

Roles (restriction relationships) declared in the NCI Thesaurus, as of November 15, 2012		
Role Name	Domain	Range
Allele Absent From Wild-type Chromosomal Location	Gene	Anatomic Structure System or Substance
Allele Has Abnormality	Gene	Molecular Abnormality
Allele Has Activity	Gene	Properties or Attributes
Allele In Chromosomal Location	Gene	Anatomic Structure System or Substance
Allele Plays Altered Role In Process	Gene	Biological Process
Allele Plays Role In Metabolism Of Chemical Or Drug	Gene	Drugs and Chemicals
Anatomic Structure Has Location	Anatomic Structure System or Substance	Anatomic Structure System or Substance
Anatomic Structure Is Physical Part Of	Anatomic Structure System or Substance	Anatomic Structure System or Substance
Biological Process Has Associated Location	Biological Process	Anatomic Structure System or Substance
Biological Process Has Initiator Chemical Or Drug	Biological Process	Drugs and Chemicals
Biological Process Has Initiator Process	Biological Process	Biological Process
Biological Process Has Result Anatomy	Biological Process	Anatomic Structure System or Substance
Biological Process Has Result Biological Process	Biological Process	Biological Process
Biological Process Has Result Chemical Or Drug	Biological Process	Drugs and Chemicals
Biological Process Is Part Of Process	Biological Process	Biological Process
Chemical Or Drug Affects Abnormal Cell	Drugs and Chemicals	Abnormal Cell
Chemical Or Drug Affects Cell Type Or Tissue	Drugs and Chemicals	Anatomic Structure System or Substance
Chemical Or Drug Affects Gene Product	Drugs and Chemicals	Gene Product
Chemical Or Drug Has Mechanism Of Action	Drugs and Chemicals	Biological Process
Chemical Or Drug Has Physiologic Effect	Drugs and Chemicals	Biological Process
Chemical Or Drug Is Metabolized By Enzyme	Drugs and Chemicals	Gene Product
Chemical Or Drug Plays Role In Biological Process	Drugs and Chemicals	Biological Process
Chemotherapy Regimen Has Component	Chemotherapy Regimen	Drugs and Chemicals
Conceptual Part Of	Conceptual Entities	Conceptual Entities
Cytogenetic Abnormality Involves Chromosome	Chromosomal Aberration	Chromosome
Disease Excludes Abnormal Cell	Diseases Disorders and Findings	Abnormal Cell
Disease Excludes Cytogenetic Abnormality	Diseases Disorders and Findings	Molecular Abnormality
Disease Excludes Finding	Diseases Disorders and Findings	Diseases Disorders and Findings
Disease Excludes Metastatic Anatomic Site	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Excludes Molecular Abnormality	Diseases Disorders and Findings	Molecular Abnormality
Disease Excludes Normal Cell Origin	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Excludes Normal Tissue Origin	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Excludes Primary Anatomic Site	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Has Abnormal Cell	Diseases Disorders and Findings	Abnormal Cell
Disease Has Associated Anatomic Site	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Has Associated Disease	Diseases Disorders and Findings	Diseases Disorders and Findings
Disease Has Cytogenetic Abnormality	Diseases Disorders and Findings	Molecular Abnormality
Disease Has Finding	Diseases Disorders and Findings	Diseases Disorders and Findings
Disease Has Metastatic Anatomic Site	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Has Molecular Abnormality	Diseases Disorders and Findings	Molecular Abnormality
Disease Has Normal Cell Origin	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Has Normal Tissue Origin	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Has Primary Anatomic Site	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease Is Grade	Diseases Disorders and Findings	Properties or Attributes
Disease Is Stage	Diseases Disorders and Findings	Properties or Attributes
Disease Mapped To Chromosome	Diseases Disorders and Findings	Chromosome
Disease Mapped To Gene	Diseases Disorders and Findings	Gene
Disease May Have Abnormal Cell	Diseases Disorders and Findings	Abnormal Cell

Disease May Have Associated Disease	Diseases Disorders and Findings	Diseases Disorders and Findings
Disease May Have Cytogenetic Abnormality	Diseases Disorders and Findings	Molecular Abnormality
Disease May Have Finding	Diseases Disorders and Findings	Diseases Disorders and Findings
Disease May Have Molecular Abnormality	Diseases Disorders and Findings	Molecular Abnormality
Disease May Have Normal Cell Origin	Diseases Disorders and Findings	Anatomic Structure System or Substance
Disease May Have Normal Tissue Origin	Diseases Disorders and Findings	Anatomic Structure System or Substance
EO Disease Has Associated Cell Type	Experimental Organism Diagnoses	Experimental Organism Anatomical Concepts
EO Disease Has Associated EO Anatomy	Experimental Organism Diagnoses	Experimental Organism Anatomical Concepts
EO Disease Has Property Or Attribute	Experimental Organism Diagnoses	Properties or Attributes
EO Disease Maps To Human Disease	Experimental Organism Diagnoses	Diseases Disorders and Findings
Gene Associated With Disease	Gene	Diseases Disorders and Findings
Gene Found In Organism	Gene	Organisms
Gene Has Abnormality	Gene	Molecular Abnormality
Gene Has Physical Location	Gene	Anatomic Structure System or Substance
Gene In Chromosomal Location	Gene	Anatomic Structure System or Substance
Gene Involved In Pathogenesis Of Disease	Gene	Diseases and Disorders
Gene Is Biomarker Of	Gene	Diseases Disorders and Findings
Gene Is Biomarker Type	Gene	Diagnostic or Prognostic Factor
Gene Is Element In Pathway	Gene	Biochemical Pathway
Gene Mutant Encodes Gene Product Sequence Variation	Gene Mutant	Gene Product Sequence Variation
Gene Plays Role In Process	Gene	Biological Process
Gene Product Encoded By Gene	Gene Product	Gene
Gene Product Expressed In Tissue	Gene Product	Anatomic Structure System or Substance
Gene Product Has Abnormality	Gene Product	Molecular Abnormality
Gene Product Has Associated Anatomy	Gene Product	Anatomic Structure System or Substance
Gene Product Has Biochemical Function	Gene Product	Gene Product
Gene Product Has Chemical Classification	Gene Product	Gene Product
Gene Product Has Organism Source	Gene Product	Organisms
Gene Product Has Structural Domain Or Motif	Gene Product	Anatomic Structure System or Substance
Gene Product Is Biomarker Of	Gene Product	Diseases Disorders and Findings
Gene Product Is Biomarker Type	Gene Product	Diagnostic or Prognostic Factor
Gene Product Is Element In Pathway	Gene Product	Biochemical Pathway
Gene Product Is Physical Part Of	Gene Product	Gene Product
Gene Product Malfunction Associated With Disease	Gene Product	Diseases Disorders and Findings
Gene Product Plays Role In Biological Process	Gene Product	Biological Process
Gene Product Sequence Variation Encoded By Gene Mutant	Gene Product Sequence Variation	Gene Mutant
Molecular Abnormality Involves Gene	Molecular Abnormality	Gene
Procedure Has Completely Excised Anatomy	Activity	Anatomic Structure System or Substance
Procedure Has Excised Anatomy	Activity	Anatomic Structure System or Substance
Procedure Has Imaged Anatomy	Activity	Anatomic Structure System or Substance
Procedure Has Partially Excised Anatomy	Activity	Anatomic Structure System or Substance
Procedure Has Target Anatomy	Activity	Anatomic Structure System or Substance
Procedure Has Target Disease	Activity	Diseases Disorders and Findings
Procedure May Have Completely Excised Anatomy	Activity	Anatomic Structure System or Substance
Procedure May Have Excised Anatomy	Activity	Anatomic Structure System or Substance
Procedure May Have Partially Excised Anatomy	Activity	Anatomic Structure System or Substance
Procedure Uses Manufactured Object	Activity	Manufactured Object
Regimen Has Accepted Use For Disease	Chemotherapy Regimen	Diseases Disorders and Findings