

S1 Table: Comparison of ontology tools

No.	Tool	Platform	Between-Term Similarity (Semantic Similarity)										Between-Entity Similarity (Functional Similarity)										Visualization			Enrichment Analysis	Reference									
			Node-based				Edge-based	Hybrid	Pairwise				Vector-based		Groupwise						Term-Term	Entity-Term	Entity-Entity													
			MICA (Most Informative Common Ancestors)																		CDA (Common Disjunctive Ancestors)				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
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	v	v	v	v	v				
2	SML-Toolkit	Java Package	v	v	v	v	v	v	v	v				v	v	v	v																	https://www.ncbi.nlm.nih.gov/pubmed/24108186		
GENE ONTOLOGY																																				
1	GOSim	R	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																												http://www.bioconductor.org/packages/2.2/bioc/html/SemSim.html		
4	GOvis/GOstats	R																																v	http://bioconductor.org/packages/2.3/bioc/html/GOstats.html	
5	esbl.go	R	v	v	v	v	v	v	v	v																								v	https://www.ncbi.nlm.nih.gov/pubmed/19025591	
6	Golorize	Cytoscape																																v	https://www.ncbi.nlm.nih.gov/pubmed/17127678	
7	ClueGO	Cytoscape																																	v	https://www.ncbi.nlm.nih.gov/pubmed/19237447
8	BiNGO	Cytoscape																																	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																		https://www.ncbi.nlm.nih.gov/pubmed/24067102	
11	FuSSMeG	Web	v	v	v			v	v	v																									v	http://xldb.fc.ul.pt/tools/rebl/ssm/
12	GOToolBox	Web																																	v	https://www.ncbi.nlm.nih.gov/pubmed/15575967
13	ProteinOn	Web	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																															https://www.ncbi.nlm.nih.gov/pubmed/19491312
15	FunSimMat	Web	v	v	v	v									v	v		v																	https://www.ncbi.nlm.nih.gov/pubmed/17932054	
16	GOSTo	Web	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																												https://www.ncbi.nlm.nih.gov/pubmed/26357220	
18	AmiGO	Web																																		https://www.ncbi.nlm.nih.gov/pubmed/19033274
19	Gorilla	Web																																		https://www.ncbi.nlm.nih.gov/pubmed/19192299
20	g.Profiler	Web																																		https://www.ncbi.nlm.nih.gov/pubmed/27098042
21	DynGO	Standalone																																		https://www.ncbi.nlm.nih.gov/pubmed/16091147
22	FastSemSim	Python Package	v	v	v	v								v	v	v	v																		measures	
23	A-DaGO-Fun	Python Package	v	v	v	v								v	v	v	v	v																	https://www.ncbi.nlm.nih.gov/pubmed/26476781	
DISEASE ONTOLOGY																																				
1	DOSim	R	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																														https://www.ncbi.nlm.nih.gov/pubmed/25677125
3	FunDO	Web	v		v																															https://www.ncbi.nlm.nih.gov/pubmed/19478018
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																																	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																																	https://www.ncbi.nlm.nih.gov/pubmed/23660285
5	PhenomeNET/PhenomeBrowser	Web																																		https://www.ncbi.nlm.nih.gov/pubmed/21737429
6	OntoSIML	Web	v																																	http://phenomebrowser.net/ontosim/