontosim/