PAConto - RDF representation of PACDB data and Ontology of Infectious Diseases known to be related to Glycan Binding

Namespaces

The following RDF namespaces and prefixes will be used in the documentation.

Prefix	URI
rdf	http://www.w3.org/1999/02/22-rdf-syntax-ns#
paconto	http://jcggdb.jp/rdf/diseases/paconto#
prism	http://prismstandard.org/namespaces/basic/2.0/
rdfs	http://www.w3.org/2000/01/rdf-schema#
uniprot	http://purl.uniprot.org/core/
ggdsch	http://jcggdb.jp/rdf/diseases/ggdonto-schema#
glycan	http://purl.jp/bio/12/glyco/glycan#
dct	http://purl.org/dc/terms/
gdgsch	http://jcggdb.jp/rdf/diseases/gdgdb-schema#

gmsch	http://jcggdb.jp/rdf/diseases/gmncbi-schema#
owl	http://www.w3.org/2002/07/owl#
pav	http://purl.org/pav/
skos	http://www.w3.org/2004/02/skos/core#
bibo	http://purl.org/ontology/bibo/
pacsch	http://jcggdb.jp/rdf/diseases/paconto-schema#

pacsch:Microorganism

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#Microorganism

Superclass: owl:Thing

pacsch:OrganismForm

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#OrganismForm

Superclass: owl:Thing

Tropism in Reference

Tissue/cell tropism of microorganisms reported in PubMed references

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#TropismInReference

Superclass: pacsch:Microorganisms

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:describedInReference	pacsch:ReferencesPACDB		References in which some scientific facts are reported
pacsch:hasTropismTo	pacsch:TargetTissuesAndCells		For description data about tissue/cell to which microorganism has tropism

PACDB Diseases

For describing information about diseases from PACDB

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#DiseasesPACDB

Superclass: http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#Diseases_and_Disorders

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:broaderInDisClassifAnimal	pacsch:DiseasesPACDB		Broader disease in classification of animal infectious diseases
pacsch:broaderInDisClassifPathogens	pacsch:DiseasesPACDB		Broader disease in classification of infectious diseases by pathogens
pacsch:broaderInDisClassifSystems	pacsch:DiseasesPACDB		Broader disease in classification of infectious diseases by organ systems

pacsch:diseaseClass	http://www.w3.org/2001/XMLSchema#string		Diseases classes used for classification of diseases
pacsch:diseasesClassificationAnimal	pacsch:DiseasesPACDB		Property for diseases included in classification of animal infectious diseases
pacsch:diseasesClassificationPathogens	pacsch:DiseasesPACDB		Property for diseases included in classification of infectious diseases by pathogens
pacsch:diseasesClassificationSystems	pacsch:DiseasesPACDB		Property for diseases included in classification of infectious diseases by organ systems
pacsch:inDiseasesClassification	pacsch:DiseasesClassificationsMeSH		For description data about diseases classification in which disease is included

Classifications of Diseases using MeSH

For describing classifications of diseases using MeSH (Medical Subject Headings) vocabulary

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#DiseasesClassificationsMeSH

Superclass: uniprot:Annotation, http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#Diseases_and_Disorders

Instances:

URI	Label	Description
pacsch:DiseasesClassificationSystems	Classification of Diseases by Systems	Classification of infectious diseases by organ systems using MeSH vocabulary
pacsch:DiseasesClassificationPathogens	Classification of Diseases by Pathogens	Classification of infectious diseases by pathogens using MeSH vocabulary
pacsch:DiseasesClassificationAnimal	Classification of Animal Infectious Diseases	Classification of animal infectious diseases using MeSH vocabulary

Semantic Relations in PAConto

For describing information about semantic relations between concepts in PAConto

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#SemanticRelationsPAConto

Superclass: owl:ObjectProperty

Instances:

URI	Label	Description
pacsch:broaderInDisClassifSystems	Broader Disease in Classification of Diseases by Systems	Broader disease in classification of infectious diseases by organ systems
pacsch:broaderInDisClassifPathogens	Broader Disease in Classification of Diseases by Pathogens	Broader disease in classification of infectious diseases by pathogens

pacsch:broaderInDisClassifAnimal	Broader Disease in Classification of Animal Infectious Diseases	Broader disease in classification of animal infectious diseases

Connection to Diseases Classifications

For describing information about semantic relations between disease concepts and concepts in Diseases Classifications

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#ConnectionToDiseasesClassif

Superclass: pacsch:SemanticRelationsPAConto

Instances:

URI	Label	Description
pacsch:diseasesClassificationSystems	Property for Classification of Diseases by Systems	Property for diseases included in classification of infectious diseases by organ systems
pacsch:diseasesClassificationPathogens	Property for Classification of Diseases by Pathogens	Property for diseases included in classification of infectious diseases by pathogens
pacsch:diseasesClassificationAnimal	Property for Classification of Animal Infectious Diseases	Property for diseases included in classification of animal infectious diseases

Target Tissues and Cells

For describing information about target tissues and cells in hosts

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#TargetTissuesAndCells

Superclass: uniprot:Tissue, glycan:source_natural

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:bioSourceName	http://www.w3.org/2001/XMLSchema#string		Names of sources from target organism
pacsch:targetClassification	pacsch:TargetTissuesAndCells		Property that specify concept from classification of target sources in host-pathogen interactions

PACDB Glycans

For describing information about glycan ligands (carbohydrate ligands) in host and glycans as pathogen adhesins that are recorded in PACDB

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#GlycansPACDB

Superclass: glycan:saccharide, glycan:glycoconjugate

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:affinityInReference	pacsch:AffinityInReference		For description data about affinity of glycans to microbial lectins reported in PubMed references

pacsch:carbohydrateLigandName	http://www.w3.org/2001/XMLSchema#string		Names of carbohydrate ligands
pacsch:glycanType			For description types of glycans
pacsch:hasStructuralDetail	pacsch:LigandsStructuralFeatures		For description data about structural details of carbohydrate ligands
pacsch:hasStructuralFeature	pacsch:LigandsStructuralFeatures		For description data about structural features of carbohydrate ligands
pacsch:hasStructuralPartName	pacsch:StructuralPartNames		For describing names of structural parts of carbohydrate ligands, such as monosaccharides
pacsch:isSameAsMonosaccharide	glycan:monosaccharide		For specifying RDF resource describing this monosaccharide (usually MonosaccharideDB)
pacsch:jcggdbGlycanId	http://www.w3.org/2001/XMLSchema#string		Glycan ID used in JCGGDB (Japan Consortium for Glycobiology and Glycotechnology database)
pacsch:jcggdbMotifId	http://www.w3.org/2001/XMLSchema#string		Motif ID used in JCGGDB (Japan Consortium for Glycobiology and Glycotechnology database)

Pathogen Glycans

Glycans as pathogen adhesins

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#PathogenGlycans

Superclass: pacsch:GlycansPACDB

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:interactionInReference	pacsch:InteractionInReference		For description data about protein-glycan interactions reported in PubMed references
pacsch:occurInOrganismInReference	pacsch:OccurInOrganismInReference		For description data about occurrence of microbial lectins in microorganisms reported in PubMed references
pacsch:pathogenAdherMolecGenomicName	http://www.w3.org/2001/XMLSchema#string		Genomic names for pathogen adherence molecules
pacsch:pathogenAdherMolecName	http://www.w3.org/2001/XMLSchema#string		Names of pathogen adherence molecules
pacsch:pathogenAdherMolecType	http://www.w3.org/2001/XMLSchema#string		Types of pathogen adherence molecules: Protein or Glycan
pacsch:strainName	http://www.w3.org/2001/XMLSchema#string		The names of microorganisms strains

Interaction in Reference

Interaction of microbial lectins or glycans with host glycan ligands reported in PubMed references

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#InteractionInReference

Superclass: pacsch:PathogenGlycans, pacsch:MicrobialGlycanBindingProteins

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:adherenceInteractionType	http://www.w3.org/2001/XMLSchema#string		Types of adherence interactions between pathogen and host: Protein-Glycan Interaction or Glycan-Glycan Interaction
pacsch:describedInReference	pacsch:ReferencesPACDB		References in which some scientific facts are reported
pacsch:hasInteractionWith	pacsch:GlycansPACDB		For description data about glycan ligand with which microbial lectin has interaction
pacsch:inBioSource	pacsch:TargetTissuesAndCells		For description data about tissues/cells in which glycans are present
pacsch:interactionType	http://www.w3.org/2001/XMLSchema#string		Types of interactions between microbial lectins or glycans and host glycans: Binding or Not Binding

Occurrence in Organism in Reference

Occurrence of microbial lectins or glycans in microorganism reported in PubMed references

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#OccurInOrganismInReference

Superclass: pacsch:PathogenGlycans, pacsch:MicrobialGlycanBindingProteins

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:describedInReference	pacsch:ReferencesPACDB		References in which some scientific facts are reported

Affinity in Reference

Affinity of host glycans to microbial lectins or glycans reported in PubMed references

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#AffinityInReference

Superclass: pacsch:GlycansPACDB

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:adherenceInteractionType	http://www.w3.org/2001/XMLSchema#string		Types of adherence interactions between pathogen and host: Protein-Glycan Interaction or Glycan-Glycan Interaction
pacsch:describedInReference	pacsch:ReferencesPACDB		References in which some scientific facts are reported
pacsch:inBioSource	pacsch:TargetTissuesAndCells		For description data about tissues/cells in which glycans are present

pacsch:interactionType	http://www.w3.org/2001/XMLSchema#string		Types of interactions between microbial lectins or glycans and host glycans: Binding or Not Binding

Carbohydrate Ligands Structural Features

For describing information about structural features (characteristics) and structural parts of carbohydrate ligands; the individuals of this class are features (characteristics) or substructures of glycans or glycoconjugates

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#LigandsStructuralFeatures

Superclass: glycan:component

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:broaderStructuralFeature	pacsch:LigandsStructuralFeatures		For description broader relationship between two instances of #LigandsStructuralFeatures class
pacsch:hasStructuralPartName	pacsch:StructuralPartNames		For describing names of structural parts of carbohydrate ligands, such as monosaccharides
pacsch:structuralDetail	http://www.w3.org/2001/XMLSchema#string		Structural details of carbohydrate ligands
pacsch:structuralFeature	http://www.w3.org/2001/XMLSchema#string		Structural features of carbohydrate ligands

Ligands Structural Part Names

For describing names of structural part of carbohydrate ligands

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#StructuralPartNames

Superclass: owl:Thing

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:hasNotationScheme	glycan:monosaccharide_notation_scheme		For specifying monosaccharide notation scheme
pacsch:isPreferredName	http://www.w3.org/2001/XMLSchema#boolean		It is true if the name is from CarbBank monosaccharide Notation Scheme. It is false if the name is from MonosaccharideDB or IUPAC monosaccharide Notation Schemes.

Glyco Epitopes in PACDB

For describing information about glyco-epitopes recorded as carbohydrate ligands in PACDB

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#GlycoEpitopesPACDB

Superclass: glycan:glycan_epitope

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:epitopeID	http://www.w3.org/2001/XMLSchema#string		Epitope ID in GlycoEpitope Database
pacsch:epitopeName	http://www.w3.org/2001/XMLSchema#string		Epitope name in GlycoEpitope Database

Microbial Glycan-Binding Proteins

For describing information about microbial glycan-binding proteins: lectins and glycosaminoglycan-binding proteins

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#MicrobialGlycanBindingProteins

Superclass: glycan:glycan_binder

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:interactionInReference	pacsch:InteractionInReference		For description data about protein-glycan interactions reported in PubMed references
pacsch:occurInOrganismInReference	pacsch:OccurInOrganismInReference		For description data about occurrence of microbial lectins in microorganisms reported in PubMed references
pacsch:pathogenAdherMolecForm	pacsch:MicrobialGlycanBindingProteins		Structural and functional forms of

			pathogen adherence molecules
pacsch:pathogenAdherMolecGenomicName	http://www.w3.org/2001/XMLSchema#string		Genomic names for pathogen adherence molecules
pacsch:pathogenAdherMolecName	http://www.w3.org/2001/XMLSchema#string		Names of pathogen adherence molecules
pacsch:pathogenAdherMolecType	http://www.w3.org/2001/XMLSchema#string		Types of pathogen adherence molecules: Protein or Glycan
pacsch:strainName	http://www.w3.org/2001/XMLSchema#string		The names of microorganisms strains

Interaction in Reference

Interaction of microbial lectins or glycans with host glycan ligands reported in PubMed references

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#InteractionInReference

Superclass: pacsch:PathogenGlycans, pacsch:MicrobialGlycanBindingProteins

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:adherenceInteractionType	http://www.w3.org/2001/XMLSchema#string		Types of adherence interactions between pathogen and host: Protein-Glycan Interaction or Glycan-Glycan Interaction

pacsch:describedInReference	pacsch:ReferencesPACDB		References in which some scientific facts are reported
pacsch:hasInteractionWith	pacsch:GlycansPACDB		For description data about glycan ligand with which microbial lectin has interaction
pacsch:inBioSource	pacsch:TargetTissuesAndCells		For description data about tissues/cells in which glycans are present
pacsch:interactionType	http://www.w3.org/2001/XMLSchema#string		Types of interactions between microbial lectins or glycans and host glycans: Binding or Not Binding

Occurrence in Organism in Reference

Occurrence of microbial lectins or glycans in microorganism reported in PubMed references

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#OccurInOrganismInReference

Superclass: pacsch:PathogenGlycans, pacsch:MicrobialGlycanBindingProteins

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:describedInReference	pacsch:ReferencesPACDB		References in which some scientific facts are reported

Interacting Ability in Reference

Interacting ability of microbial lectins or glycans with host glycan ligands reported in PubMed references

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#InteractingAbilityInReference

Superclass: owl:Thing

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:adherenceInteractionType	http://www.w3.org/2001/XMLSchema#string		Types of adherence interactions between pathogen and host: Protein-Glycan Interaction or Glycan-Glycan Interaction
pacsch:describedInReference	pacsch:ReferencesPACDB		References in which some scientific facts are reported
pacsch:inBioSource	pacsch:TargetTissuesAndCells		For description data about tissues/cells in which glycans are present
pacsch:interactingMolecule			Molecules that interact with each other
pacsch:interactionType	http://www.w3.org/2001/XMLSchema#string		Types of interactions between microbial lectins or glycans and host glycans: Binding or Not Binding

PACDB References

For describing information about references that were used in creation of PACDB.

URI: http://jcggdb.jp/rdf/diseases/paconto-schema#ReferencesPACDB

Superclass: bibo:Article, glycan:citation

Predicates that have this class as domain:

Predicate	Range	Functional	Description
pacsch:articleInfo	http://www.w3.org/2001/XMLSchema#string		Information about article
pacsch:articleTitle	http://www.w3.org/2001/XMLSchema#string		Title of Article
pacsch:journalTitle	http://www.w3.org/2001/XMLSchema#string		Title of Journal
pacsch:journalTitleIso	http://www.w3.org/2001/XMLSchema#string		Journal Title ISO abbreviation
pacsch:pacdbRefId	http://www.w3.org/2001/XMLSchema#string		Reference Id used in PACDB

Concept Type

For describing types of concepts

URI: http://jcggdb.jp/rdf/diseases/ggdonto-schema#ConceptType

Superclass: owl:Thing

Instances:

URI	Label	Description
pacsch:GlycansTypes	Glycans Types	Types of Carbohydrates and Glycoconjugates recorded in PACDB
pacsch:PathogenicMicroorganisms	Pathogenic Microorganisms	
pacsch:DiseasesNameAndClass	Diseases Name and Class	
pacsch:GlycanLigands	Glycan Ligands	Glycan ligands on host cells
pacsch:DiseasesClassifications	Classifications of Diseases	Classifications of infectious diseases recorded in PACDB by using MeSH (Medical Subject Headings) vocabulary
pacsch:MicrobialGlycanBindingProteinForms	Microbial Glycan-Binding Protein Forms	For Classification of Microbial Glycan-Binding Proteins
pacsch:TargetsClassificationNCIT	Classification of targets in host-pathogen interactions based on the NCIT, with adaptations to PACDB data.	Classifications of target sources in host-pathogen interactions based on the National Cancer Institute Thesaurus (NCIT), with adaptations to PACDB data
pacsch:SourcesInHost	Sources in Host	
pacsch:ReferencesData	References Data	
pacsch:PathogenAdherenceMolecules	Pathogen Adherence Molecules	Adherence molecules of pathogenic microorganism: lectins or glycans