

Appendix: Data retrieval and evaluation functions

This appendix displays the data retrieval and evaluation functions for the 20 rules which are used to evaluate cardiotoxicity within the HyQue-Cardiotoxicity approach along with the associated dataset.

Rule number	Rule	Retrieval	Evaluation
1	Drug induced apoptosis	<pre> SELECT ?value WHERE { (?arg1) :get_ChEMBL_molecule_URI (?chemblmolecule) . SERVICE <http://www.ebi.ac.uk/rdf/services/ch embl/sparql> { ?activity a <http://rdf.ebi.ac.uk/terms/chembl#Activ ity> . ?activity <http://rdf.ebi.ac.uk/terms/chembl#has Molecule> ?chemblmolecule2 . ?activity <http://rdf.ebi.ac.uk/terms/chembl#has Assay> ?assay . ?assay <http://purl.org/dc/terms/description> ?description . FILTER (regex(?description, "TUNEL", "i") && regex(?description, "apoptosis", "i")) . ?activity <http://rdf.ebi.ac.uk/terms/chembl#publi shedValue> ?value . ?activity <http://www.bioassayontology.org/bao #BAO_0000208> <http://www.bioassayontology.org/bao #BAO_0001103> . FILTER regex(?chemblmolecule2, ?chemblmolecule) . } . } </pre>	<pre> ASK WHERE { (?adrug) :RetrieveTUNELAssayActivity_2 (?result) . FILTER (xsd:float(?result) > 20) . } </pre>
2	Cardiotoxicity assay involves the drug	<pre> SELECT ?activity WHERE { SERVICE <http://drugbank.bio2rdf.org/sparql> { ?arg1 rdfs:seeAlso ?dbid . SERVICE <http://www.ebi.ac.uk/rdf/services/ch embl/sparql> { ?assay <http://purl.org/dc/terms/description> </pre>	<pre> ASK WHERE { (?adrug) :RetrieveCardiotoxicityAssays (?result) . FILTER bound(?result) . } </pre>

		<pre> ?description . FILTER regex(?description, "cardiotoxicity", "i") . ?activity a <http://rdf.ebi.ac.uk/terms/chembl#Activ ity> . ?activity <http://rdf.ebi.ac.uk/terms/chembl#has Assay> ?assay . ?activity <http://rdf.ebi.ac.uk/terms/chembl#has Molecule> ?chemblmolecule . ?chemblmolecule <http://rdf.ebi.ac.uk/terms/chembl#mole culeXref> ?dbid . } . } . } </pre>	
3	Drug inhibits hERG channel	<pre> SELECT ?stdValue WHERE { (?arg1) :getDrug_ATC_Drugbank (?atc2) . SERVICE <http://www.ebi.ac.uk/rdf/services/ch embl/sparql> { ?activity a <http://rdf.ebi.ac.uk/terms/chembl#Activ ity> . ?activity <http://rdf.ebi.ac.uk/terms/chembl#has Molecule> ?chemblmolecule . ?chemblmolecule <http://rdf.ebi.ac.uk/terms/chembl#atcCl assification> ?atc . ?activity <http://rdf.ebi.ac.uk/terms/chembl#has Assay> ?assay . ?activity <http://rdf.ebi.ac.uk/terms/chembl#stan dardValue> ?stdValue . ?activity <http://rdf.ebi.ac.uk/terms/chembl#stan dardType> "IC50" . ?assay <http://rdf.ebi.ac.uk/terms/chembl#hasT arget> <http://rdf.ebi.ac.uk/resource/chembl/ta rget/CHEMBL240> . FILTER regex(?atc, ?atc2) . } . } </pre>	<pre> ASK WHERE { (?adrug) :Retrieve_hERG_IC50_2 (?IC50) . FILTER (xsd:float(?IC50) > 1) . } </pre>
4	Drug inhibits a target linked to cardiotoxicity	<pre> SELECT ?target ?action WHERE { SERVICE <http://drugbank.bio2rdf.org/sparql> { ?interaction a <http://bio2rdf.org/drugbank_vocabul </pre>	<pre> ASK WHERE { (?adrug) :RetrieveTargetsAndAction (?target ?action) . FILTER ((((((((((?target = <http://bio2rdf.org/drugbank.target:40> </pre>

		<p>SERVICE</p> <pre> <http://sider.bio2rdf.org/sparql> { ?compound <http://bio2rdf.org/sider_vocabulary:pu bchem-stereo-compound-id> ?pcc . ?compound <http://bio2rdf.org/sider_vocabulary:sid e-effect> ?sideEffect . } </pre>	<pre> (?sideEffect = <http://bio2rdf.org/umls:C0151878>)) (?sideEffect = <http://bio2rdf.org/umls:C0428772>)) (?sideEffect = <http://bio2rdf.org/umls:C0242698>)) (?sideEffect = <http://bio2rdf.org/umls:C0948089>)) (?sideEffect = <http://bio2rdf.org/umls:C0027051>)) (?sideEffect = <http://bio2rdf.org/umls:C0151744>)) (?sideEffect = <http://bio2rdf.org/umls:C0031039>)) (?sideEffect = <http://bio2rdf.org/umls:C0003811>)) (?sideEffect = <http://bio2rdf.org/umls:C0031046>)) (?sideEffect = <http://bio2rdf.org/umls:C0878544>)) (?sideEffect = <http://bio2rdf.org/umls:C0018801>)) (?sideEffect = <http://bio2rdf.org/umls:C0018800>)) (?sideEffect = <http://bio2rdf.org/umls:C0018799>)) (?sideEffect = <http://bio2rdf.org/umls:C0232197>)) (?sideEffect = <http://bio2rdf.org/umls:C0023212>)) (?sideEffect = <http://bio2rdf.org/umls:C1383860>)) (?sideEffect = <http://bio2rdf.org/umls:C0264714>)) (?sideEffect = <http://bio2rdf.org/umls:C0520863>)) (?sideEffect = <http://bio2rdf.org/umls:C0018808>)) (?sideEffect = <http://bio2rdf.org/umls:C0242973>)) (?sideEffect = <http://bio2rdf.org/umls:C0007177>)) (?sideEffect = <http://bio2rdf.org/umls:C0039240>)) (?sideEffect = <http://bio2rdf.org/umls:C0155652>)) (?sideEffect = <http://bio2rdf.org/umls:C0428977>)) (?sideEffect = <http://bio2rdf.org/umls:C0859934>)) (?sideEffect = <http://bio2rdf.org/umls:C0741921>)) (?sideEffect = <http://bio2rdf.org/umls:C0007166>)) (?sideEffect = <http://bio2rdf.org/umls:C0036974>)) (?sideEffect = </pre>
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			<http://bio2rdf.org/umls:C1444565>)) (?sideEffect = <http://bio2rdf.org/umls:C0854612>)) (?sideEffect = <http://bio2rdf.org/umls:C0852940>)) (?sideEffect = <http://bio2rdf.org/umls:C1141959>)) (?sideEffect = <http://bio2rdf.org/umls:C1167732>)) (?sideEffect = <http://bio2rdf.org/umls:C0340324>)) (?sideEffect = <http://bio2rdf.org/umls:C0160318>)) (?sideEffect = <http://bio2rdf.org/umls:C0085298>)) (?sideEffect = <http://bio2rdf.org/umls:C0010054>)) (?sideEffect = <http://bio2rdf.org/umls:C0264733>)) (?sideEffect = <http://bio2rdf.org/umls:C0919857>)) (?sideEffect = <http://bio2rdf.org/umls:C0042510>)) (?sideEffect = <http://bio2rdf.org/umls:C0520870>)) (?sideEffect = <http://bio2rdf.org/umls:C0877038>)) (?sideEffect = <http://bio2rdf.org/umls:C0600125>)) (?sideEffect = <http://bio2rdf.org/umls:C0877658>)) (?sideEffect = <http://bio2rdf.org/umls:C0520887>)) (?sideEffect = <http://bio2rdf.org/umls:C0877452>)) (?sideEffect = <http://bio2rdf.org/umls:C0520888>)) (?sideEffect = <http://bio2rdf.org/umls:C0151517>)) (?sideEffect = <http://bio2rdf.org/umls:C1328381>)) (?sideEffect = <http://bio2rdf.org/umls:C0039239>)) (?sideEffect = <http://bio2rdf.org/umls:C0340517>)) (?sideEffect = <http://bio2rdf.org/umls:C1536093>)) (?sideEffect = <http://bio2rdf.org/umls:C0344720>)) (?sideEffect = <http://bio2rdf.org/umls:C0238705>)) (?sideEffect = <http://bio2rdf.org/umls:C0039231>)) . }
	Drug predicted side	SELECT ?SideEffect ?pvalue WHERE {	ASK WHERE { (?drug) :RetrievePredictedSideEffectsOFFSIDES

			(?sideEffect = <http://bio2rdf.org/umls:C0007166>)) (?sideEffect = <http://bio2rdf.org/umls:C0036974>)) (?sideEffect = <http://bio2rdf.org/umls:C1444565>)) (?sideEffect = <http://bio2rdf.org/umls:C0854612>)) (?sideEffect = <http://bio2rdf.org/umls:C0852940>)) (?sideEffect = <http://bio2rdf.org/umls:C1141959>)) (?sideEffect = <http://bio2rdf.org/umls:C1167732>)) (?sideEffect = <http://bio2rdf.org/umls:C0340324>)) (?sideEffect = <http://bio2rdf.org/umls:C0160318>)) (?sideEffect = <http://bio2rdf.org/umls:C0085298>)) (?sideEffect = <http://bio2rdf.org/umls:C0010054>)) (?sideEffect = <http://bio2rdf.org/umls:C0264733>)) (?sideEffect = <http://bio2rdf.org/umls:C0919857>)) (?sideEffect = <http://bio2rdf.org/umls:C0042510>)) (?sideEffect = <http://bio2rdf.org/umls:C0520870>)) (?sideEffect = <http://bio2rdf.org/umls:C0877038>)) (?sideEffect = <http://bio2rdf.org/umls:C0600125>)) (?sideEffect = <http://bio2rdf.org/umls:C0877658>)) (?sideEffect = <http://bio2rdf.org/umls:C0520887>)) (?sideEffect = <http://bio2rdf.org/umls:C0877452>)) (?sideEffect = <http://bio2rdf.org/umls:C0520888>)) (?sideEffect = <http://bio2rdf.org/umls:C0151517>)) (?sideEffect = <http://bio2rdf.org/umls:C1328381>)) (?sideEffect = <http://bio2rdf.org/umls:C0039239>)) (?sideEffect = <http://bio2rdf.org/umls:C0340517>)) (?sideEffect = <http://bio2rdf.org/umls:C1536093>)) (?sideEffect = <http://bio2rdf.org/umls:C0344720>)) (?sideEffect = <http://bio2rdf.org/umls:C0238705>)) (?sideEffect =
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			<pre> <http://bio2rdf.org/umls:C0039231>)) && (xsd:float(?pvalue) < 0.0001)) . } </pre>
9	Evidence in Pubmed article for the association between a drug and MeSH term related to heart	<pre> SELECT DISTINCT ?label WHERE { (?arg1) :getDrugnameDrugBank1 (?dname) . SERVICE <http://cu.pubmed.bio2rdf.org/sparql> { ?article <http://bio2rdf.org/pubmed_vocabulary:chemical> ?chemical . ?chemical rdfs:label ?drugname . ?article <http://bio2rdf.org/pubmed_vocabulary:mesh_heading> ?heading . ?heading rdfs:label ?label . FILTER regex(?drugname, ?dname) . } . } </pre>	<pre> ASK WHERE { (?adrug) :RetrievePubmedArticleMeshTerms (?mesh) . FILTER (((((((((((((((((((((((xsd:string(?mesh) = "Tachycardia") (xsd:string(?mesh) = "Myocardial Ischemia")) (xsd:string(?mesh) = "Cardiotoxins")) (xsd:string(?mesh) = "Myocardial Infarction")) (xsd:string(?mesh) = "Atrial Fibrillation")) (xsd:string(?mesh) = "Myocardial Reperfusion Injury")) (xsd:string(?mesh) = "Tachycardia, Ventricular")) (xsd:string(?mesh) = "Cardiomegaly")) (xsd:string(?mesh) = "Pericardial Effusion")) (xsd:string(?mesh) = "Arrhythmias, Cardiac")) (xsd:string(?mesh) = "Cardiomyopathies")) (xsd:string(?mesh) = "Bradycardia")) (xsd:string(?mesh) = "Pericardial Effusion")) (xsd:string(?mesh) = "Cardiomyopathy, Dilated")) (xsd:string(?mesh) = "Myocarditis")) (xsd:string(?mesh) = "Pericarditis")) (xsd:string(?mesh) = "Death, Sudden, Cardiac")) (xsd:string(?mesh) = "Edema, Cardiac")) (xsd:string(?mesh) = "Tachycardia, Supraventricular")) (xsd:string(?mesh) = "Cardiac Output, Low")) (xsd:string(?mesh) = "Heart Failure")) (xsd:string(?mesh) = "Heart Failure, Systolic")) (xsd:string(?mesh) = "Heart Failure, Diastolic")) (xsd:string(?mesh) = "Hypertension")) (xsd:string(?mesh) = "Coronary thrombosis")) . } </pre>
10	Presence of article in Pubmed linking drug to cardiotoxicity	<pre> SELECT ?text WHERE { (?arg1) :getDrugnameDrugBank1 (?dname) . SERVICE <http://cu.pubmed.bio2rdf.org/sparql> { ?article <http://bio2rdf.org/pubmed_vocabulary:chemical> ?chemical . ?chemical rdfs:label ?drugname . ?article <http://purl.org/dc/terms/abstract> </pre>	<pre> ASK WHERE { (?adrug) :RetrievePubmedArticleAbstract (?abstract) . FILTER regex(?abstract, "cardiotoxic", "i") . } </pre>

		?pharmkgbid <http://bio2rdf.org/pharmgkb_vocabulary:xref> ?arg1 . ?pharmkgbid <http://bio2rdf.org/pharmgkb_vocabulary:xref> ?pccid . ?pccid rdfs:label ?drugname . SERVICE <http://cu.pubmed.bio2rdf.org/sparql> { ?article <http://bio2rdf.org/pubmed_vocabulary:chemical> ?chemical . ?chemical rdfs:label ?drugname . ?article <http://bio2rdf.org/pubmed_vocabulary:mesh_heading> ?heading . ?heading rdfs:label "Drug Interactions" . ?article <http://purl.org/dc/terms/abstract> ?abstract . ?abstract <http://bio2rdf.org/pubmed_vocabulary:abstract_text> ?text . } . } . }	(((((((?sideEffect = <http://bio2rdf.org/umls:C0018802>)) (?sideEffect = <http://bio2rdf.org/umls:C0151878>)) (?sideEffect = <http://bio2rdf.org/umls:C0428772>)) (?sideEffect = <http://bio2rdf.org/umls:C0242698>)) (?sideEffect = <http://bio2rdf.org/umls:C0948089>)) (?sideEffect = <http://bio2rdf.org/umls:C0027051>)) (?sideEffect = <http://bio2rdf.org/umls:C0151744>)) (?sideEffect = <http://bio2rdf.org/umls:C0031039>)) (?sideEffect = <http://bio2rdf.org/umls:C0003811>)) (?sideEffect = <http://bio2rdf.org/umls:C0031046>)) (?sideEffect = <http://bio2rdf.org/umls:C0878544>)) (?sideEffect = <http://bio2rdf.org/umls:C0018801>)) (?sideEffect = <http://bio2rdf.org/umls:C0018800>)) (?sideEffect = <http://bio2rdf.org/umls:C0018799>)) (?sideEffect = <http://bio2rdf.org/umls:C0232197>)) (?sideEffect = <http://bio2rdf.org/umls:C0023212>)) (?sideEffect = <http://bio2rdf.org/umls:C1383860>)) (?sideEffect = <http://bio2rdf.org/umls:C0264714>)) (?sideEffect = <http://bio2rdf.org/umls:C0520863>)) (?sideEffect = <http://bio2rdf.org/umls:C0018808>)) (?sideEffect = <http://bio2rdf.org/umls:C0242973>)) (?sideEffect = <http://bio2rdf.org/umls:C0007177>)) (?sideEffect = <http://bio2rdf.org/umls:C0039240>)) (?sideEffect = <http://bio2rdf.org/umls:C0155652>)) (?sideEffect = <http://bio2rdf.org/umls:C0428977>)) (?sideEffect = <http://bio2rdf.org/umls:C0859934>)) (?sideEffect = <http://bio2rdf.org/umls:C0741921>)) (?sideEffect = <http://bio2rdf.org/umls:C0007166>)) (?sideEffect =
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			<http://bio2rdf.org/umls:C0036974>)) (?sideEffect = <http://bio2rdf.org/umls:C1444565>)) (?sideEffect = <http://bio2rdf.org/umls:C0854612>)) (?sideEffect = <http://bio2rdf.org/umls:C0852940>)) (?sideEffect = <http://bio2rdf.org/umls:C1141959>)) (?sideEffect = <http://bio2rdf.org/umls:C1167732>)) (?sideEffect = <http://bio2rdf.org/umls:C0340324>)) (?sideEffect = <http://bio2rdf.org/umls:C0160318>)) (?sideEffect = <http://bio2rdf.org/umls:C0085298>)) (?sideEffect = <http://bio2rdf.org/umls:C0010054>)) (?sideEffect = <http://bio2rdf.org/umls:C0264733>)) (?sideEffect = <http://bio2rdf.org/umls:C0919857>)) (?sideEffect = <http://bio2rdf.org/umls:C0042510>)) (?sideEffect = <http://bio2rdf.org/umls:C0520870>)) (?sideEffect = <http://bio2rdf.org/umls:C0877038>)) (?sideEffect = <http://bio2rdf.org/umls:C0600125>)) (?sideEffect = <http://bio2rdf.org/umls:C0877658>)) (?sideEffect = <http://bio2rdf.org/umls:C0520887>)) (?sideEffect = <http://bio2rdf.org/umls:C0877452>)) (?sideEffect = <http://bio2rdf.org/umls:C0520888>)) (?sideEffect = <http://bio2rdf.org/umls:C0151517>)) (?sideEffect = <http://bio2rdf.org/umls:C1328381>)) (?sideEffect = <http://bio2rdf.org/umls:C0039239>)) (?sideEffect = <http://bio2rdf.org/umls:C0340517>)) (?sideEffect = <http://bio2rdf.org/umls:C1536093>)) (?sideEffect = <http://bio2rdf.org/umls:C0344720>)) (?sideEffect = <http://bio2rdf.org/umls:C0238705>)) (?sideEffect = <http://bio2rdf.org/umls:C0039231>)) && (xsd:float(?pvalue) < 0.0001)) . }
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			ASK WHERE { (?adrug) :RetrieveDDIPubmedArticleAbstract (?abstract) . FILTER regex(?abstract, "cardiotoxic", "i") . }
12	Drug acts on a pathway related to cardiotoxicity.	SELECT ?pathway WHERE { SERVICE <http://134.117.108.187:8890/sparql> { ?arg1 a <http://bio2rdf.org/cardiotox_vocabulary:Drug> . ?arg1 <http://bio2rdf.org/cardiotox_vocabulary:x-mesh> ?meshID . } SERVICE <http://ctd.bio2rdf.org/sparql> { ?pathway_assoc <http://bio2rdf.org/ctd_vocabulary:pathway> ?pathway . ?pathway_assoc <http://bio2rdf.org/ctd_vocabulary:chemical> ?meshID . ?pathway_assoc <http://bio2rdf.org/ctd_vocabulary:p-value> ?pval . } }	ASK WHERE { (?drug) :getPathwayInCTD (?pathway ?pvalue) . FILTER ((((((?pathway = <http://bio2rdf.org/kegg:04150>) <http://bio2rdf.org/kegg:04010>) <http://bio2rdf.org/kegg:04012>) <http://bio2rdf.org/kegg:04141>) <http://bio2rdf.org/kegg:04370>) <http://bio2rdf.org/kegg:04630>) && (xsd:float(?pvalue) < 0.00000000001)) . }
13	Drug acts on a pathway related to cardiotoxicity.	SELECT ?pathway WHERE { SERVICE <http://drugbank.bio2rdf.org/sparql> { ?arg1 <http://bio2rdf.org/drugbank_vocabulary:x-pharmgkb> ?Pharm_ID . } SERVICE <http://cu.pharmgkb.bio2rdf.org/sparql> { ?pathway a <http://bio2rdf.org/pharmgkb_vocabulary:Pathway> . ?pathway <http://bio2rdf.org/pharmgkb_vocabulary:chemical> ?Pharm_ID . } }	ASK WHERE { (?drug) :getPathwayInPharmGKB (?pathway) . FILTER ((((((?pathway = <http://bio2rdf.org/pharmgkb:PA164714140>) <http://bio2rdf.org/pharmgkb:PA164713452>) <http://bio2rdf.org/pharmgkb:PA164713667>) <http://bio2rdf.org/pharmgkb:PA2032>) <http://bio2rdf.org/pharmgkb:PA164713529>) <http://bio2rdf.org/pharmgkb:PA2032>) . }
	Mouse model for	SELECT DISTINCT ?phenotype	ASK WHERE {

		<pre> ary:hasCardiotoxicEffect> ?effects . ?effects <http://bio2rdf.org/cardiotox_vocabul ary:hasArticle> ?effect_article . } . } </pre>	
16	Drug has cardiotoxic targets in the database	<pre> SELECT ?target ?target_article WHERE { SERVICE <http://134.117.108.187:8890/sparql> { ?arg1 a <http://bio2rdf.org/cardiotox_vocabul ary:Drug> . ?arg1 <http://bio2rdf.org/cardiotox_vocabul ary:hasTarget> ?target . ?target <http://bio2rdf.org/cardiotox_vocabul ary:hasArticle> ?target_article . } . } </pre>	<pre> ASK WHERE { (?drug) :getTargetsfromDB (?target) . FILTER bound(?target) . } </pre>
17	Drug has clinical observations linked to cardiotoxicity in the database	<pre> SELECT ?observation ?observation_type ?observation_article WHERE { SERVICE <http://134.117.108.187:8890/sparql> { ?arg1 a <http://bio2rdf.org/cardiotox_vocabul ary:Drug> . ?arg1 <http://bio2rdf.org/cardiotox_vocabul ary:hasObservation> ?observation . ?observation <http://bio2rdf.org/cardiotox_vocabul ary:hasMeasurement> ?observation_type . ?observation <http://bio2rdf.org/cardiotox_vocabul ary:hasArticle> ?observation_article . } . } </pre>	<pre> ASK WHERE { (?drug) :getObservationfromDB (?observation) . FILTER bound(?observation) . } </pre>
18	Drug has identified off targets suspected to play a role in cardiotoxicity in the database	<pre> SELECT ?Evidence ?Observ ?Article ?OffTarget ?DrugAction WHERE { SERVICE <http://134.117.108.187:8890/sparql> { ?arg1 a <http://bio2rdf.org/cardiotox_vocabul ary:Drug> . </pre>	<pre> ASK WHERE { (?drug) :getEvidenceEffectOffTargetArticlefro mDB (?Evidence) . FILTER (?Evidence = <http://semanticscience.org/resource/ SIO_001210>) . } </pre>

		<pre> ?arg1 <http://bio2rdf.org/cardiotox_vocabulary:hasObservedEffectOnOffTarget> ?Observ . ?Observ <http://bio2rdf.org/cardiotox_vocabulary:hasEvidenceOfCardiotoxicity> ?Evidence . ?Observ <http://bio2rdf.org/cardiotox_vocabulary:hasArticle> ?Article . ?Observ <http://bio2rdf.org/cardiotox_vocabulary:hasOffTarget> ?OffTarget . ?Observ <http://bio2rdf.org/cardiotox_vocabulary:DrugActionOnOffTarget> ?DrugAction . } . } </pre>	
19	Drug has an identified off target contributing to a cardioprotective effect in the database	<pre> SELECT ?Evidence ?Observ ?Article ?OffTarget ?DrugAction WHERE { SERVICE <http://134.117.108.187:8890/sparql> { ?arg1 a <http://bio2rdf.org/cardiotox_vocabulary:Drug> . ?arg1 <http://bio2rdf.org/cardiotox_vocabulary:hasObservedEffectOnOffTarget> ?Observ . ?Observ <http://bio2rdf.org/cardiotox_vocabulary:hasEvidenceOfCardiotoxicity> ?Evidence . ?Observ <http://bio2rdf.org/cardiotox_vocabulary:hasArticle> ?Article . ?Observ <http://bio2rdf.org/cardiotox_vocabulary:hasOffTarget> ?OffTarget . ?Observ <http://bio2rdf.org/cardiotox_vocabulary:DrugActionOnOffTarget> ?DrugAction . } . } </pre>	<pre> ASK WHERE { (?drug) :getEvidenceEffectOffTargetArticlefromDB (?Evidence) . FILTER (?Evidence = <http://semanticscience.org/resource/SIO_001211>) . } </pre>
20	Drug has clinical trial.	<pre> SELECT DISTINCT ?trial ?condition WHERE { (?arg1) :getDrugnameDrugBank (?d) . SERVICE </pre>	<pre> ASK WHERE { (?drug) :getBasicClinicalTrial (?trial ?condition ?t_title) . FILTER (((((((((((((((((((((((str(?condition) = </pre>

		<pre> <http://clinicaltrials.bio2rdf.org/sparql> { ?trial a <http://bio2rdf.org/clinicaltrials_vocabulary:Clinical-Study> . ?trial <http://bio2rdf.org/clinicaltrials_vocabulary:condition-mesh> ?c . ?trial <http://bio2rdf.org/clinicaltrials_vocabulary:intervention> ?int . ?int <http://purl.org/dc/terms/title> ?intervention . ?c <http://purl.org/dc/terms/title> ?condition . FILTER CONTAINS(str(?d), str(?intervention)) . } </pre>	<pre> "Myocardial Ischemia") (str(?condition) = "Myocardial Infarction") (str(?condition) = "Myocardial Reperfusion Injury") (str(?condition) = "Tachycardia, Ventricular") (str(?condition) = "Cardiomegaly") (str(?condition) = "Cardiomyopathy, Hypertrophic") (str(?condition) = "Arrhythmias, Cardiac") (str(?condition) = "Cardiomyopathies") (str(?condition) = "Pericardial Effusion") (str(?condition) = "Bradycardia") (str(?condition) = "Tachycardia") (str(?condition) = "Cardiomyopathy, Dilated") (str(?condition) = "Myocarditis") (str(?condition) = "Pericarditis") (str(?condition) = "Death, Sudden, Cardiac") (str(?condition) = "Edema, Cardiac") (str(?condition) = "Tachycardia, Supraventricular") (str(?condition) = "Cardiac Output, Low") (str(?condition) = "Heart Failure") (str(?condition) = "Heart Failure, Systolic") (str(?condition) = "Heart Failure, Diastolic") (str(?condition) = "Hypertension") (str(?condition) = "Coronary thrombosis") (str(?condition) = "Atrial Fibrillation") . } </pre>
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