

Title	Authors	Journal	Year	Validation Type	Label Type A	Data Source A	Data Source B	Data Source C
A large-scale computational approach to drug repositioning	Li YY, An J, Jones SJ	Genome Inform	2006	SV	Indication	DrugBank		
Concept-based semi-automatic classification of drugs	Gurulingappa H, Kolárik C, Hofmann-Apitius M, Fluck J	J Chem Inf Model	2009	SSV	ATC Code	KEGG BRITE		
Systematic Evaluation of Drug-Disease Relationships to Identify Leads for Novel Drug Uses	Annie P. Chiang and Atul J. Butte	Clin Pharm Therapeutics	2009	SV	Clinical Trials	ClinicalTrials.gov		
PREDICT: a method for inferring novel drug indications with application to personalized medicine	Gottlieb A, Stein GY, Ruppin E, Sharan R	Mol Syst Biol	2011	SSV	Indication	DrugBank	DailyMed	
Discovery and preclinical validation of drug indications using compendia of public gene expression data	Sirota M, Dudley JT, Kim J, Chiang AP, Morgan AA, Sweet-Cordero A, Sage J, Butte AJ	Sci Transl Med	2011	CSV				
Drug	Mathur S,	AMIA Annu	2011	SV	Clinical Trials	ClinicalTrials.gov		

Repositioning using Disease Associated Biological Processes and Network Analysis of Drug Targets	Dinakarbandian D	Symp Proc				v		
Systematic drug repositioning based on clinical side-effects	Yang L, Agarwal P	PLoS One	2011	SSV	Indication	GeneGo Metabase		
A New Method for Computational Drug Repositioning Using Drug Pairwise Similarity	Li J, Lu Z	IEEE Int Conf Bioinformatics Biomed Proc	2012	SSV	Indication	NDF-RT		
Rational drug repositioning guided by an integrated pharmacological network of protein, disease and drug	Lee HS, Bae T, Lee JH, Kim DG, Oh YS, Jang Y, Kim JT, Lee JJ, Innocenti A, Supuran CT, Chen L, Rho K, Kim S	BMC Syst Biol	2012	SSV	Indication	Drugs@FDA		
Multi-aspect candidates for repositioning: data fusion methods using heterogeneous	Arany Á, Bolgár B, Balogh B, Antal P, Mátyus P	Curr Med Chem	2013	SSV	ATC Codes	DrugBank		

information sources								
Evaluation of analytical methods for connectivity map data	Cheng J, Xie Q, Kumar V, Hurle M, Freudenberg JM, Yang L, Agarwal P	Pac Symp Biocomput	2013	SSV	ATC Codes	KEGG BRITE		
Network predicting drug's anatomical therapeutic chemical code	Wang YC, Chen SL, Deng NY, Wang Y	Bioinformatics	2013	SSV	ATC Codes	KEGG BRITE	DrugBank	
Generation and application of drug indication inference models using typed network motif comparison analysis	Choi J, Kim K, Song M, Lee D	BMC Med Inform Decis Mak	2013	SSV	Indication	CTD		
Drug target prediction and repositioning using an integrated network-based approach	Emig D, Ivliev A, Pustovalova O, Lancashire L, Bureeva S, Nikolsky Y, Bessarabova M.	PLoS One	2013	SSV	Disease Targets	Integrity		
Inferring disease association using clinical factors in a combinatorial manner and their use in drug	Jung J, Lee D	Bioinformatics	2013	SV	Indication, Clinical Trials	DrugBank	PharmGKB	TTD

repositioning								
Drug repositioning for orphan genetic diseases through Conserved Anticoexpressed Gene Clusters (CAGCs)	Molineris I, Ala U, Provero P, Di Cunto F	BMC Bioinformatics	2013	CSV				
Drug repositioning by kernel-based integration of molecular structure, molecular activity, and phenotype data	Wang Y, Chen S, Deng N, Wang Y	PLoS One	2013	SSV	Indication	DrugBank		
A hybrid method for prediction and repositioning of drug Anatomical Therapeutic Chemical classes	Chen L, Lu J, Zhang N, Huang T, Cai YD	Mol Biosyst	2014	SSV	ATC Code	KEGG BRITE		
Exploring the relationship between drug side-effects and therapeutic indications	Zhang P, Wang F, Hu J, Sorrentino R	AMIA Annu Symp Proc	2013	SSV	Indication	NDF-RT		
Pathway-based	Li J, Lu Z	BMC	2013	SSV	Indication	CTD		

drug repositioning using causal inference		Bioinformatics						
Drug repositioning by applying 'expression profiles' generated by integrating chemical structure similarity and gene semantic similarity	Tan F, Yang R, Xu X, Chen X, Wang Y, Ma H, Liu X, Wu X, Chen Y, Liu L, Jia X	Mol Biosyst	2014	SSV	Indication	NLP of Literature		
Computational drug repositioning through heterogeneous network clustering	Wu C, Gudivada RC, Aronow BJ, Jegga AG	BMC Syst Biol	2013	SSV	Indication, Clinical Trials	NLP of Literature		
Exploring the associations between drug side-effects and therapeutic indications	Wang F, Zhang P, Cao N, Hu J, Sorrentino R	J Biomed Inform	2014	SSV	Indication	NDF-RT		
Exploiting large-scale drug-protein interaction	Liu R, Singh N, Tawa GJ, Wallqvist A, Reifman J	BMC Bioinformatics	2014	SV	Indication	Various		

information for computational drug repurposing								
Drug-disease association and drug-repositioning predictions in complex diseases using causal inference-probabilistic matrix factorization.	Yang J, Li Z, Fan X, Cheng Y	J Chem Inf Model	2014	SSV	Indication	CTD		
Inferring novel indications of approved drugs via a learning method with local and global consistency	Yan Y, Shao X, Jiang Z	PLoS One	2014	SSV	Indication	KEGG BRITE		
Prediction of drug gene associations via ontological profile similarity with application to drug repositioning	Kissa M, Tsatsaronis G, Schroeder M	Methods	2015	SV	Indication	Drugs@FDA		
Repurpose terbutaline sulfate for amyotrophic	Paik H, Chung AY, Park HC, Park RW, Suk K, Kim J, Kim H,	Sci Rep	2015	SV	Clinical Trials	ClinicalTrials.gov y		

lateral sclerosis using electronic medical records	Lee K, Butte AJ.							
Similarity-based prediction for Anatomical Therapeutic Chemical classification of drugs by integrating multiple data sources	Liu Z, Guo F, Gu J, Wang Y, Li Y, Wang D, Lu L, Li D, He F	Bioinformatics	2015	SSV	ATC Code	DrugBank		
DrugNet: network-based drug-disease prioritization by integrating heterogeneous data	Martínez V, Navarro C, Cano C, Fajardo W, Blanco A	Artif Intell Med	2015	SSV	Clinical Trials	ClinicalTrials.gov v		
Prediction of drug indications based on chemical interactions and chemical similarities	Huang G, Lu Y, Lu C, Zheng M, Cai YD	Biomed Res Int	2015	SSV	Indication	Comprehensive Medicinal Chemistry		
Network-based inference methods for drug repositioning	Chen H, Zhang H, Zhang Z, Cao Y, Tang W	Comput Math Methods Med	2015	SSV	Indication	DrugBank		
Inferring drug-disease	Yu L, Huang J, Ma Z, Zhang J,	BMC Med Genomics	2015	SV	Indication	CTD		

associations based on known protein complexes	Zou Y, Gao L							
DMAP: a connectivity map database to enable identification of novel drug repositioning candidates	Huang H, Nguyen T, Ibrahim S, Shantharam S, Yue Z, Chen JY	BMC Bioinformatics	2015	SSV	Indication	DrugBank	DailyMed	TTD
Prediction of drug's Anatomical Therapeutic Chemical (ATC) code by integrating drug-domain network	Chen FS, Jiang ZR	J Biomed Inform	2015	SSV	ATC Codes	KEGG BRITE	DrugBank	
A Semi-Supervised Approach for Refining Transcriptional Signatures of Drug Response and Repositioning Predictions	Iorio F, Shrestha RL, Levin N, Boilot V, Garnett MJ, Saez-Rodriguez J, Draviam VM	PLoS One	2015	CSV				
Computing Therapy for Precision	Regenbogen S, Wilkins AD, Lichtarge O	Pac Symp Biocomput	2016	SSV	Indication	CTD		

Medicine: Collaborative Filtering Integrates and Predicts Multi- Entity Interactions								
DrugGenEx-Net: a novel computational platform for systems pharmacology and gene expression- based drug repurposing	Issa NT, Kruger J, Wathieu H, Raja R, Byers SW, Dakshanamurthy S	BMC Bioinformatics	2016	SV	Indication	Literature Review		
Generating Gene Ontology- Disease Inferences to Explore Mechanisms of Human Disease at the Comparative Toxicogenomics Database	Davis AP, Wiegers TC, King BL, Wiegers J, Grondin CJ, Sciaky D, Johnson RJ, Mattingly CJ	PLoS One	2016	CSV				