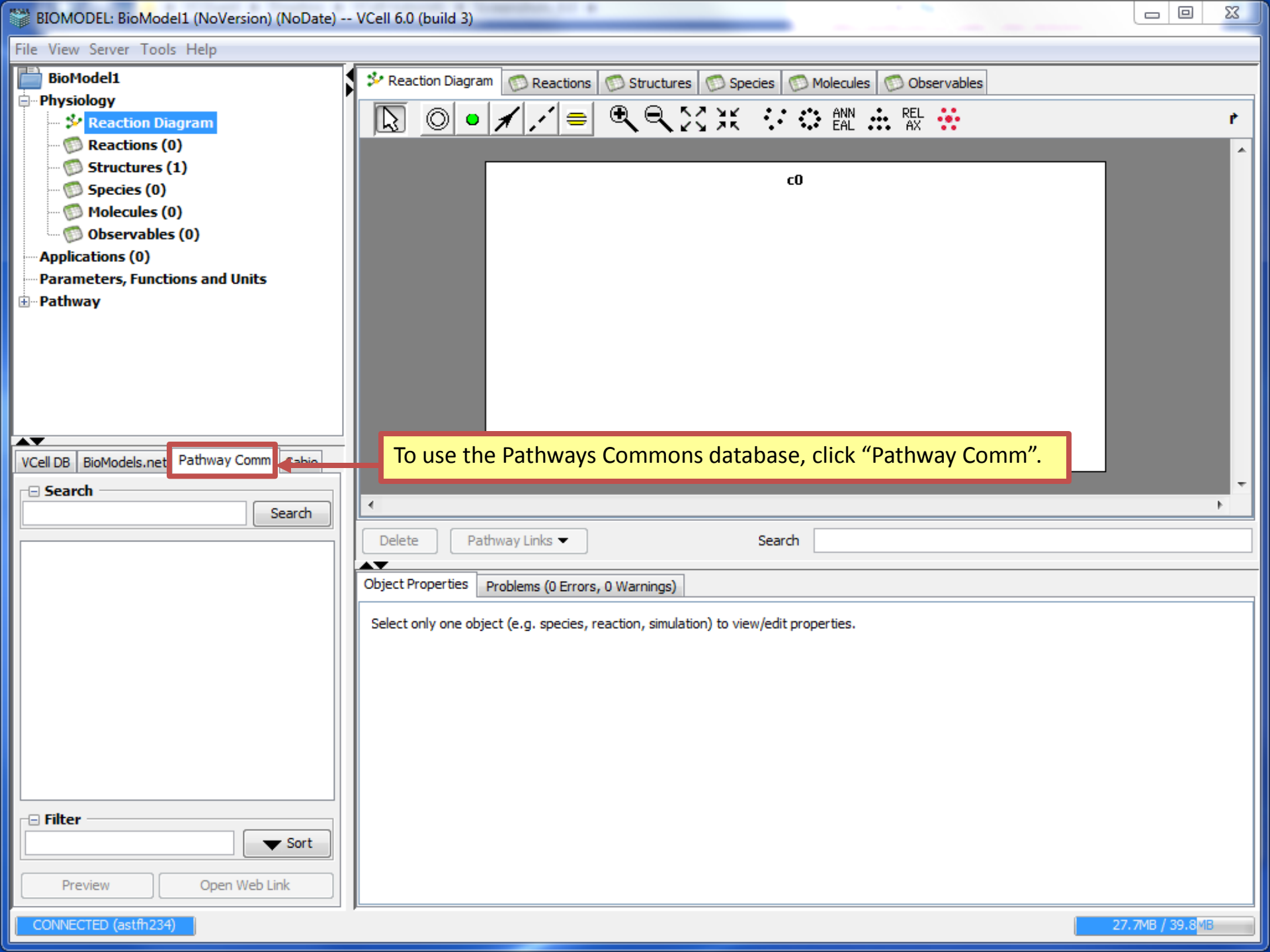
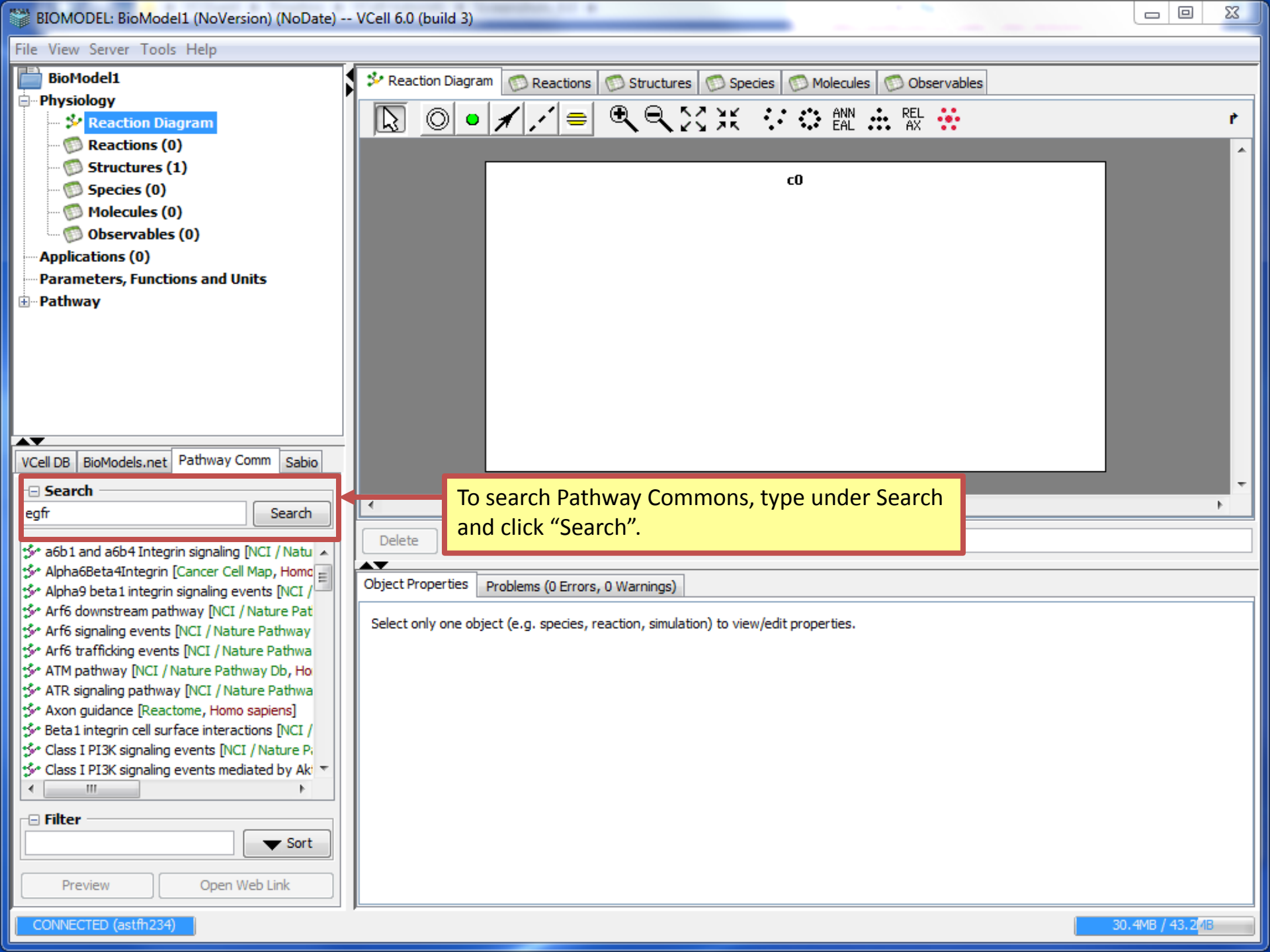
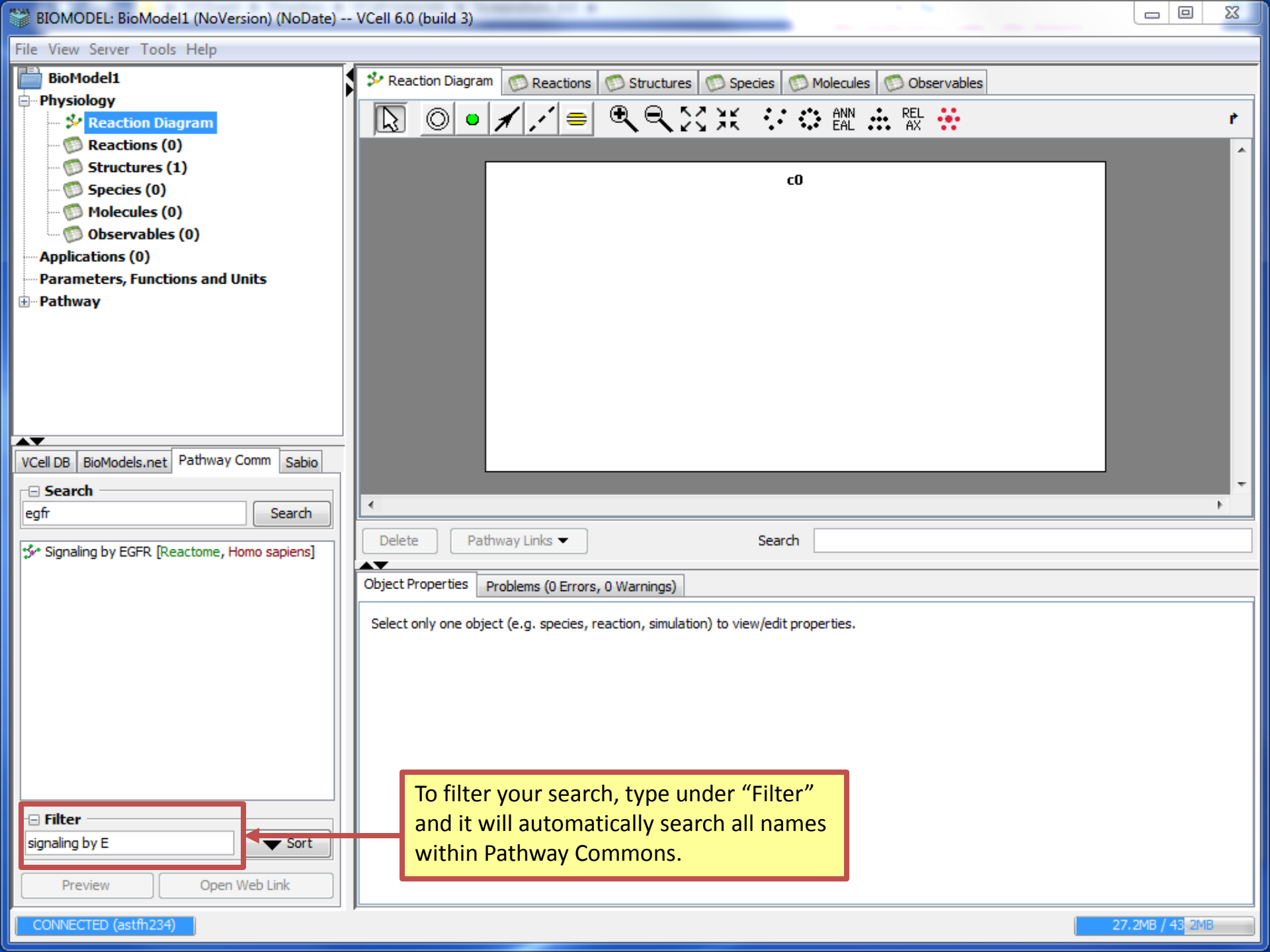
VCell Pathway Commons Tutorial

Using an external database


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
VCell DB
BioModels.net
Pathway Comm
To use the Pathways Commons database, click “Pathway Comm”.
Search
Search
Filter
Sort
Preview
Open Web Link
Delete
Pathway Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
27.7MB / 39.8MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
a6b1 and a6b4 Integrin signaling [NCI / Natu
Alpha6Beta4Integrin [Cancer Cell Map, Homo
Alpha9 beta1 integrin signaling events [NCI /
Arf6 downstream pathway [NCI / Nature Pat
Arf6 signaling events [NCI / Nature Pathway
Arf6 trafficking events [NCI / Nature Pathwa
ATM pathway [NCI / Nature Pathway Db, Ho
ATR signaling pathway [NCI / Nature Pathwa
Axon guidance [Reactome, Homo sapiens]
Beta1 integrin cell surface interactions [NCI /
Class I PI3K signaling events [NCI / Nature P
Class I PI3K signaling events mediated by Ak
Filter
Sort
Preview
Open Web Link
To search Pathway Commons, type under Search and click “Search”.
Delete
Object Properties
Problems (0 Errors, 0 Warnings)
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
30.4MB / 43.2MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
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Structures (1)
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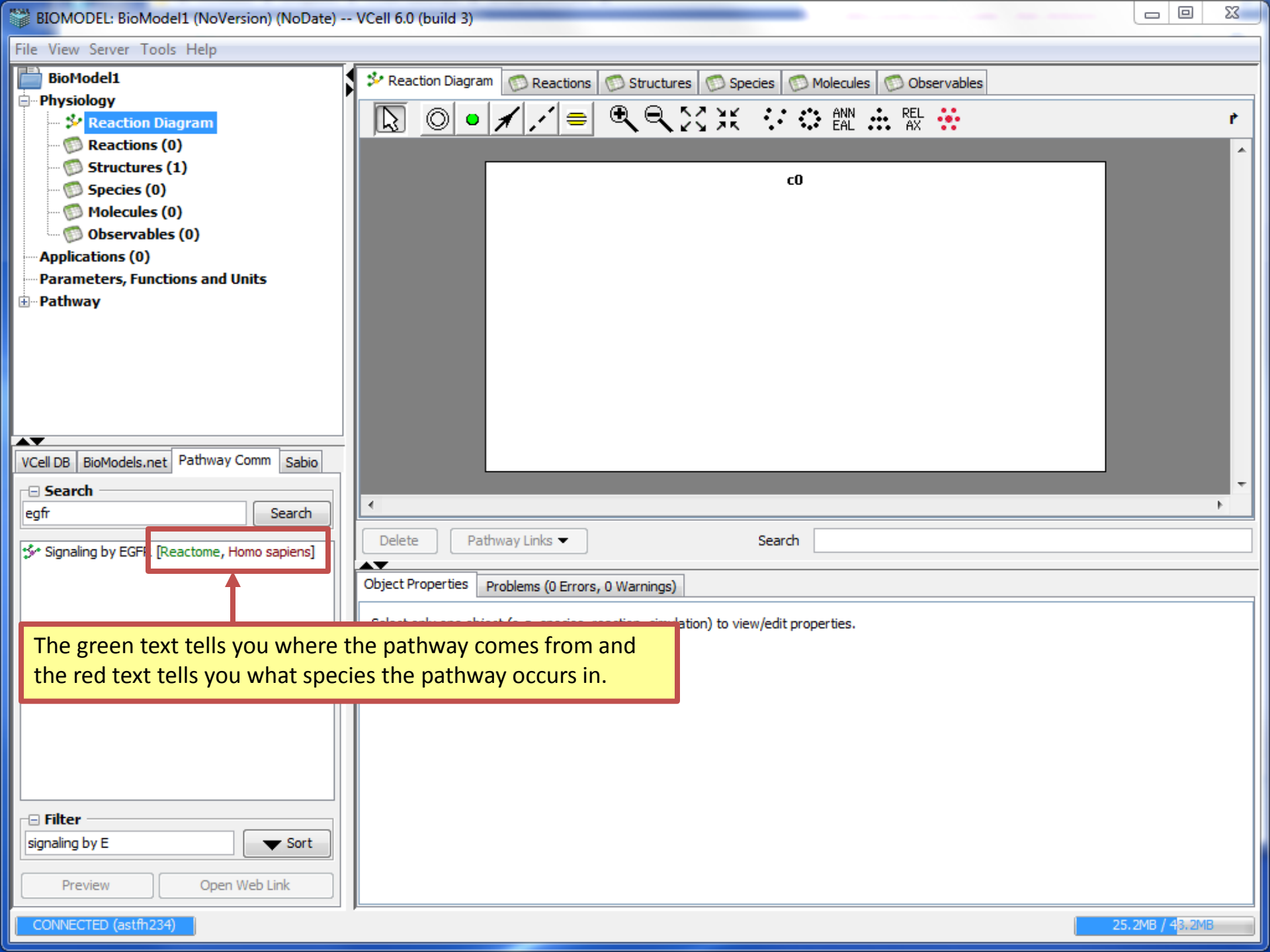
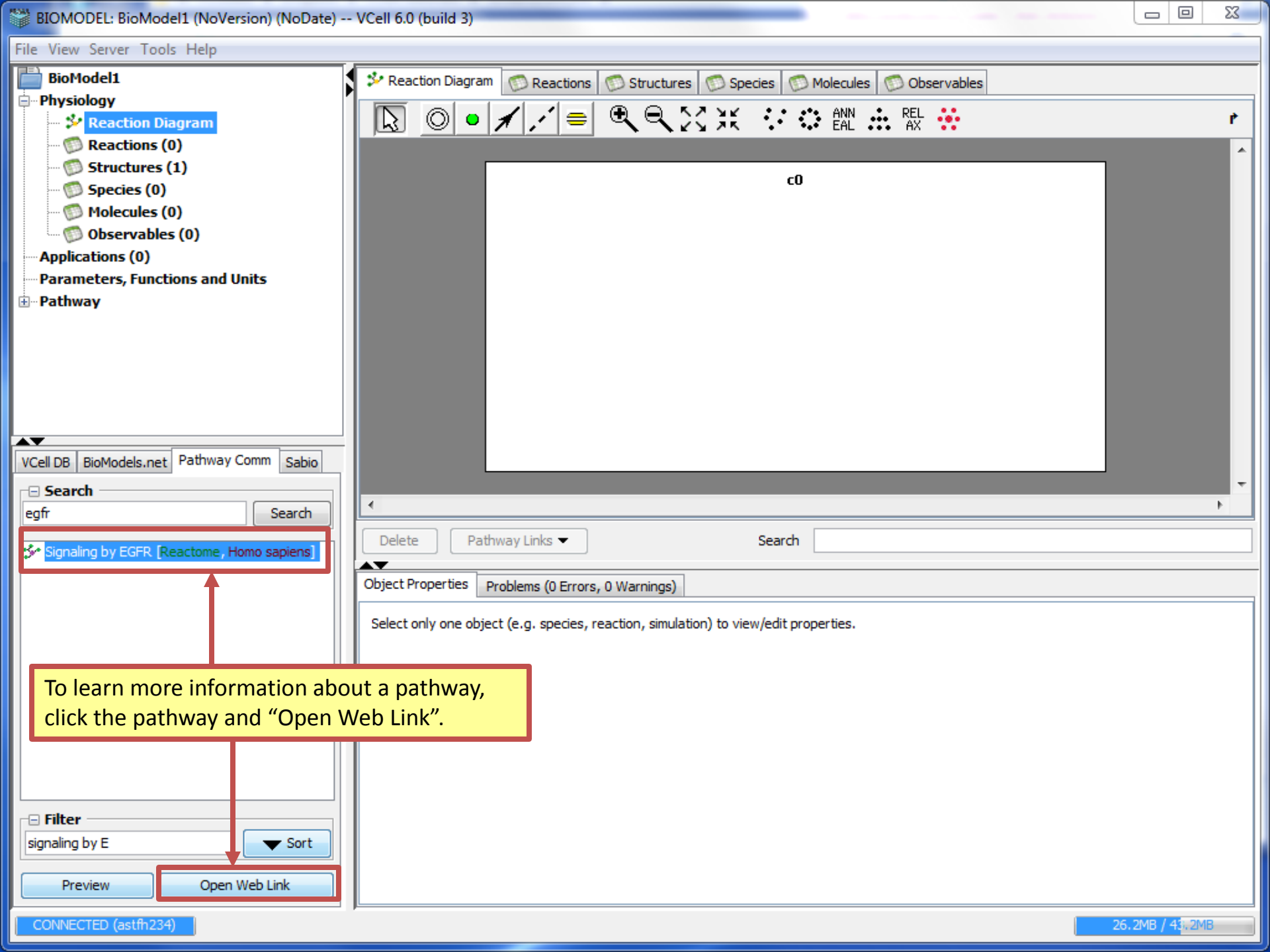
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
Delete
Pathway Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
To filter your search, type under “Filter” and it will automatically search all names within Pathway Commons.
CONNECTED (astfh234)
27.2MB / 43.2MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
Delete
Pathway Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
CONNECTED (astfh234)
25.2MB / 43.2MB
The green text tells you where the pathway comes from and the red text tells you what species the pathway occurs in.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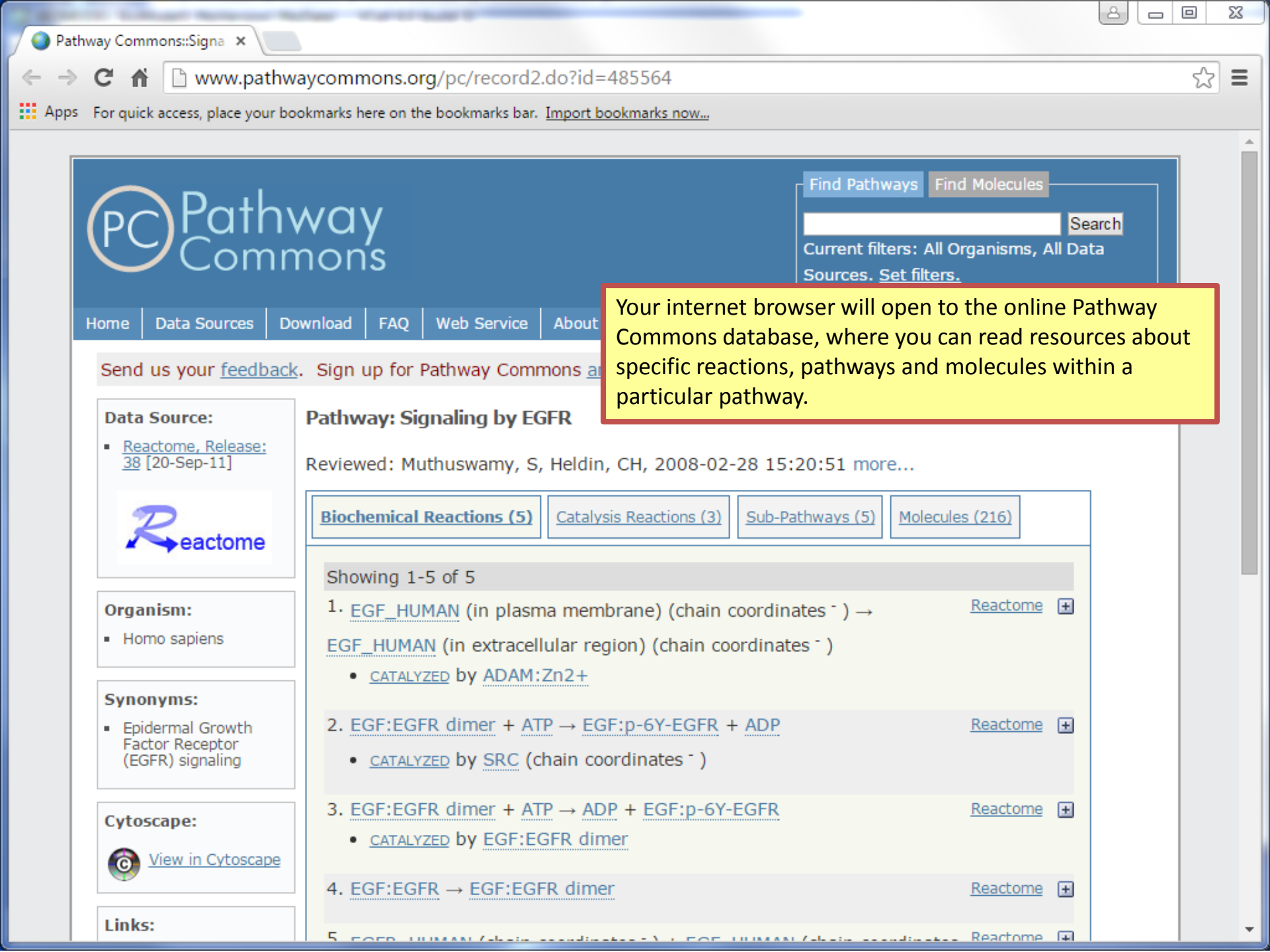
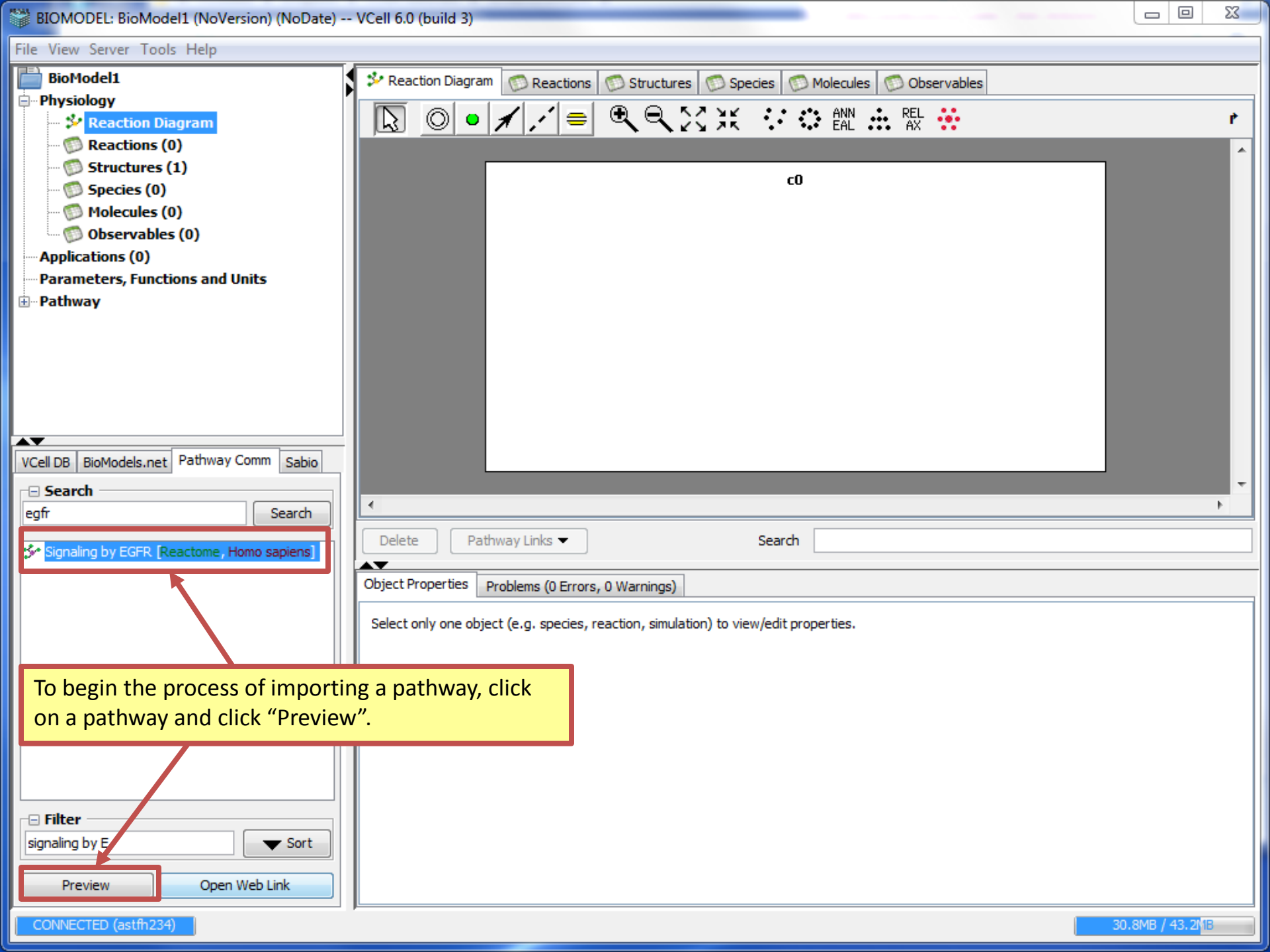
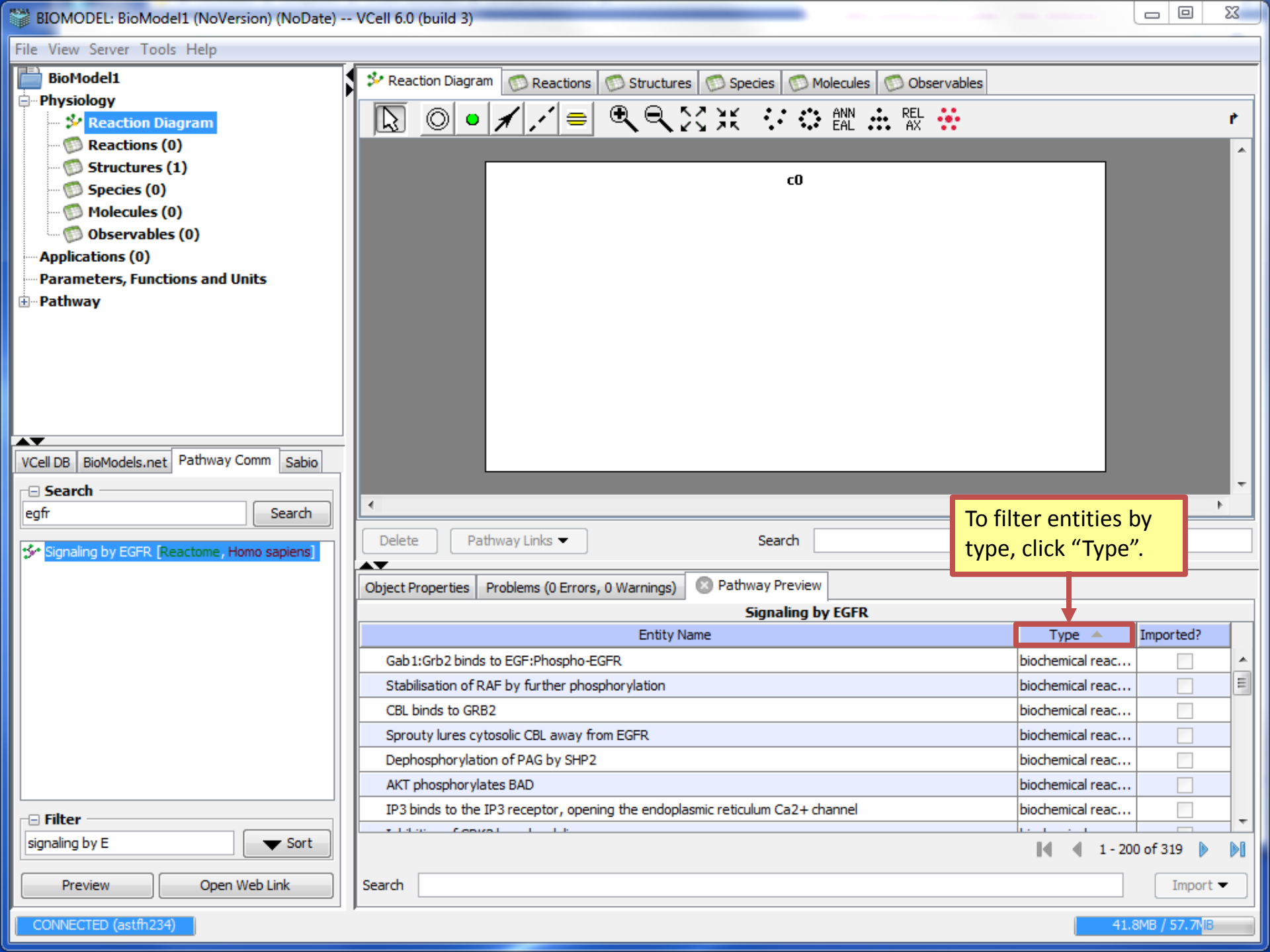
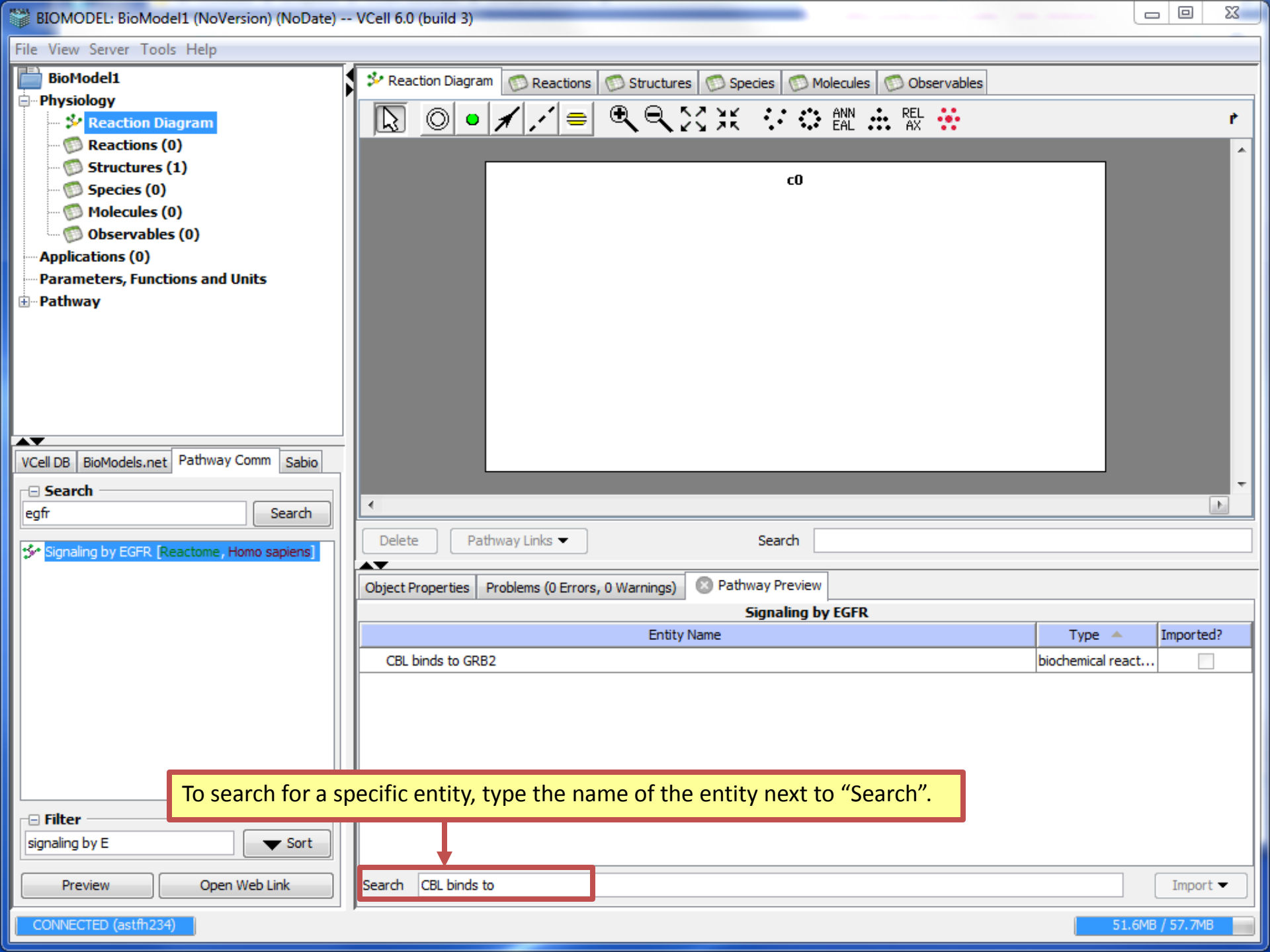
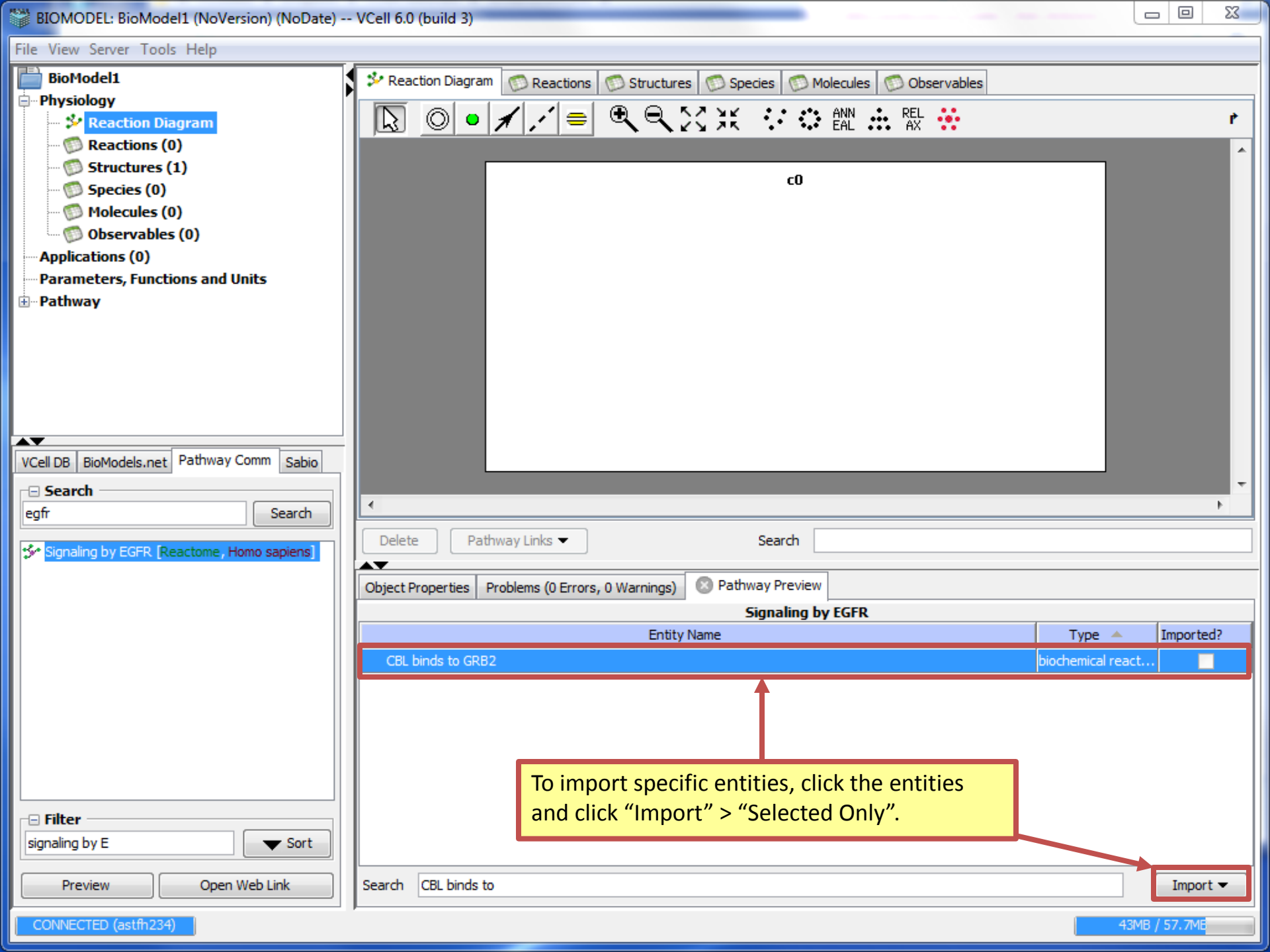
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
To learn more information about a pathway, click the pathway and “Open Web Link”.
CONNECTED (astfh234)

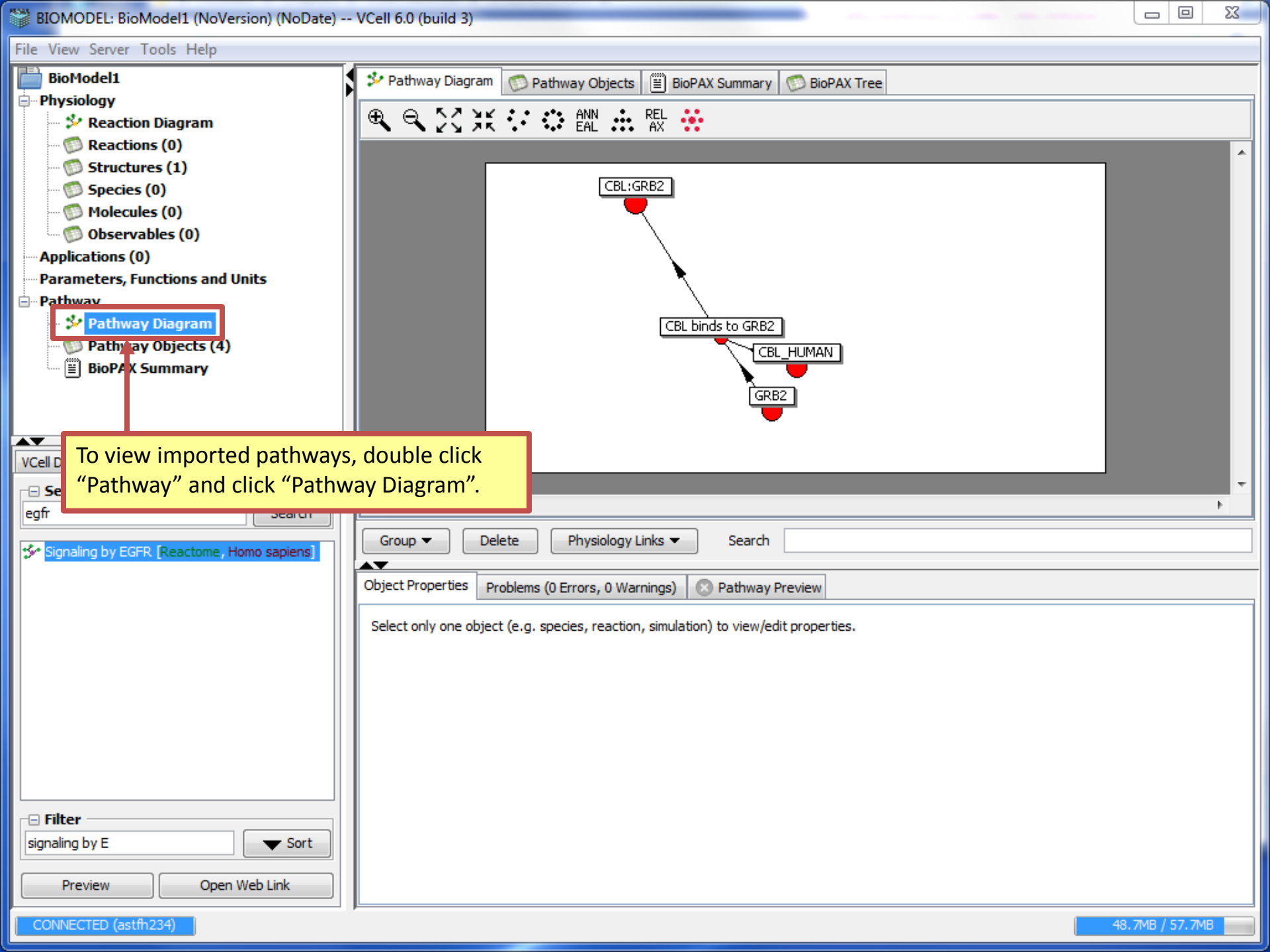

Pathway Commons::Signa
www.pathwaycommons.org/pc/record2.do?id=485564
Apps For quick access, place your bookmarks here on the bookmarks bar. Import bookmarks now...
Pathway Commons
Find Pathways
Find Molecules
Search
Current filters: All Organisms, All Data Sources. Set filters.
Home
Data Sources
Download
FAQ
Web Service
About
Send us your feedback. Sign up for Pathway Commons a
Your internet browser will open to the online Pathway Commons database, where you can read resources about specific reactions, pathways and molecules within a particular pathway.
Data Source:
Reactome, Release: 38 [20-Sep-11]
Reactome
Organism:
Homo sapiens
Synonyms:
Epidermal Growth Factor Receptor (EGFR) signaling
Cytoscape:
View in Cytoscape
Links:
Pathway: Signaling by EGFR
Reviewed: Muthuswamy, S, Heldin, CH, 2008-02-28 15:20:51 more...
Biochemical Reactions (5)
Catalysis Reactions (3)
Sub-Pathways (5)
Molecules (216)
Showing 1-5 of 5
1. EGF_HUMAN (in plasma membrane) (chain coordinates) → EGF_HUMAN (in extracellular region) (chain coordinates)
CATALYZED by ADAM:Zn2+
Reactome
2. EGF:EGFR dimer + ATP → EGF:p-6Y-EGFR + ADP
CATALYZED by SRC (chain coordinates)
Reactome
3. EGF:EGFR dimer + ATP → ADP + EGF:p-6Y-EGFR
CATALYZED by EGF:EGFR dimer
Reactome
4. EGF:EGFR → EGF:EGFR dimer
Reactome
5.
Reactome

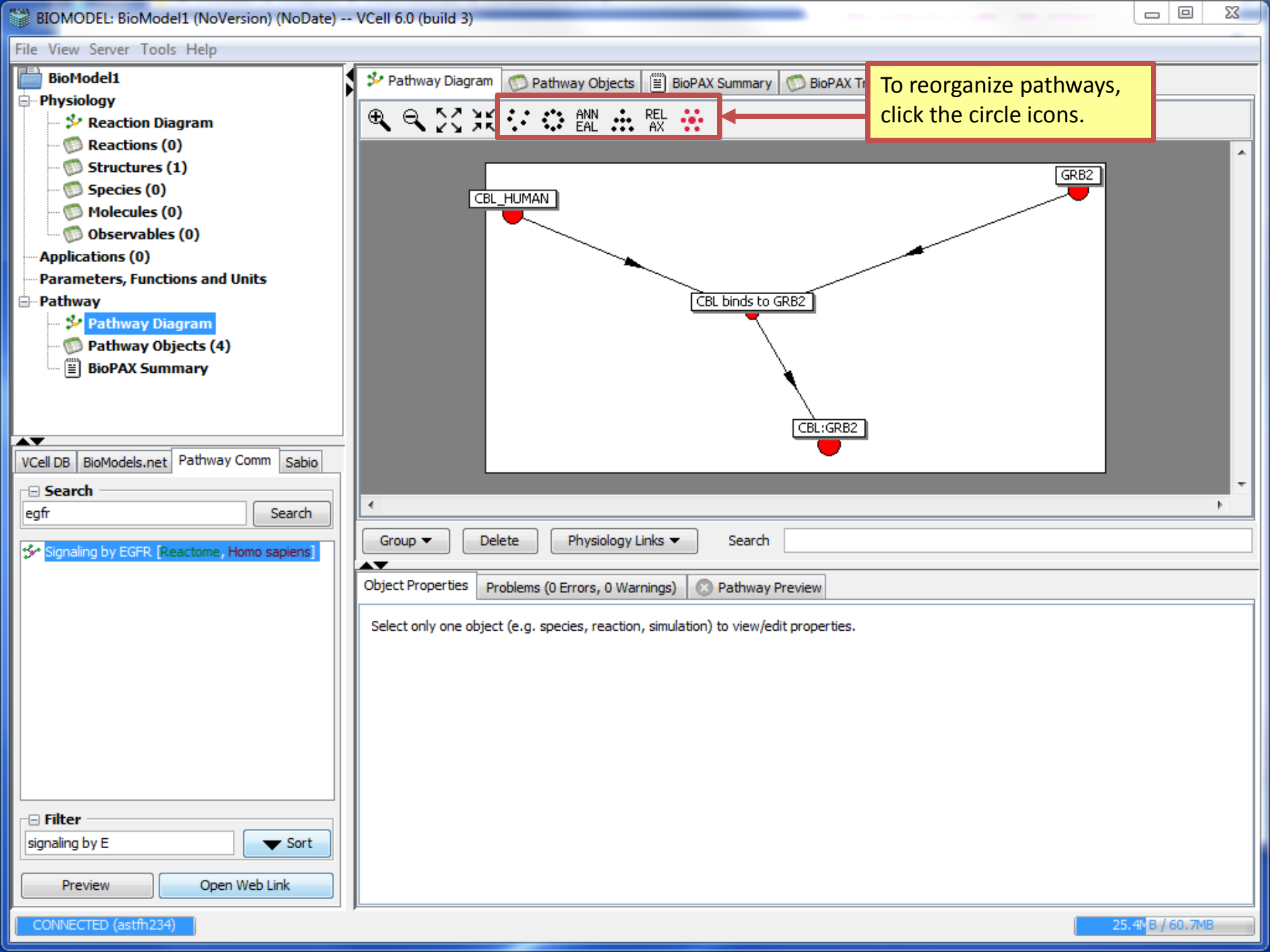

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
Delete
Pathway Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
To begin the process of importing a pathway, click on a pathway and click “Preview”.
CONNECTED (astfh234)
30.8MB / 43.2MB

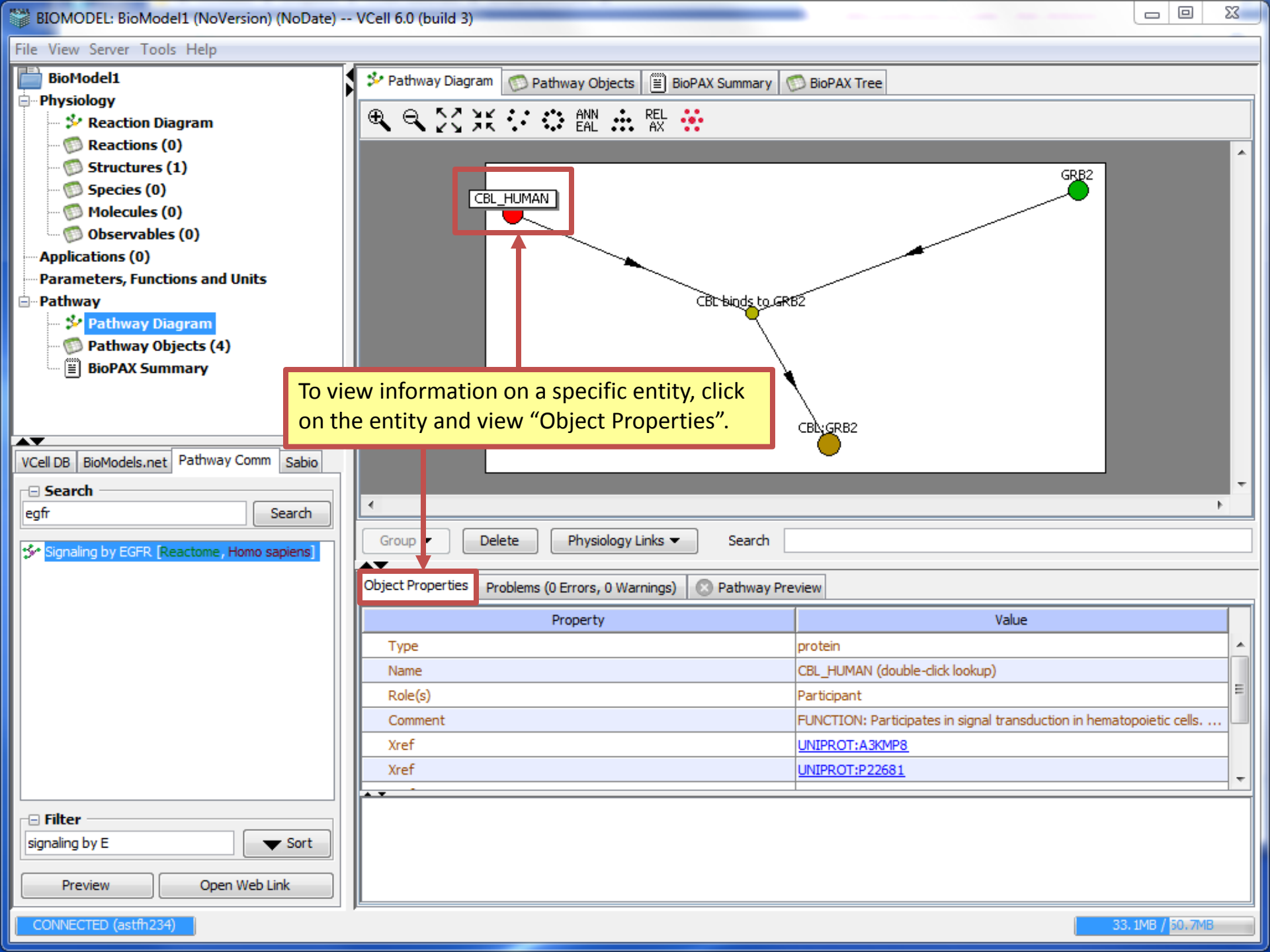

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
Delete
Pathway Links
Search
To filter entities by type, click “Type”.
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Signaling by EGFR
Entity Name
Type
Imported?
Gab1:Grb2 binds to EGF:Phospho-EGFR
Stabilisation of RAF by further phosphorylation
CBL binds to GRB2
Sprouty lures cytosolic CBL away from EGFR
Dephosphorylation of PAG by SHP2
AKT phosphorylates BAD
IP3 binds to the IP3 receptor, opening the endoplasmic reticulum Ca2+ channel
biochemical reac...
1 - 200 of 319
Search
Import
CONNECTED (astfh234)
41.8MB / 57.7MB

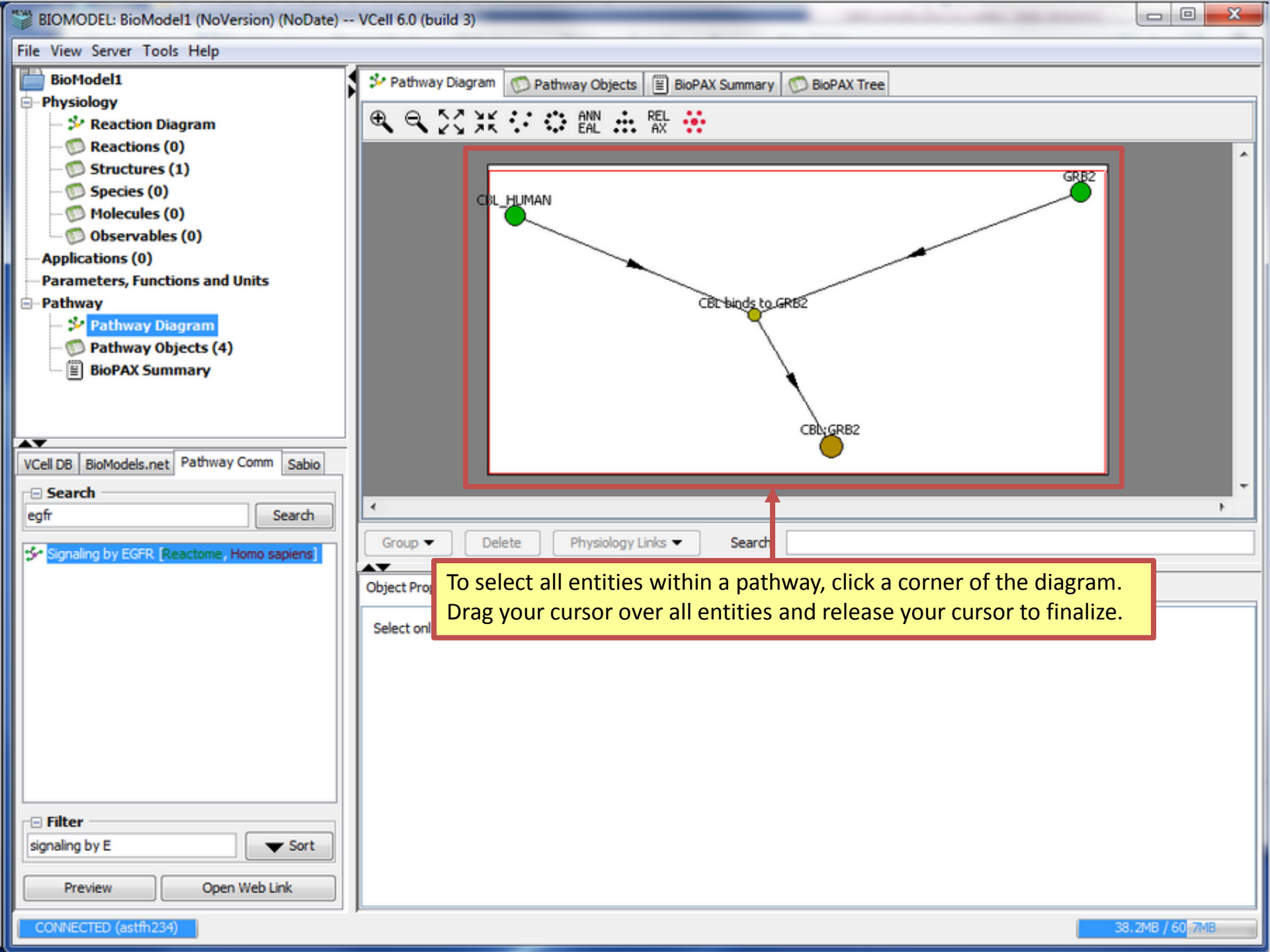

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
Delete
Pathway Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Signaling by EGFR
Entity Name
Type
Imported?
CBL binds to GRB2
biochemical react...
To search for a specific entity, type the name of the entity next to “Search”.
Search
CBL binds to
Import
CONNECTED (astfh234)
51.6MB / 57.7MB

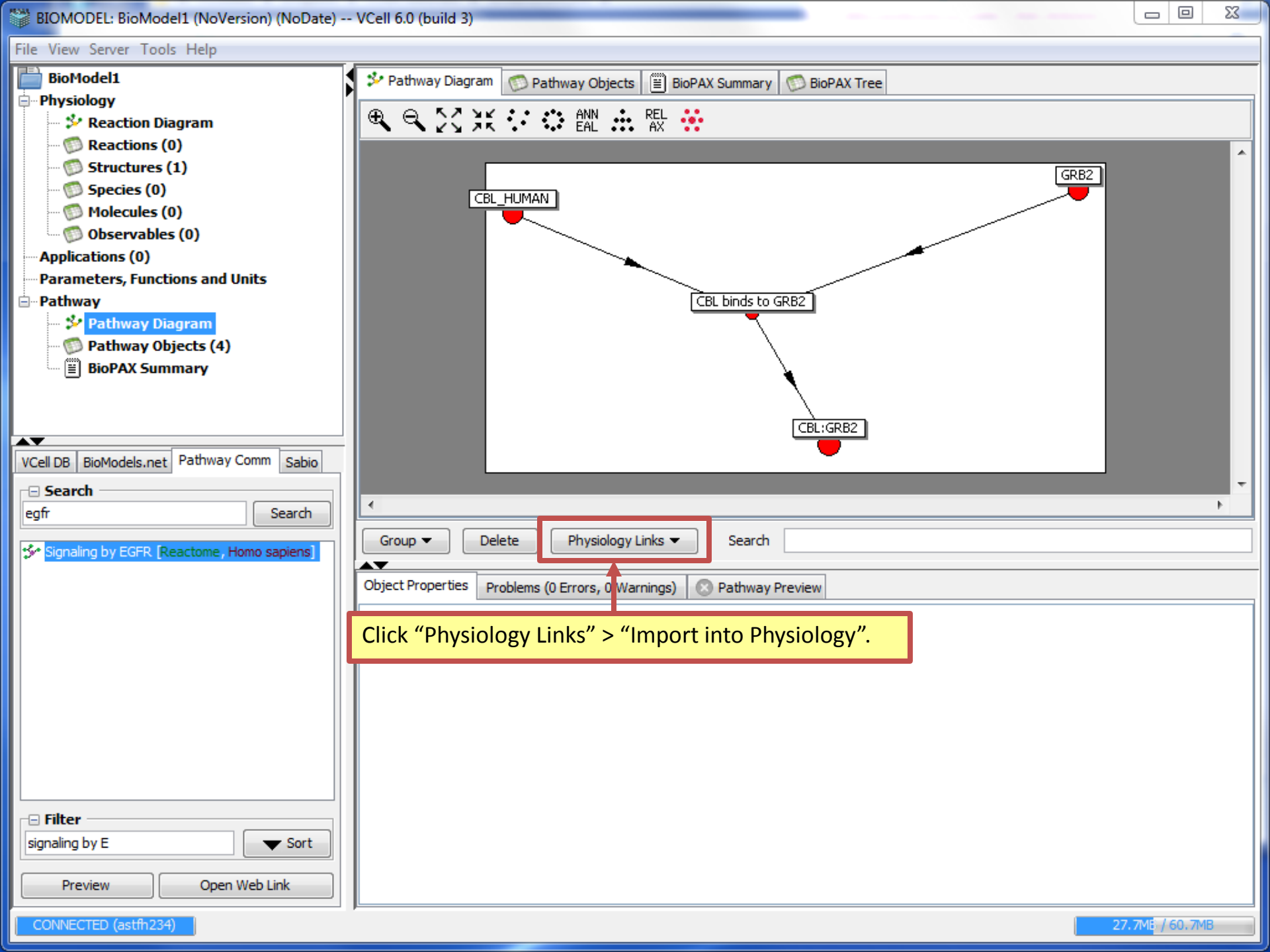

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
Delete
Pathway Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Signaling by EGFR
Entity Name
Type
Imported?
CBL binds to GRB2
biochemical react...
To import specific entities, click the entities and click “Import” > “Selected Only”.
Search
CBL binds to
Import
CONNECTED (astfh234)
43MB / 57.7MB

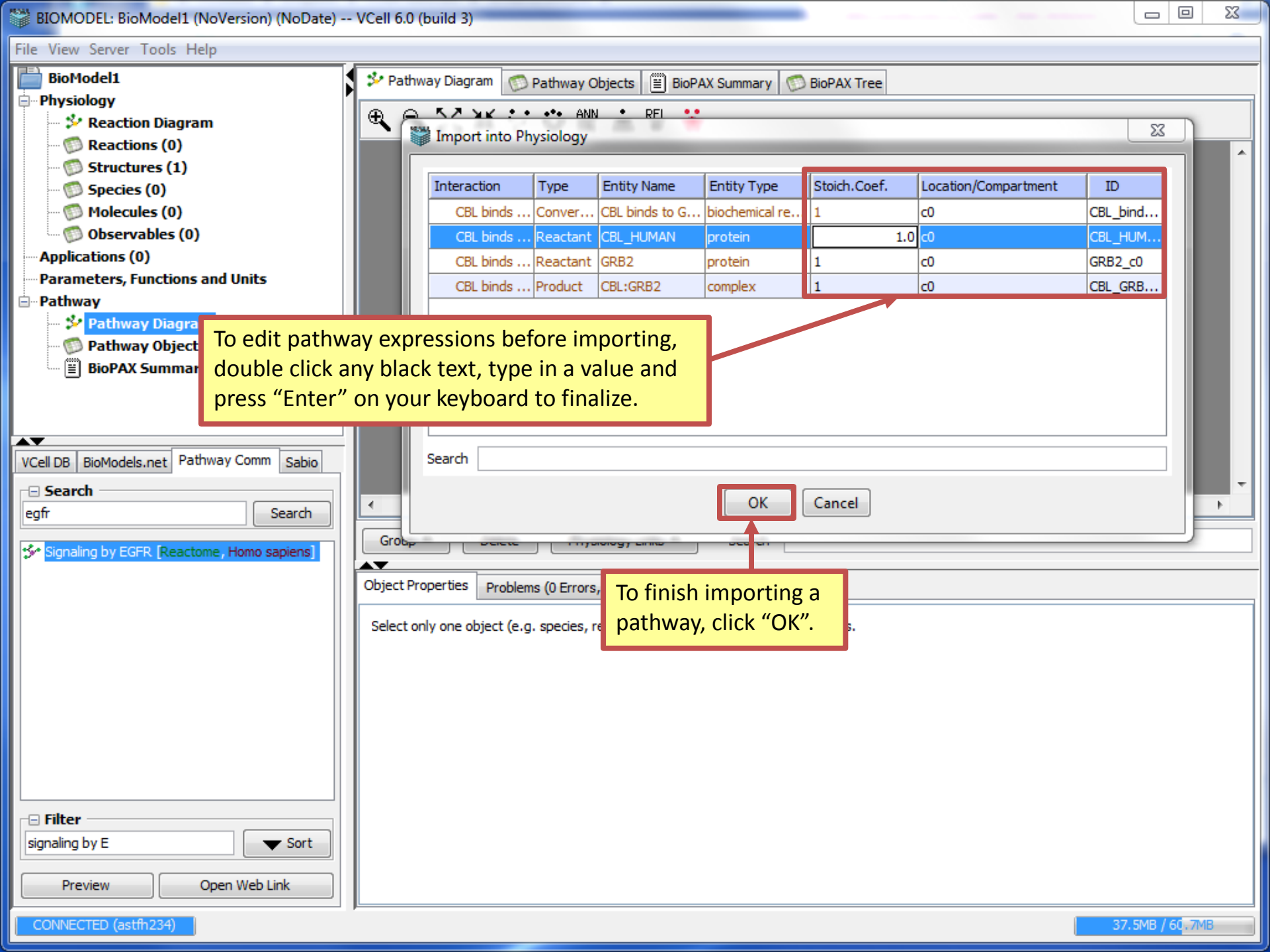

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
CBL:GRB2
CBL binds to GRB2
CBL_HUMAN
GRB2
To view imported pathways, double click "Pathway" and click "Pathway Diagram".
egfr
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Group
Delete
Physiology Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
48.7MB / 57.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
To reorganize pathways, click the circle icons.
CBL_HUMAN
GRB2
CBL binds to GRB2
CBL:GRB2
Group
Delete
Physiology Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
25.4MB / 60.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
CBL_HUMAN
GRB2
CBL binds to GRB2
CBL:GRB2
To view information on a specific entity, click on the entity and view "Object Properties".
Group
Delete
Physiology Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Property
Value
Type
protein
Name
CBL_HUMAN (double-click lookup)
Role(s)
Participant
Comment
FUNCTION: Participates in signal transduction in hematopoietic cells. ...
Xref
UNIPROT:A3KMP8
Xref
UNIPROT:P22681
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
CONNECTED (astfh234)
33.1MB / 50.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
ANN EAL
REL AX
CBL_HUMAN
GRB2
CBL binds to GRB2
CBL:GRB2
Group
Delete
Physiology Links
Search
To select all entities within a pathway, click a corner of the diagram.
Drag your cursor over all entities and release your cursor to finalize.
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
CONNECTED (astfh234)
38.2MB / 60.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
CBL_HUMAN
GRB2
CBL binds to GRB2
CBL:GRB2
Group
Delete
Physiology Links
Search
Import into Physiology
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Click “Physiology Links” > “Import into Physiology”.
CONNECTED (astfh234)
27.7MB / 60.7MB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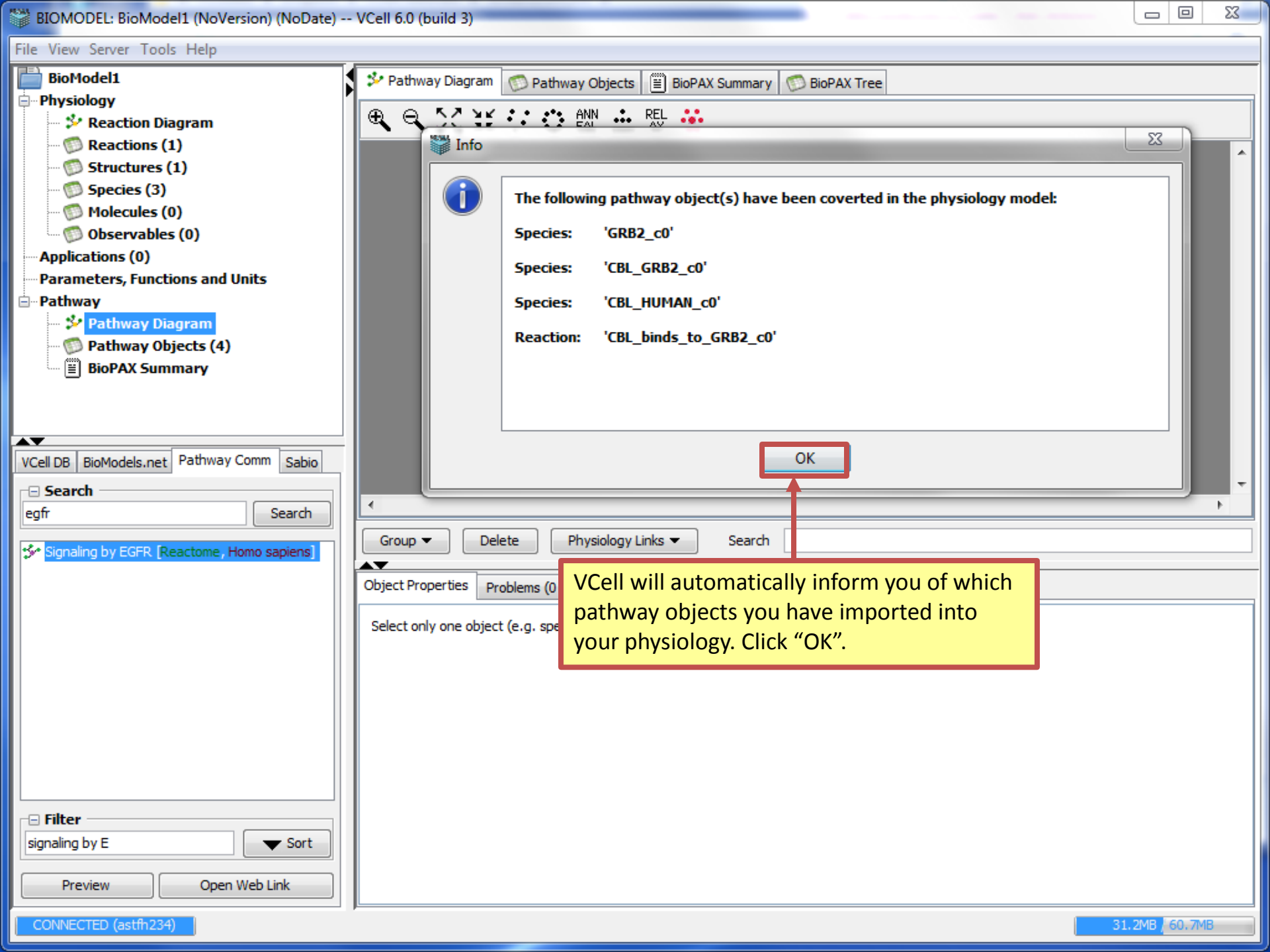
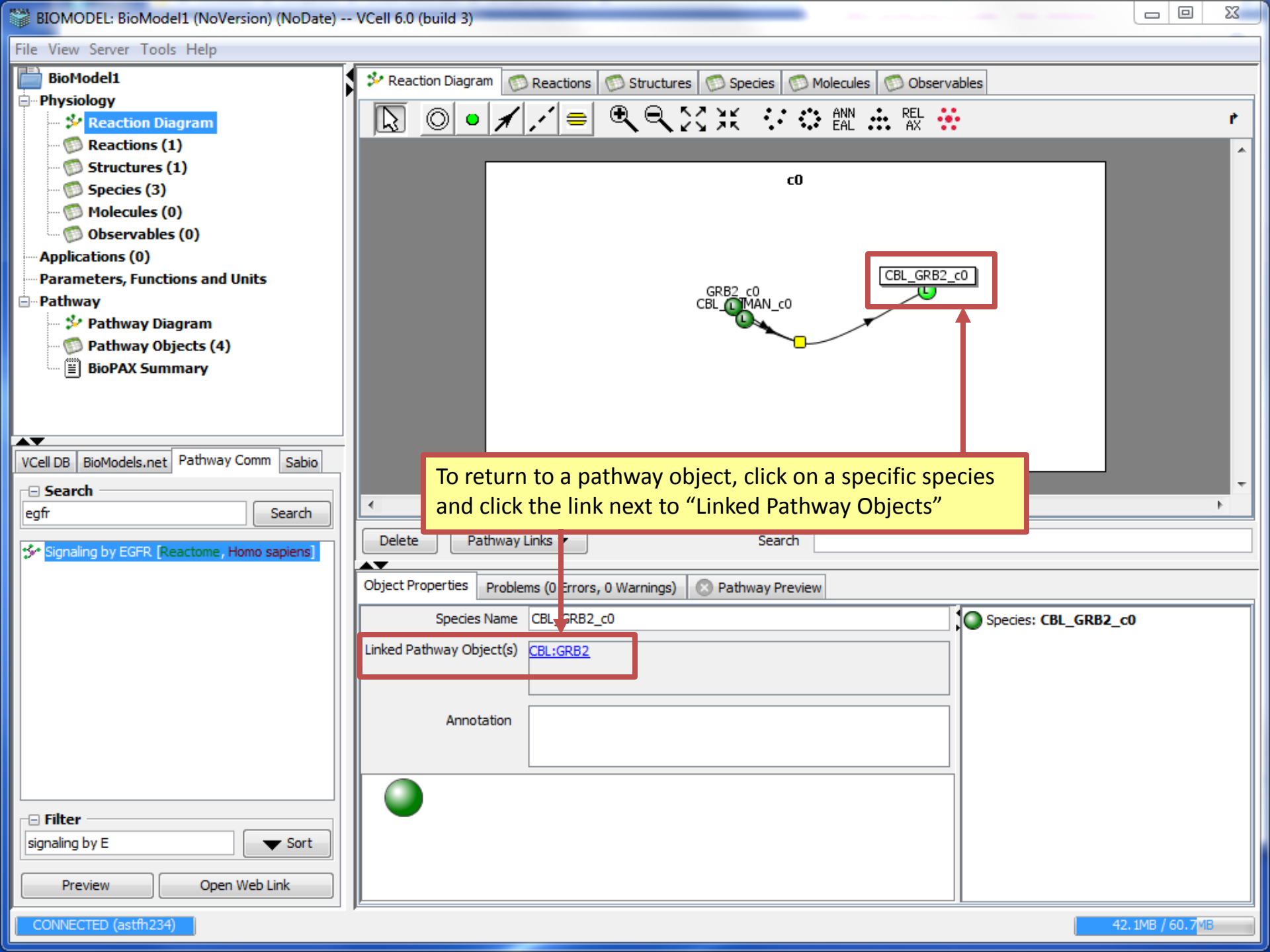
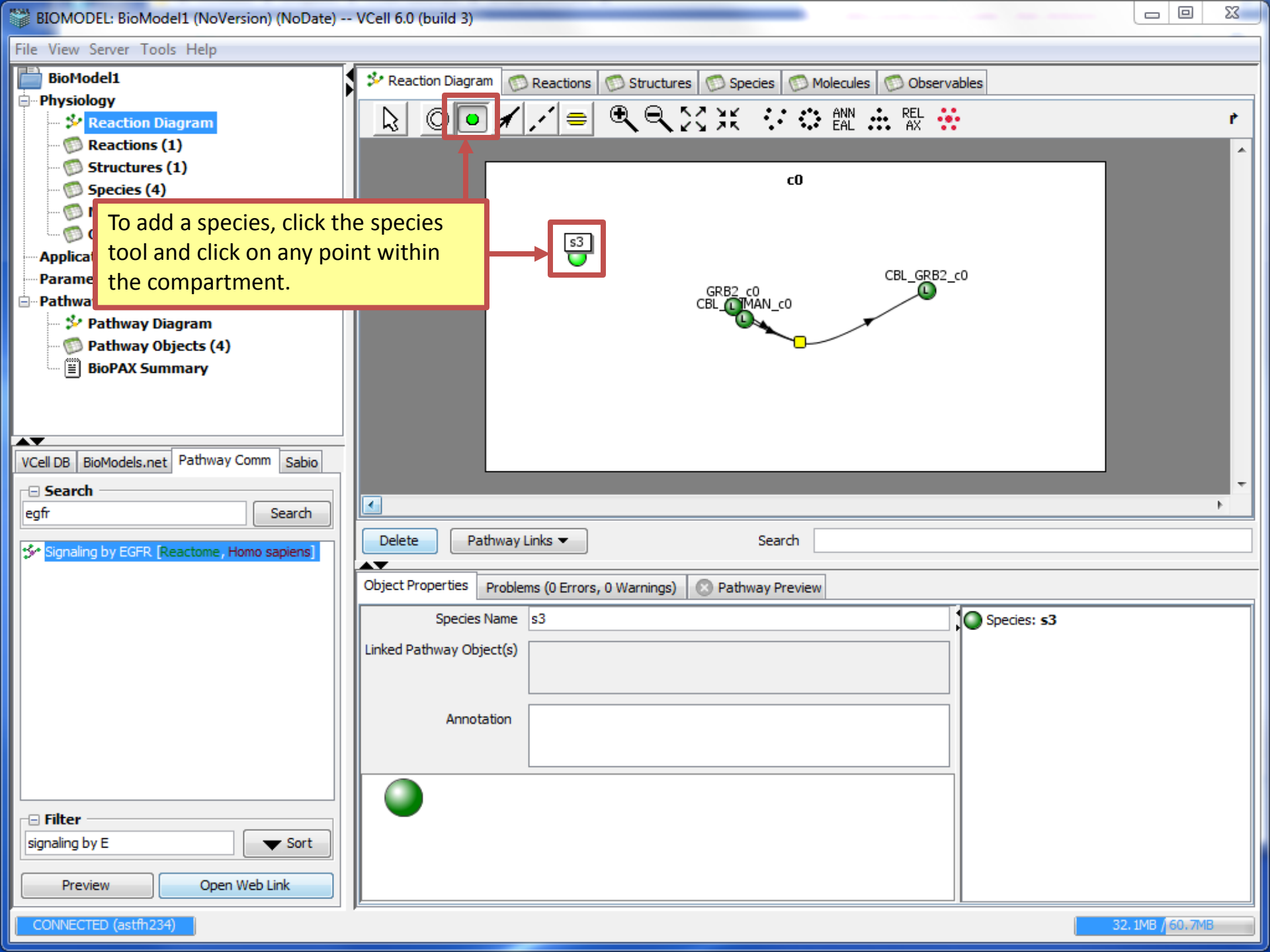
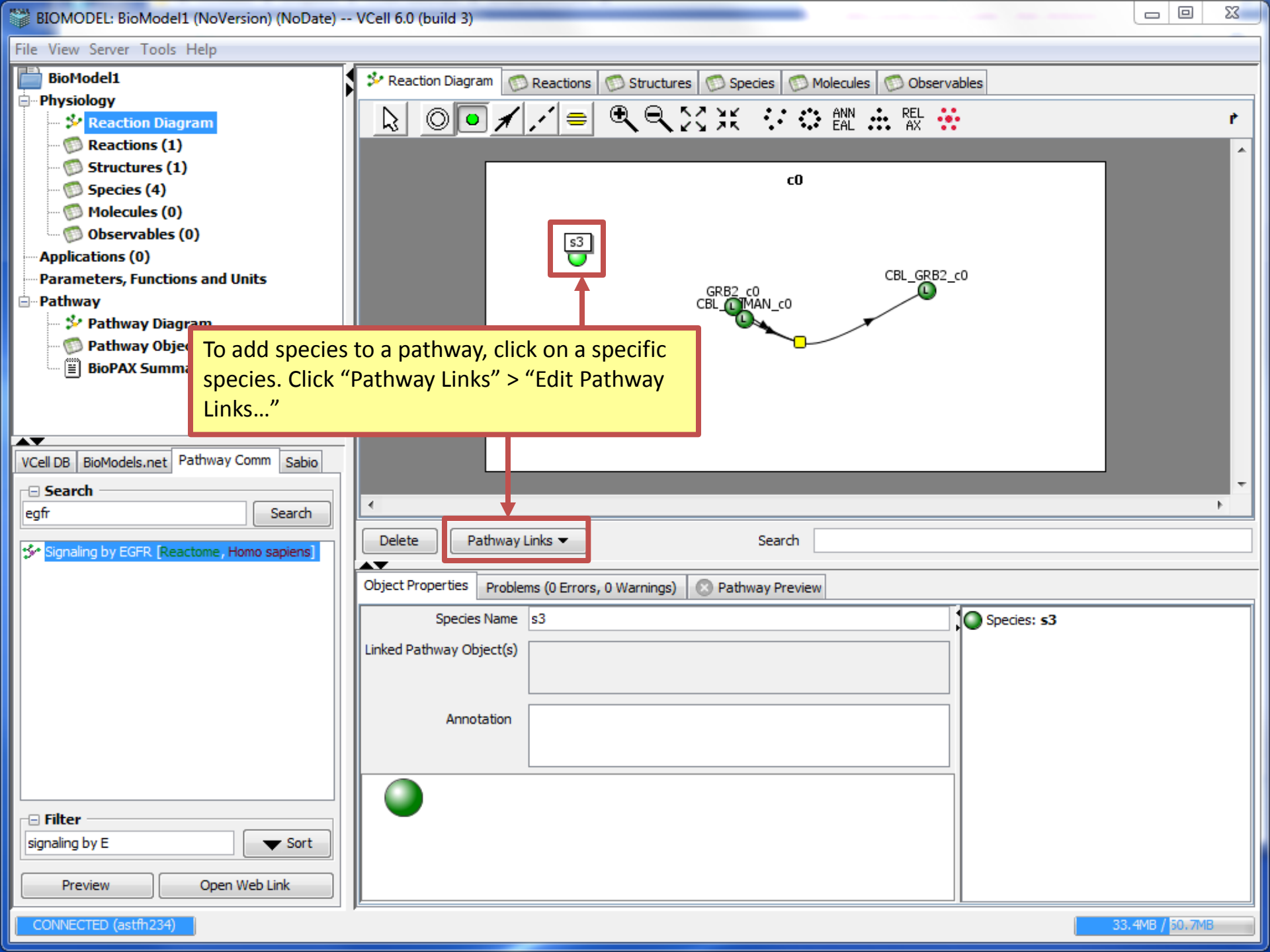
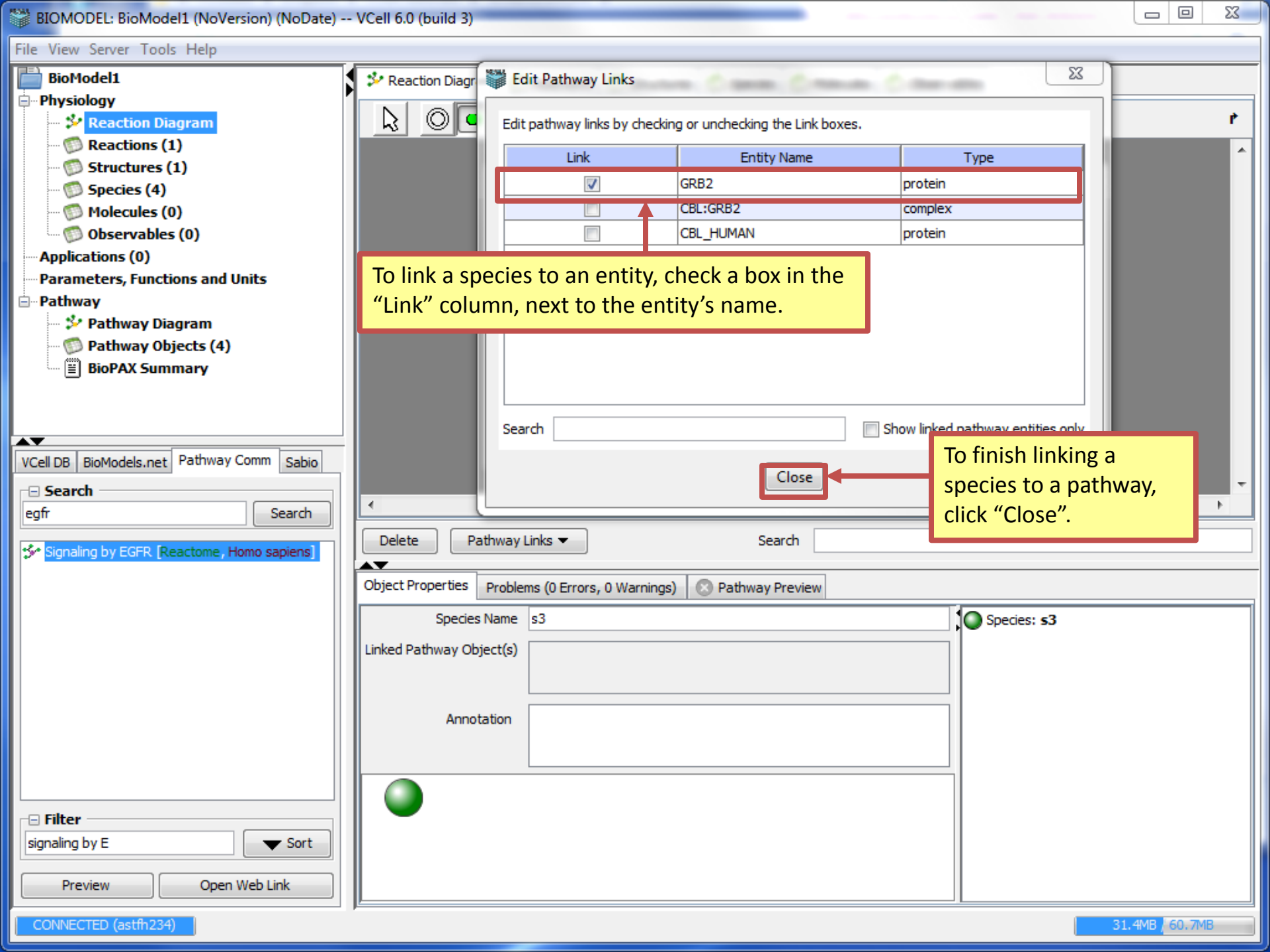
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (0)
Structures (1)
Species (0)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagra
Pathway Object
BioPAX Summar
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
Import into Physiology
Interaction
Type
Entity Name
Entity Type
Stoich.Coef.
Location/Compartment
ID
CBL binds ...
Conver...
CBL binds to G...
biochemical re..
1
c0
CBL_bind...
CBL binds ...
Reactant
CBL_HUMAN
protein
1.0
c0
CBL_HUM...
CBL binds ...
Reactant
GRB2
protein
1
c0
GRB2_c0
CBL binds ...
Product
CBL:GRB2
complex
1
c0
CBL_GRB...
Search
OK
Cancel
To edit pathway expressions before importing, double click any black text, type in a value and press “Enter” on your keyboard to finalize.
To finish importing a pathway, click “OK”.
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors,
Select only one object (e.g. species,
CONNECTED (astfh234)
37.5MB / 60.7MB

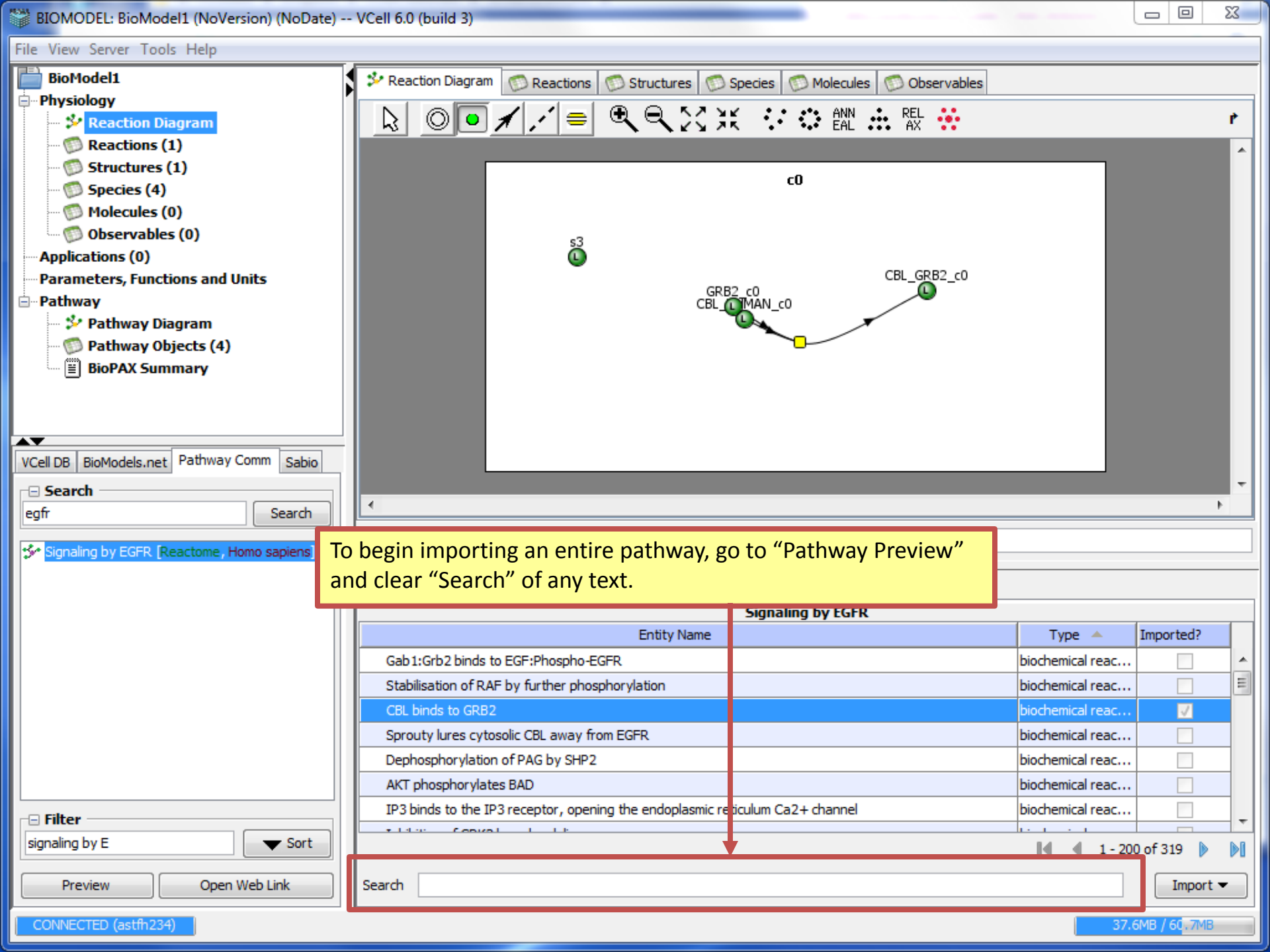

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (3)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
Info
The following pathway object(s) have been coverted in the physiology model:
Species: 'GRB2_c0'
Species: 'CBL_GRB2_c0'
Species: 'CBL_HUMAN_c0'
Reaction: 'CBL_binds_to_GRB2_c0'
OK
VCell will automatically inform you of which pathway objects you have imported into your physiology. Click “OK”.
Group
Delete
Physiology Links
Search
Object Properties
Problems (0
Select only one object (e.g. spe
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
CONNECTED (astfh234)
31.2MB
60.7MB

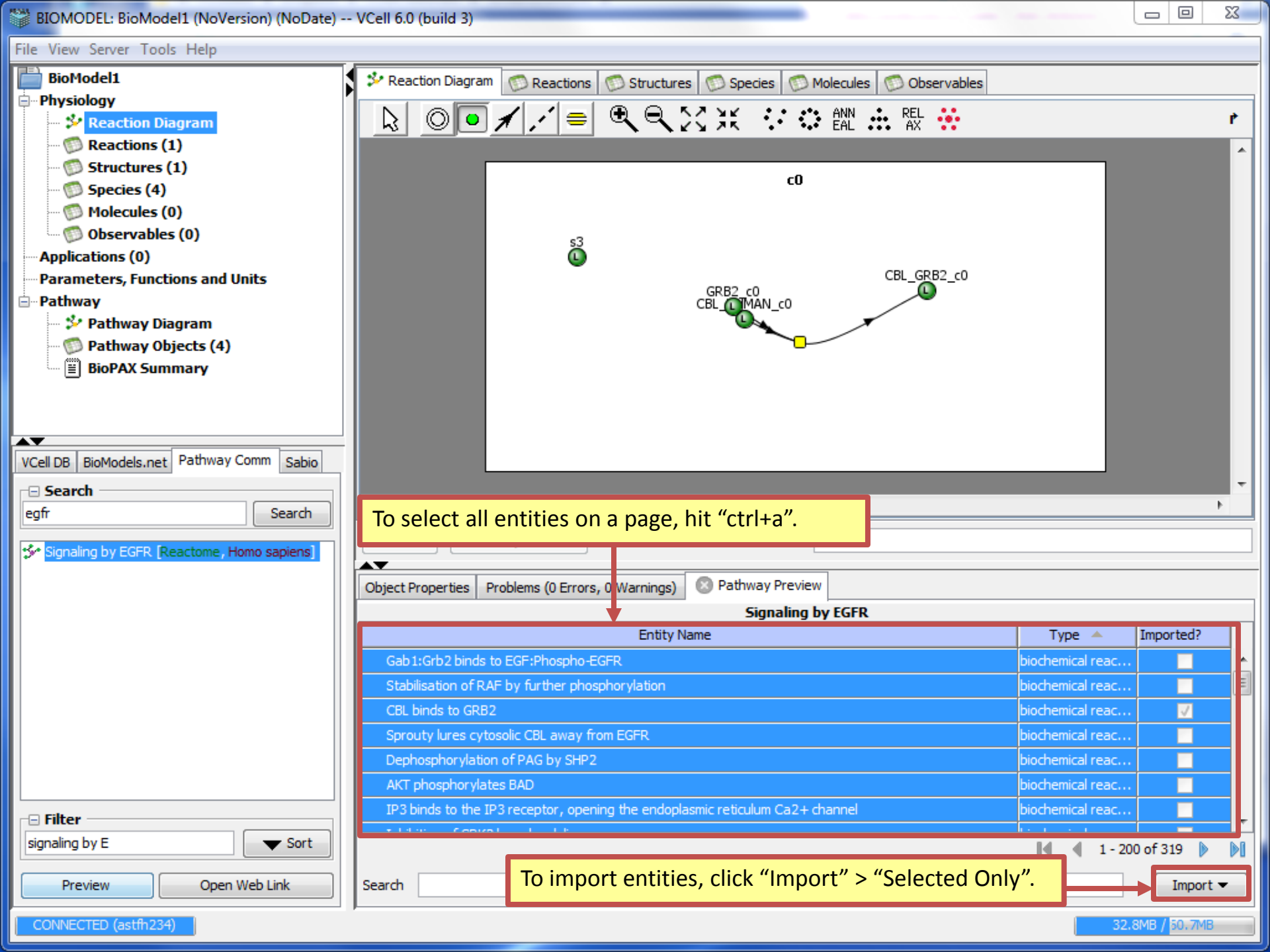

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (3)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
GRB2_c0
CBL_GRB2_c0
To return to a pathway object, click on a specific species and click the link next to "Linked Pathway Objects"
Delete
Pathway Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Species Name
CBL_GRB2_c0
Linked Pathway Object(s)
CBL:GRB2
Annotation
Species: CBL_GRB2_c0
CONNECTED (astfh234)
42.1MB / 60.7MB

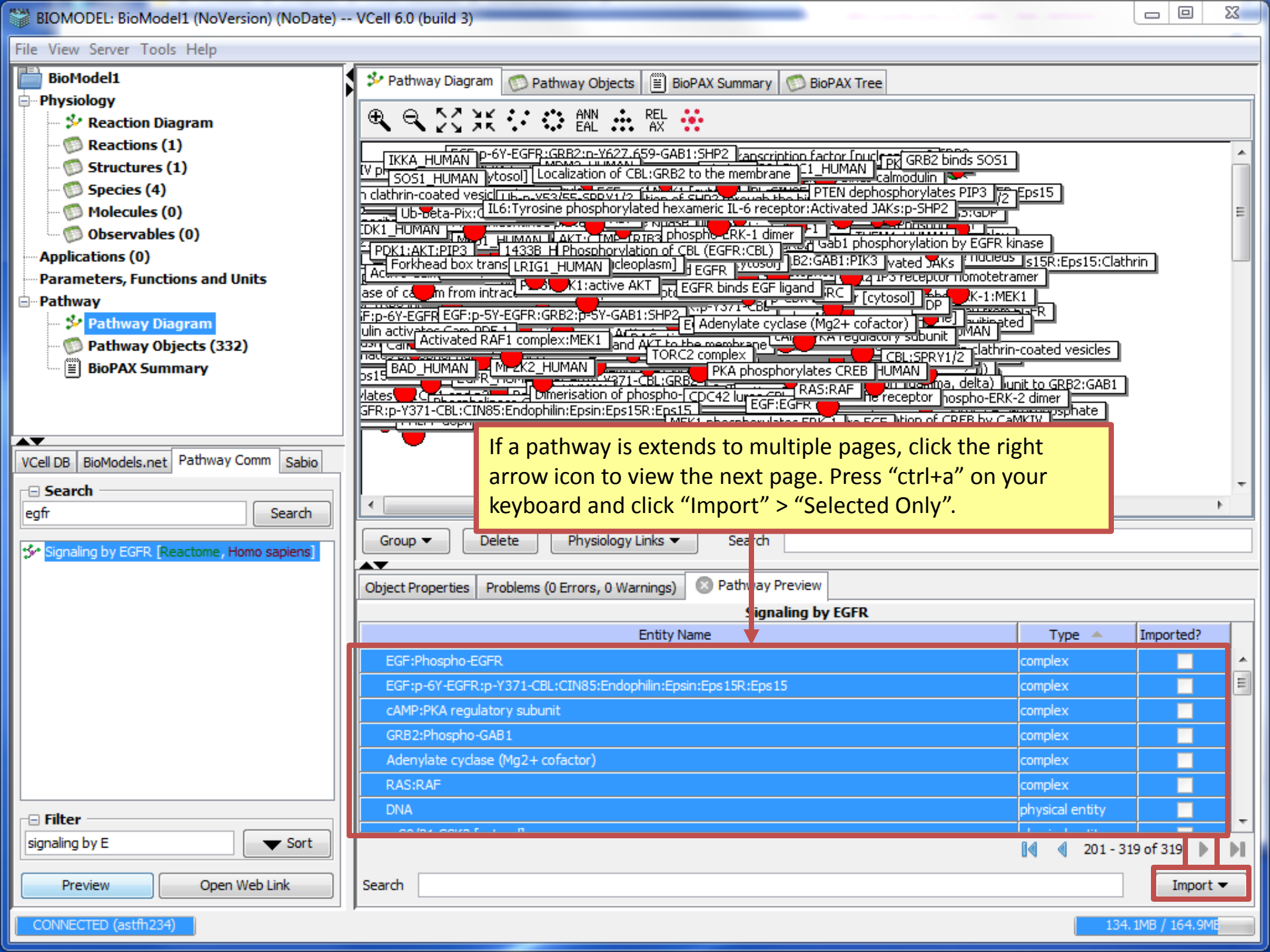

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
To add a species, click the species tool and click on any point within the compartment.
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
s3
GRB2_c0
CBL_GRB2_c0
Delete
Pathway Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Species Name
s3
Linked Pathway Object(s)
Annotation
Species: s3
CONNECTED (astfh234)
32.1MB / 60.7MB

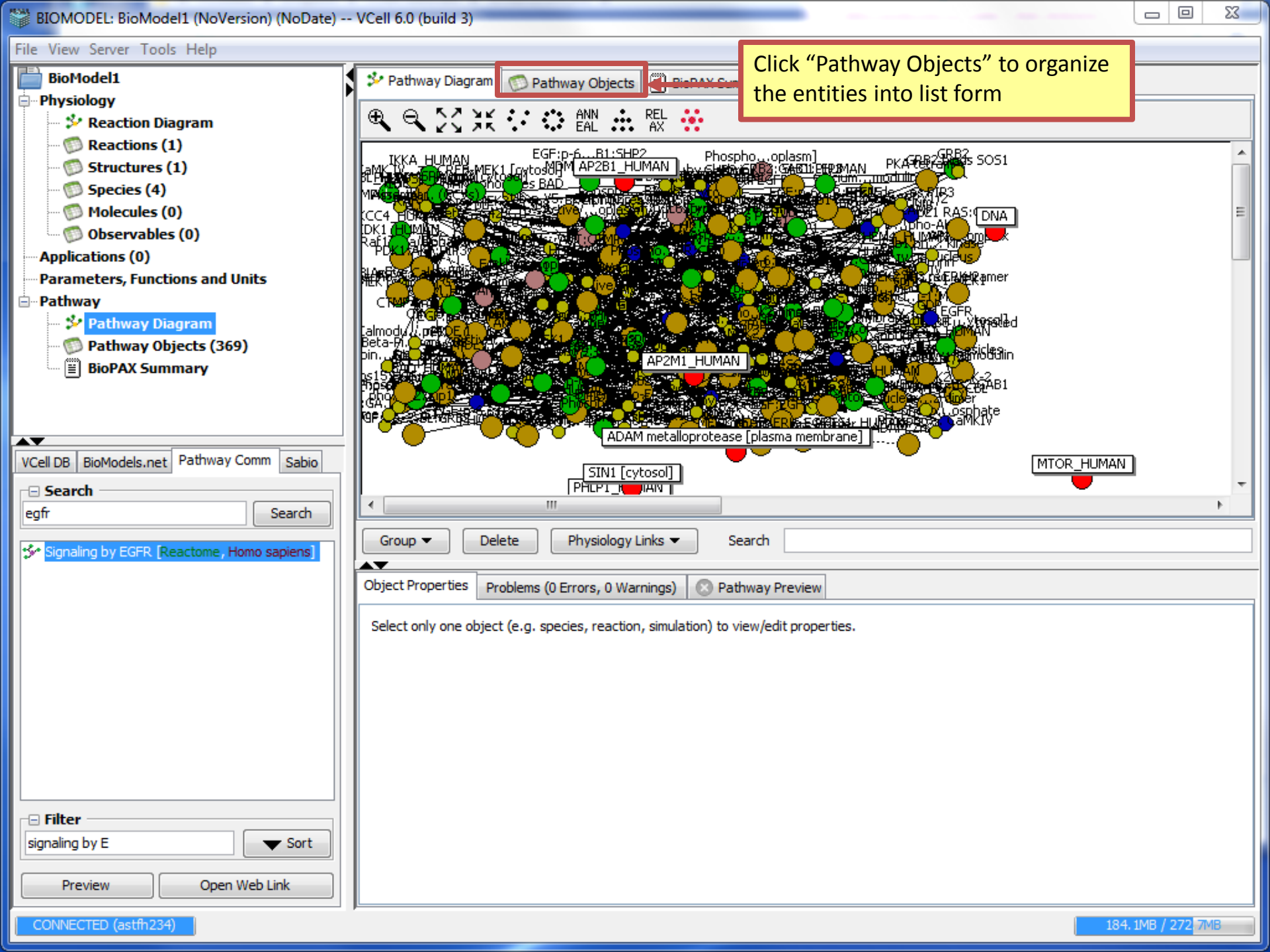

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
BioPAX Summa
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
s3
GRB2_c0
CBL_GRB2_c0
To add species to a pathway, click on a specific species. Click “Pathway Links” > “Edit Pathway Links…”
Delete
Pathway Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Species Name
s3
Linked Pathway Object(s)
Annotation
Species: s3
CONNECTED (astfh234)
33.4MB / 50.7MB

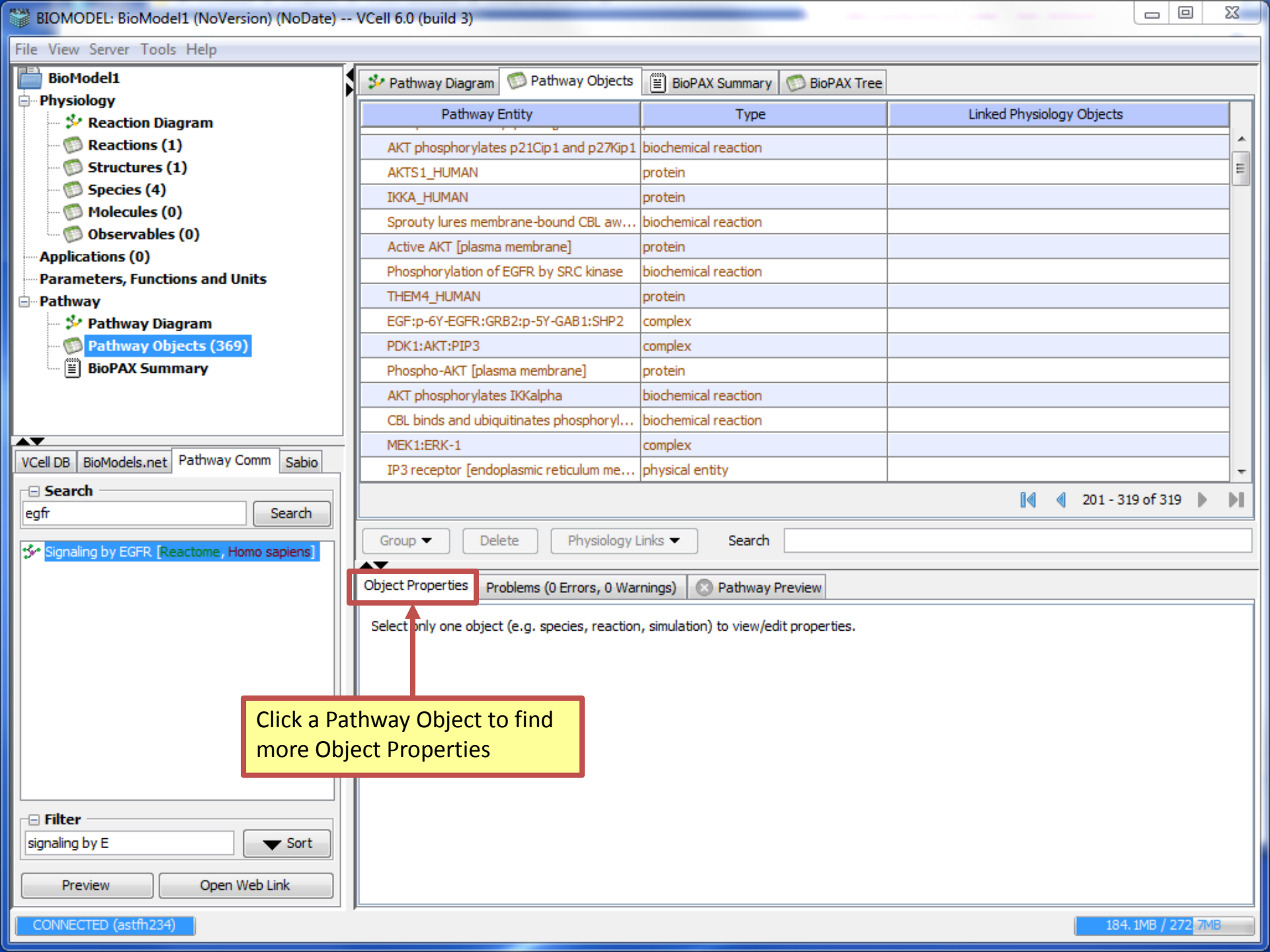

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Reaction Diagr
Edit Pathway Links
Edit pathway links by checking or unchecking the Link boxes.
Link
Entity Name
Type
GRB2
protein
CBL:GRB2
complex
CBL_HUMAN
protein
To link a species to an entity, check a box in the "Link" column, next to the entity's name.
Search
Show linked pathway entities only
Close
To finish linking a species to a pathway, click "Close".
Delete
Pathway Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Species Name
s3
Linked Pathway Object(s)
Annotation
Species: s3
CONNECTED (astfh234)
31.4MB
60.7MB

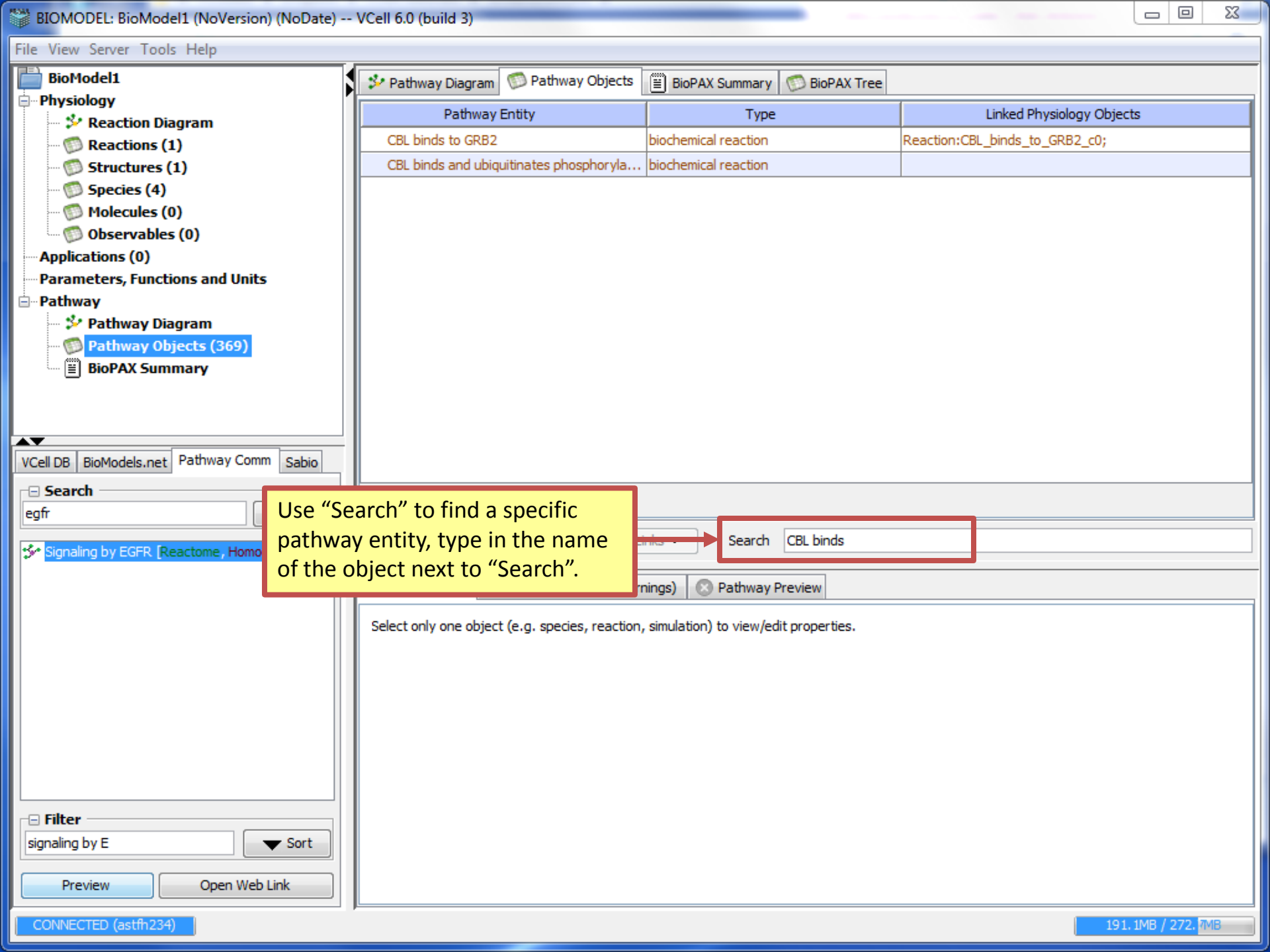

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
s3
GRB2_c0
CBL_GRB2_c0
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
To begin importing an entire pathway, go to “Pathway Preview” and clear “Search” of any text.
Signaling by EGFR
Entity Name
Type
Imported?
Gab1:Grb2 binds to EGF:Phospho-EGFR
Stabilisation of RAF by further phosphorylation
CBL binds to GRB2
Sprouty lures cytosolic CBL away from EGFR
Dephosphorylation of PAG by SHP2
AKT phosphorylates BAD
IP3 binds to the IP3 receptor, opening the endoplasmic reticulum Ca2+ channel
biochemical reac...
1 - 200 of 319
Filter
signaling by E
Sort
Preview
Open Web Link
Search
Import
CONNECTED (astfh234)
37.6MB / 60.7MB

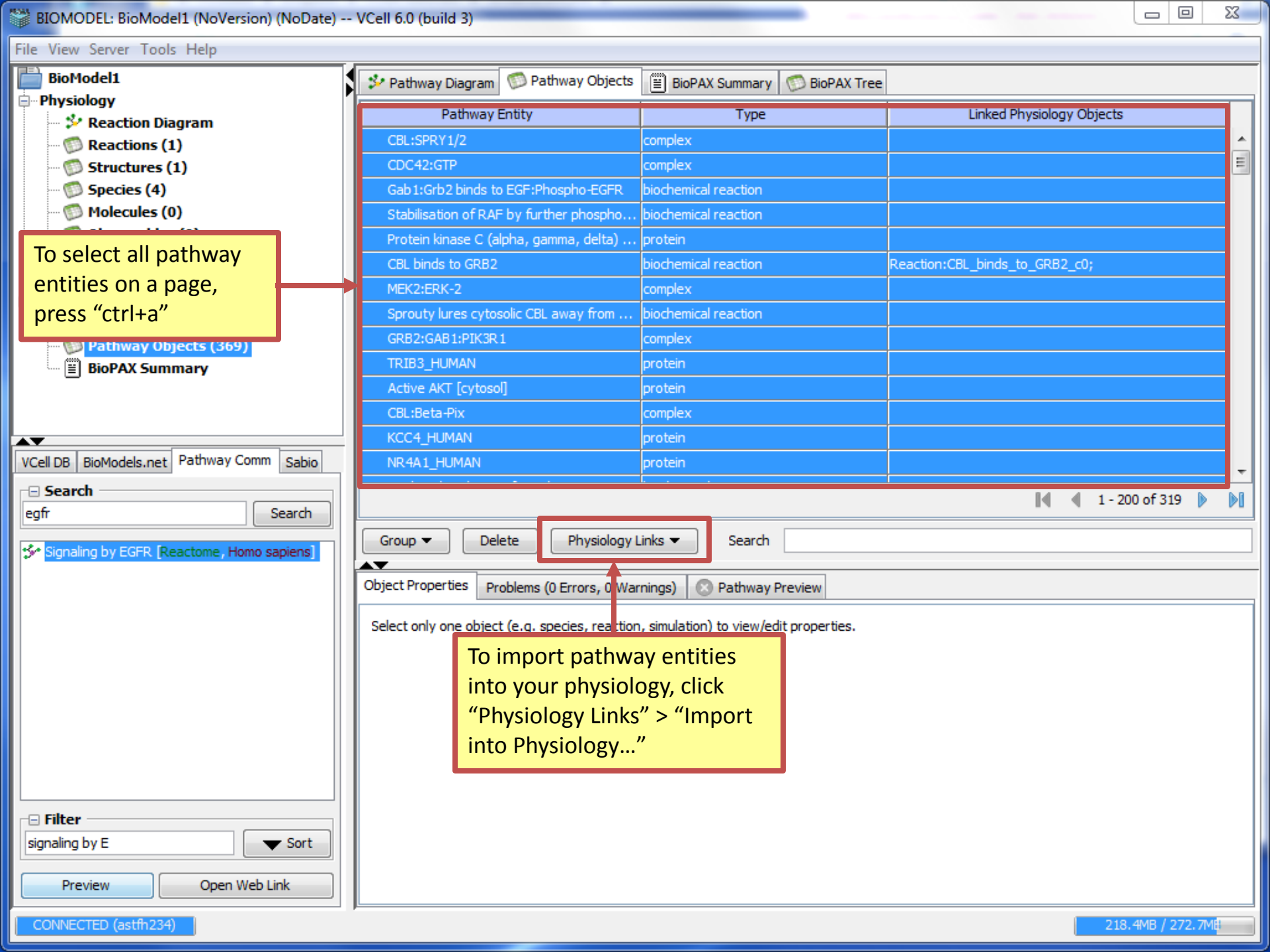

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (4)
BioPAX Summary
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
c0
s3
GRB2_c0
CBL_MAN_c0
CBL_GRB2_c0
To select all entities on a page, hit “ctrl+a”.
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Signaling by EGFR
Entity Name
Type
Imported?
Gab1:Grb2 binds to EGF:Phospho-EGFR
Stabilisation of RAF by further phosphorylation
CBL binds to GRB2
Sprouty lures cytosolic CBL away from EGFR
Dephosphorylation of PAG by SHP2
AKT phosphorylates BAD
IP3 binds to the IP3 receptor, opening the endoplasmic reticulum Ca2+ channel
biochemical reac...
1 - 200 of 319
Search
To import entities, click “Import” > “Selected Only”.
Import
CONNECTED (astfh234)
32.8MB / 50.7MB

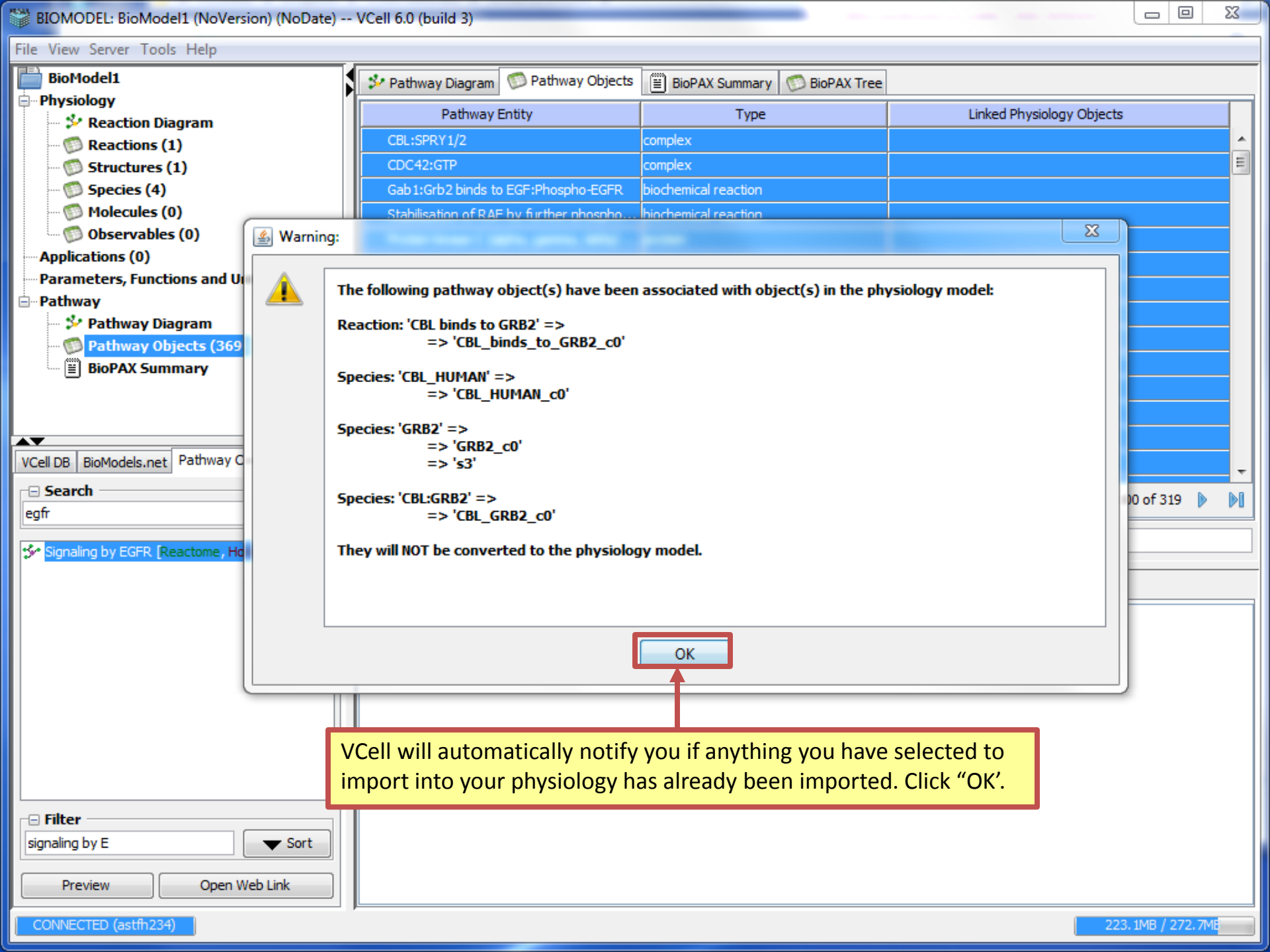

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (332)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
If a pathway is extends to multiple pages, click the right arrow icon to view the next page. Press “ctrl+a” on your keyboard and click “Import” > “Selected Only”.
Group
Delete
Physiology Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Signaling by EGFR
Entity Name
Type
Imported?
EGF:Phospho-EGFR
complex
EGF:p-6Y-EGFR:p-Y371-CBL:CIN85:Endophilin:Epsin:Eps15R:Eps15
complex
cAMP:PKA regulatory subunit
complex
GRB2:Phospho-GAB1
complex
Adenylate cyclase (Mg2+ cofactor)
complex
RAS:RAF
complex
DNA
physical entity
201 - 319 of 319
Search
Import
CONNECTED (astfh234)
134.1MB / 164.9MB

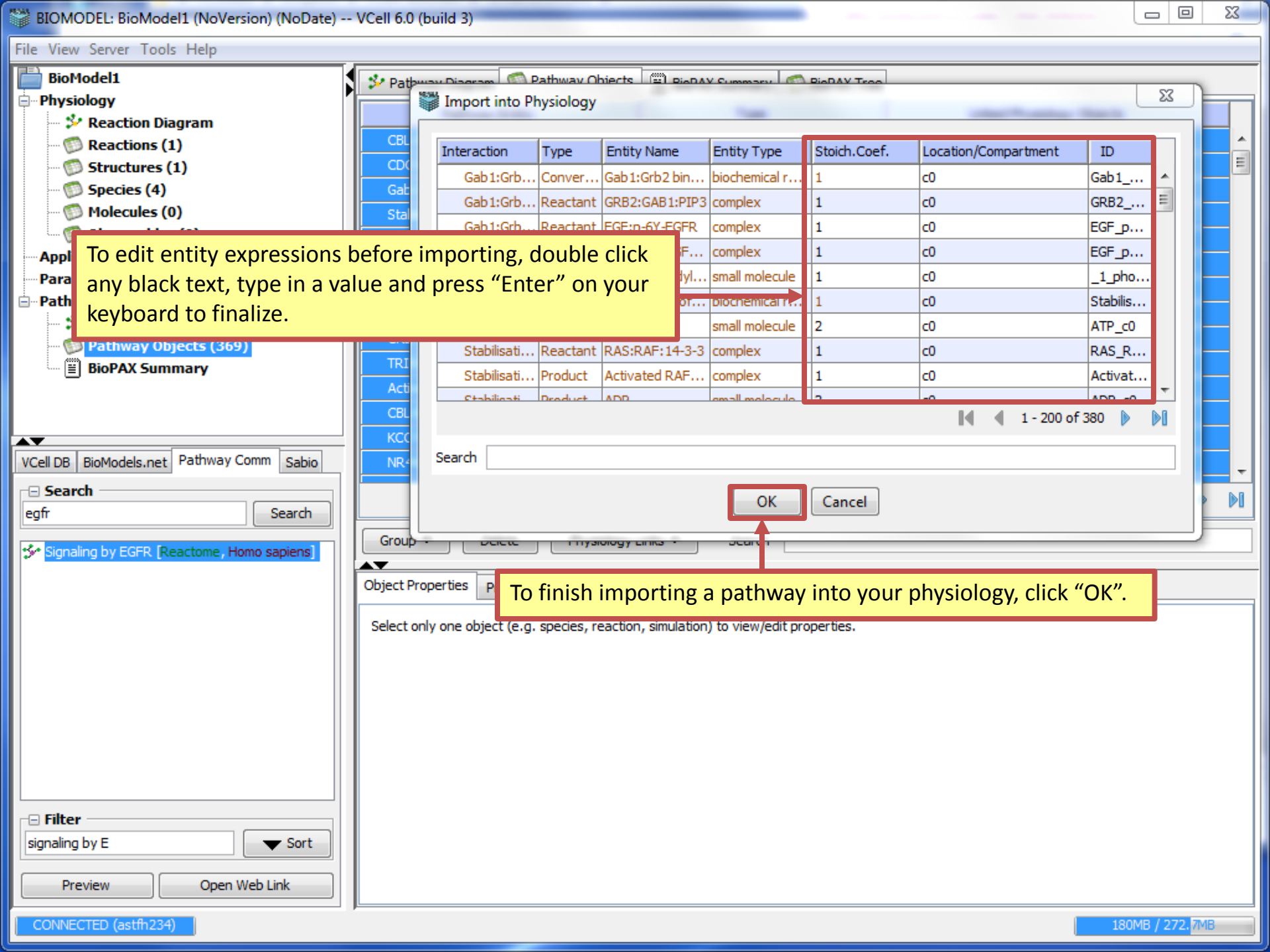

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (369)
BioPAX Summary
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Pathway Diagram
Pathway Objects
Click “Pathway Objects” to organize the entities into list form
AP2B1_HUMAN
AP2M1_HUMAN
DNA
ADAM metalloprotease [plasma membrane]
SIN1 [cytosol]
MTOR_HUMAN
Group
Delete
Physiology Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
184.1MB / 272.7MB

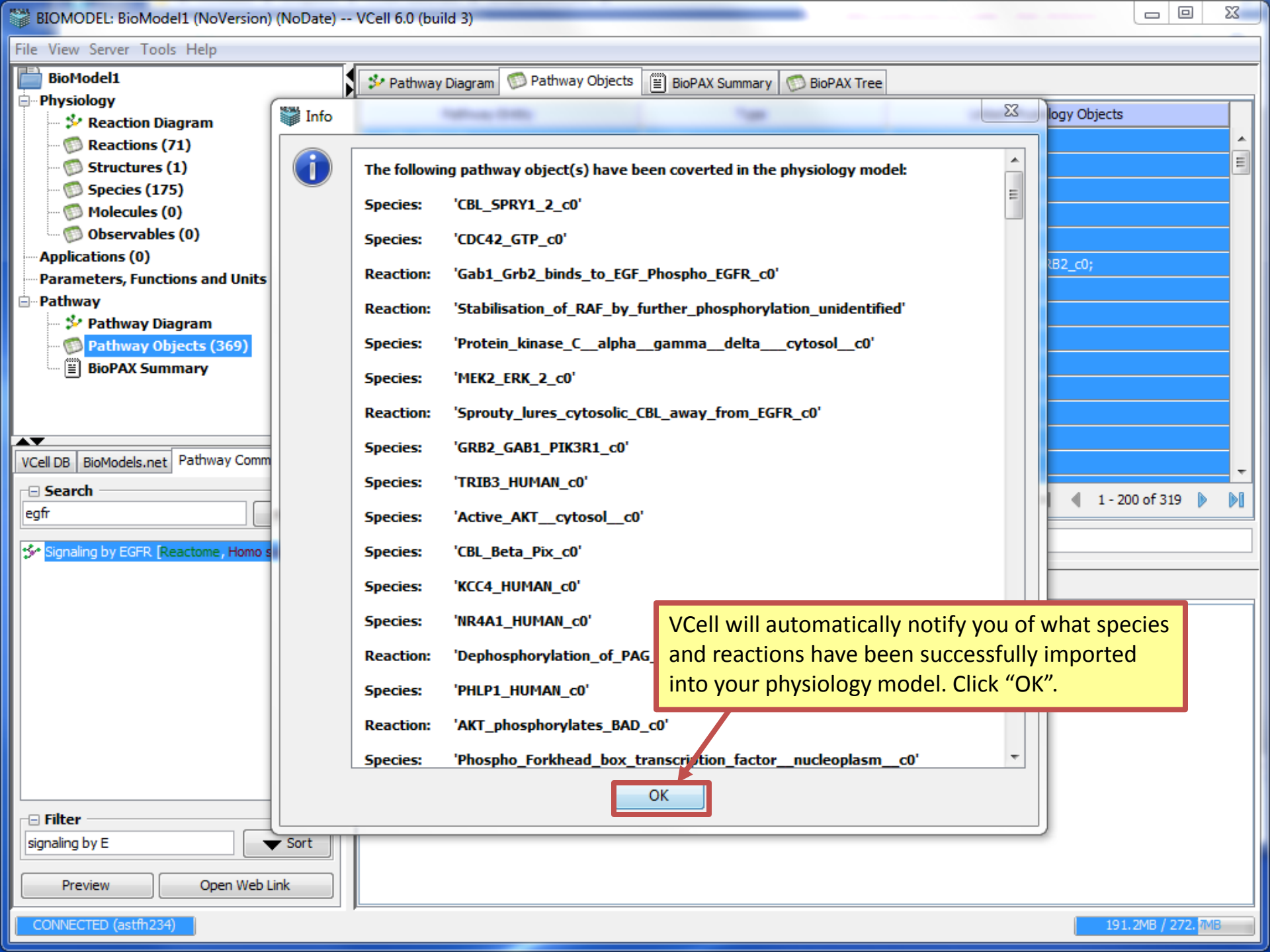

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (369)
BioPAX Summary
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
Pathway Entity
Type
Linked Physiology Objects
AKT phosphorylates p21Cip1 and p27Kip1
biochemical reaction
AKTS1_HUMAN
protein
IKKA_HUMAN
protein
Sprouty lures membrane-bound CBL aw...
biochemical reaction
Active AKT [plasma membrane]
protein
Phosphorylation of EGFR by SRC kinase
biochemical reaction
THEM4_HUMAN
protein
EGF:p-6Y-EGFR:GRB2:p-5Y-GAB1:SHP2
complex
PDK1:AKT:PIP3
complex
Phospho-AKT [plasma membrane]
protein
AKT phosphorylates IKKalpha
biochemical reaction
CBL binds and ubiquitinates phosphoryl...
biochemical reaction
MEK1:ERK-1
complex
IP3 receptor [endoplasmic reticulum me...
physical entity
201 - 319 of 319
Group
Delete
Physiology Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
Click a Pathway Object to find more Object Properties
CONNECTED (astfh234)
184.1MB / 272.7MB

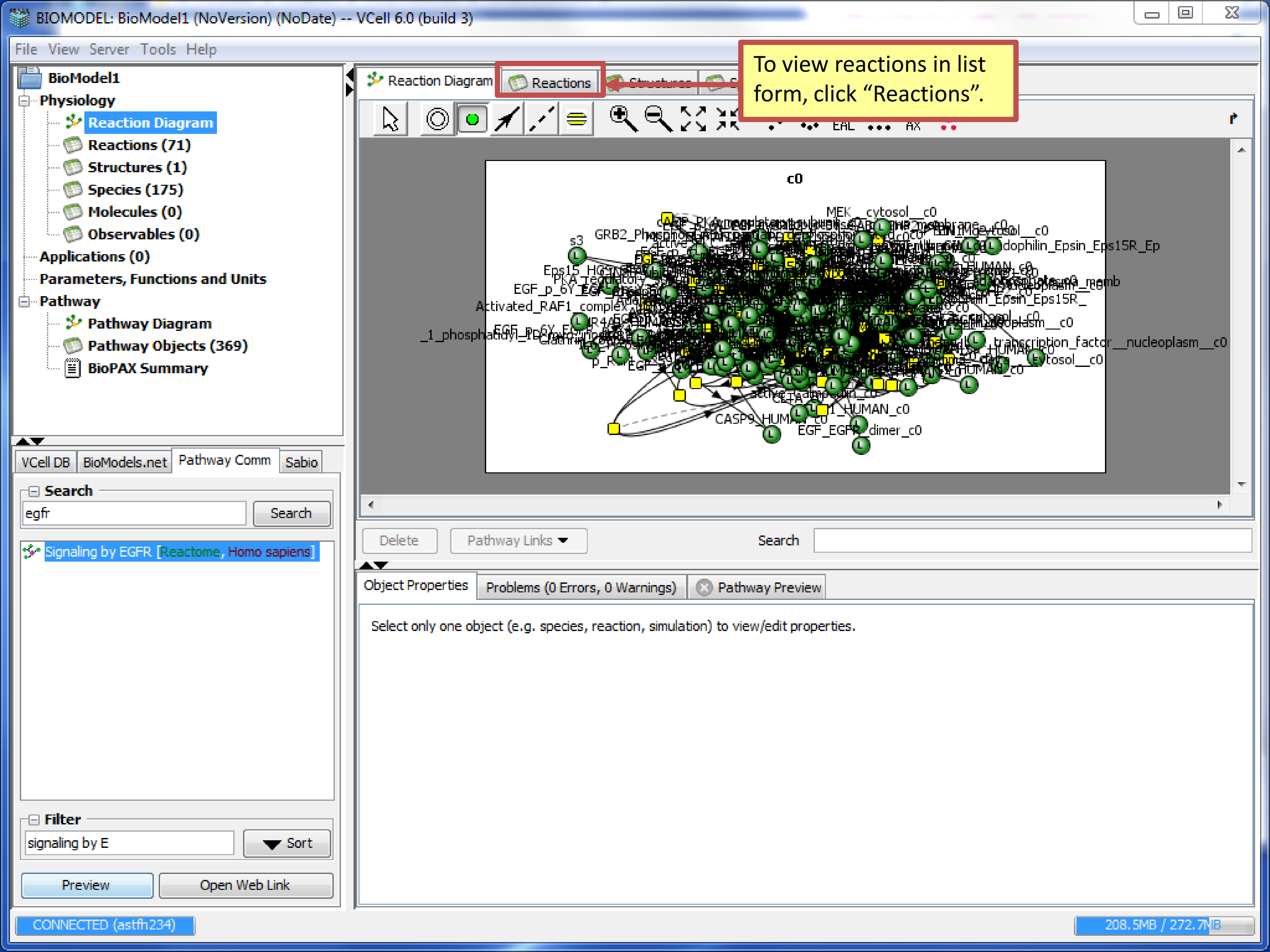

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (369)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
Pathway Entity
Type
Linked Physiology Objects
CBL binds to GRB2
biochemical reaction
Reaction:CBL_binds_to_GRB2_c0;
CBL binds and ubiquitinates phosphoryla...
biochemical reaction
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Signaling by EGFR [Reactome, Homo
Use “Search” to find a specific pathway entity, type in the name of the object next to “Search”.
Search
CBL binds
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
Filter
signaling by E
Sort
Preview
Open Web Link
CONNECTED (astfh234)
191.1MB / 272.7MB

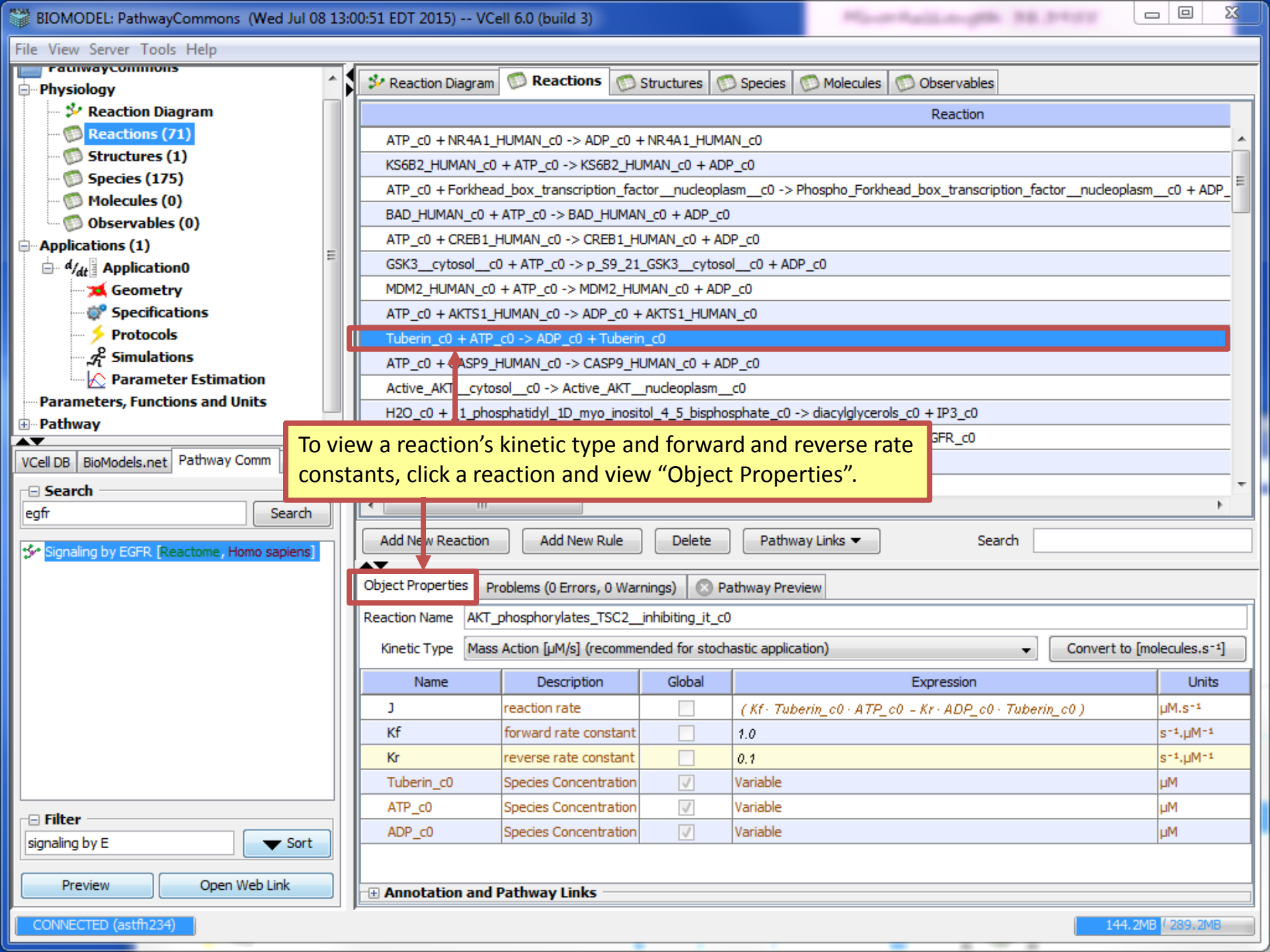

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Pathway Objects (369)
BioPAX Summary
To select all pathway entities on a page, press “ctrl+a”
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
Pathway Entity
Type
Linked Physiology Objects
CBL:SPRY1/2 complex
CDC42:GTP complex
Gab1:Grb2 binds to EGF:Phospho-EGFR biochemical reaction
Stabilisation of RAF by further phospho... biochemical reaction
Protein kinase C (alpha, gamma, delta) ... protein
CBL binds to GRB2 biochemical reaction Reaction:CBL_binds_to_GRB2_c0;
MEK2:ERK-2 complex
Sprouty lures cytosolic CBL away from ... biochemical reaction
GRB2:GAB1:PIK3R1 complex
TRIB3_HUMAN protein
Active AKT [cytosol] protein
CBL:Beta-Pix complex
KCC4_HUMAN protein
NR4A1_HUMAN protein
1 - 200 of 319
Group
Delete
Physiology Links
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
To import pathway entities into your physiology, click “Physiology Links” > “Import into Physiology…”
CONNECTED (astfh234)
218.4MB / 272.7MB

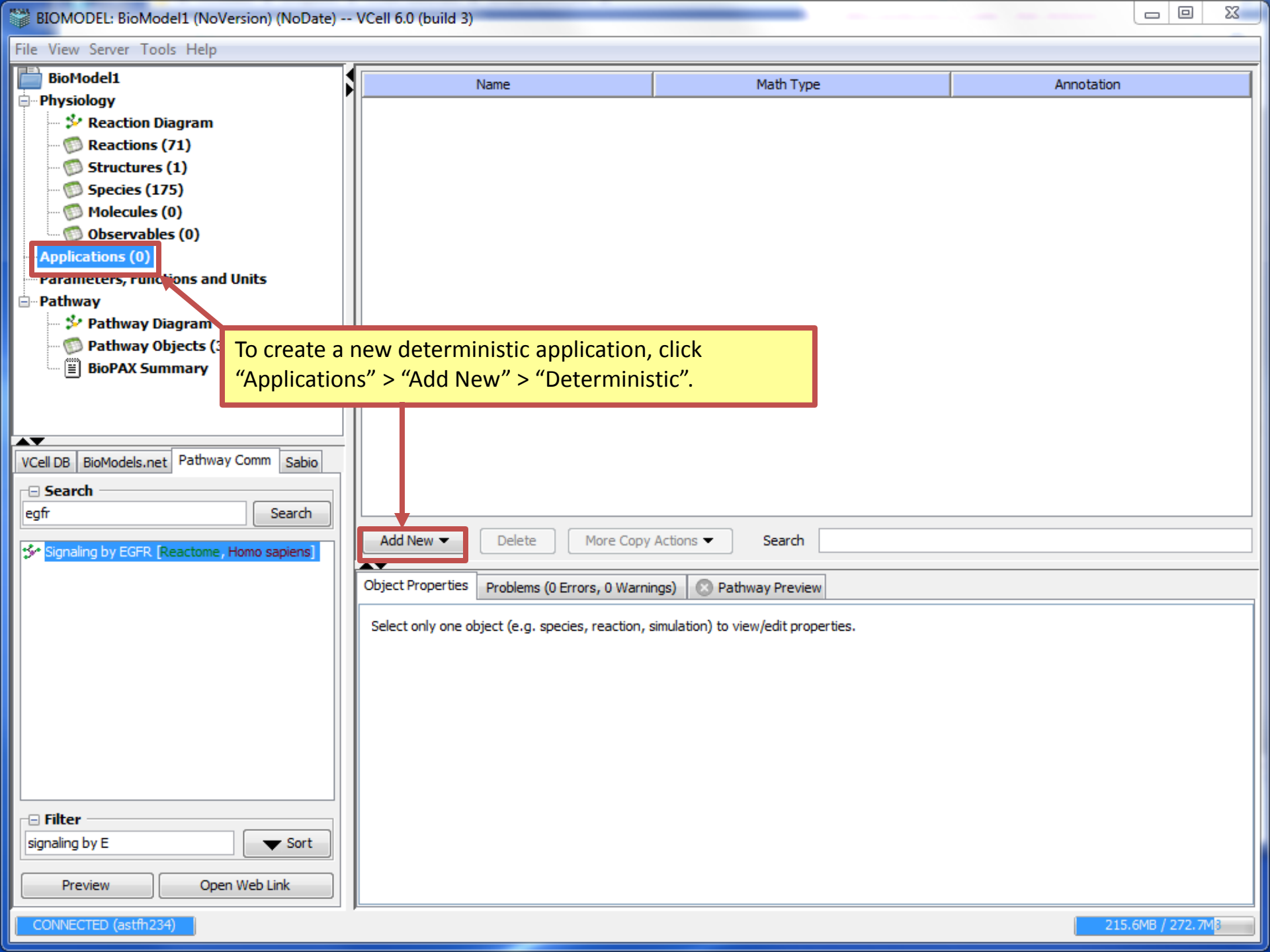

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and U
Pathway
Pathway Diagram
Pathway Objects (369
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
Pathway Entity
Type
Linked Physiology Objects
CBL:SPRY1/2
complex
CDC42:GTP
complex
Gab1:Grb2 binds to EGF:Phospho-EGFR
biochemical reaction
Stabilisation of RAF by further phospho...
biochemical reaction
Warning:
The following pathway object(s) have been associated with object(s) in the physiology model:
Reaction: 'CBL binds to GRB2' =>
=> 'CBL_binds_to_GRB2_c0'
Species: 'CBL_HUMAN' =>
=> 'CBL_HUMAN_c0'
Species: 'GRB2' =>
=> 'GRB2_c0'
=> 's3'
Species: 'CBL:GRB2' =>
=> 'CBL_GRB2_c0'
They will NOT be converted to the physiology model.
OK
0 of 319
VCell DB
BioModels.net
Pathway C
Search
egfr
Signaling by EGFR [Reactome, Ho
Filter
signaling by E
Sort
Preview
Open Web Link
CONNECTED (astfh234)
223.1MB / 272.7MB
VCell will automatically notify you if anything you have selected to import into your physiology has already been imported. Click “OK’.


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (1)
Structures (1)
Species (4)
Molecules (0)
Pathway Objects (369)
BioPAX Summary
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Import into Physiology
Interaction
Type
Entity Name
Entity Type
Stoich.Coef.
Location/Compartment
ID
Gab1:Grb...
Conver...
Gab1:Grb2 bin...
biochemical r...
1
c0
Gab1_...
Gab1:Grb...
Reactant
GRB2:GAB1:PIP3
complex
1
c0
GRB2_...
complex
1
c0
EGF_p...
complex
1
c0
EGF_p...
small molecule
1
c0
_1_pho...
1
c0
Stabilis...
small molecule
2
c0
ATP_c0
Stabilisati...
Reactant
RAS:RAF:14-3-3
complex
1
c0
RAS_R...
Stabilisati...
Product
Activated RAF...
complex
1
c0
Activat...
1 - 200 of 380
Search
OK
Cancel
To edit entity expressions before importing, double click any black text, type in a value and press “Enter” on your keyboard to finalize.
To finish importing a pathway into your physiology, click “OK”.
Object Properties
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
180MB / 272.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (71)
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (369)
BioPAX Summary
Pathway Diagram
Pathway Objects
BioPAX Summary
BioPAX Tree
Info
The following pathway object(s) have been coverted in the physiology model:
Species: 'CBL_SPRY1_2_c0'
Species: 'CDC42_GTP_c0'
Reaction: 'Gab1_Grb2_binds_to_EGF_Phospho_EGFR_c0'
Reaction: 'Stabilisation_of_RAF_by_further_phosphorylation_unidentified'
Species: 'Protein_kinase_C__alpha__gamma__delta___cytosol__c0'
Species: 'MEK2_ERK_2_c0'
Reaction: 'Sprouty_lures_cytosolic_CBL_away_from_EGFR_c0'
Species: 'GRB2_GAB1_PIK3R1_c0'
Species: 'TRIB3_HUMAN_c0'
Species: 'Active_AKT__cytosol__c0'
Species: 'CBL_Beta_Pix_c0'
Species: 'KCC4_HUMAN_c0'
Species: 'NR4A1_HUMAN_c0'
Reaction: 'Dephosphorylation_of_PAG_
Species: 'PHLP1_HUMAN_c0'
Reaction: 'AKT_phosphorylates_BAD_c0'
Species: 'Phospho_Forkhead_box_transcription_factor__nucleoplasm__c0'
OK
VCell will automatically notify you of what species and reactions have been successfully imported into your physiology model. Click “OK”.
VCell DB
BioModels.net
Pathway Comm
Search
egfr
Signaling by EGFR [Reactome, Homo s
Filter
signaling by E
Sort
Preview
Open Web Link
1 - 200 of 319
CONNECTED (astfh234)
191.2MB / 272.


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (71)
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (369)
BioPAX Summary
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
CONNECTED (astfh234)
Reaction Diagram
Reactions
To view reactions in list form, click "Reactions".
c0
Delete
Pathway Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
208.5MB / 272.7MB


BIOMODEL: PathwayCommons (Wed Jul 08 13:00:51 EDT 2015) -- VCell 6.0 (build 3)
File View Server Tools Help
Physiology
Reaction Diagram
Reactions (71)
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (1)
Application0
Geometry
Specifications
Protocols
Simulations
Parameter Estimation
Parameters, Functions and Units
Pathway
VCell DB
BioModels.net
Pathway Comm
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Reaction Diagram
Reactions
Structures
Species
Molecules
Observables
Reaction
ATP_c0 + NR4A1_HUMAN_c0 -> ADP_c0 + NR4A1_HUMAN_c0
KS6B2_HUMAN_c0 + ATP_c0 -> KS6B2_HUMAN_c0 + ADP_c0
ATP_c0 + Forkhead_box_transcription_factor__nucleoplasm__c0 -> Phospho_Forkhead_box_transcription_factor__nucleoplasm__c0 + ADP_
BAD_HUMAN_c0 + ATP_c0 -> BAD_HUMAN_c0 + ADP_c0
ATP_c0 + CREB1_HUMAN_c0 -> CREB1_HUMAN_c0 + ADP_c0
GSK3__cytosol__c0 + ATP_c0 -> p_S9_21_GSK3__cytosol__c0 + ADP_c0
MDM2_HUMAN_c0 + ATP_c0 -> MDM2_HUMAN_c0 + ADP_c0
ATP_c0 + AKTS1_HUMAN_c0 -> ADP_c0 + AKTS1_HUMAN_c0
Tuberin_c0 + ATP_c0 -> ADP_c0 + Tuberin_c0
ATP_c0 + CASP9_HUMAN_c0 -> CASP9_HUMAN_c0 + ADP_c0
Active_AKT__cytosol__c0 -> Active_AKT__nucleoplasm__c0
H2O_c0 + 1_phosphatidyl_1D_myo_inositol_4_5_bisphosphate_c0 -> diacylglycerols_c0 + IP3_c0
GFR_c0
To view a reaction's kinetic type and forward and reverse rate constants, click a reaction and view "Object Properties".
Add New Reaction
Add New Rule
Delete
Pathway Links
Search
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Reaction Name
AKT_phosphorylates_TSC2__inhibiting_it_c0
Kinetic Type
Mass Action [μM/s] (recommended for stochastic application)
Convert to [molecules.s-1]
Name
Description
Global
Expression
Units
J
reaction rate
(Kf · Tuberin_c0 · ATP_c0 - Kr · ADP_c0 · Tuberin_c0)
μM.s-1
Kf
forward rate constant
1.0
s-1.μM-1
Kr
reverse rate constant
0.1
s-1.μM-1
Tuberin_c0
Species Concentration
Variable
μM
ATP_c0
Species Concentration
Variable
μM
ADP_c0
Species Concentration
Variable
μM
Annotation and Pathway Links
CONNECTED (astfh234)
144.2MB
289.2MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (71)
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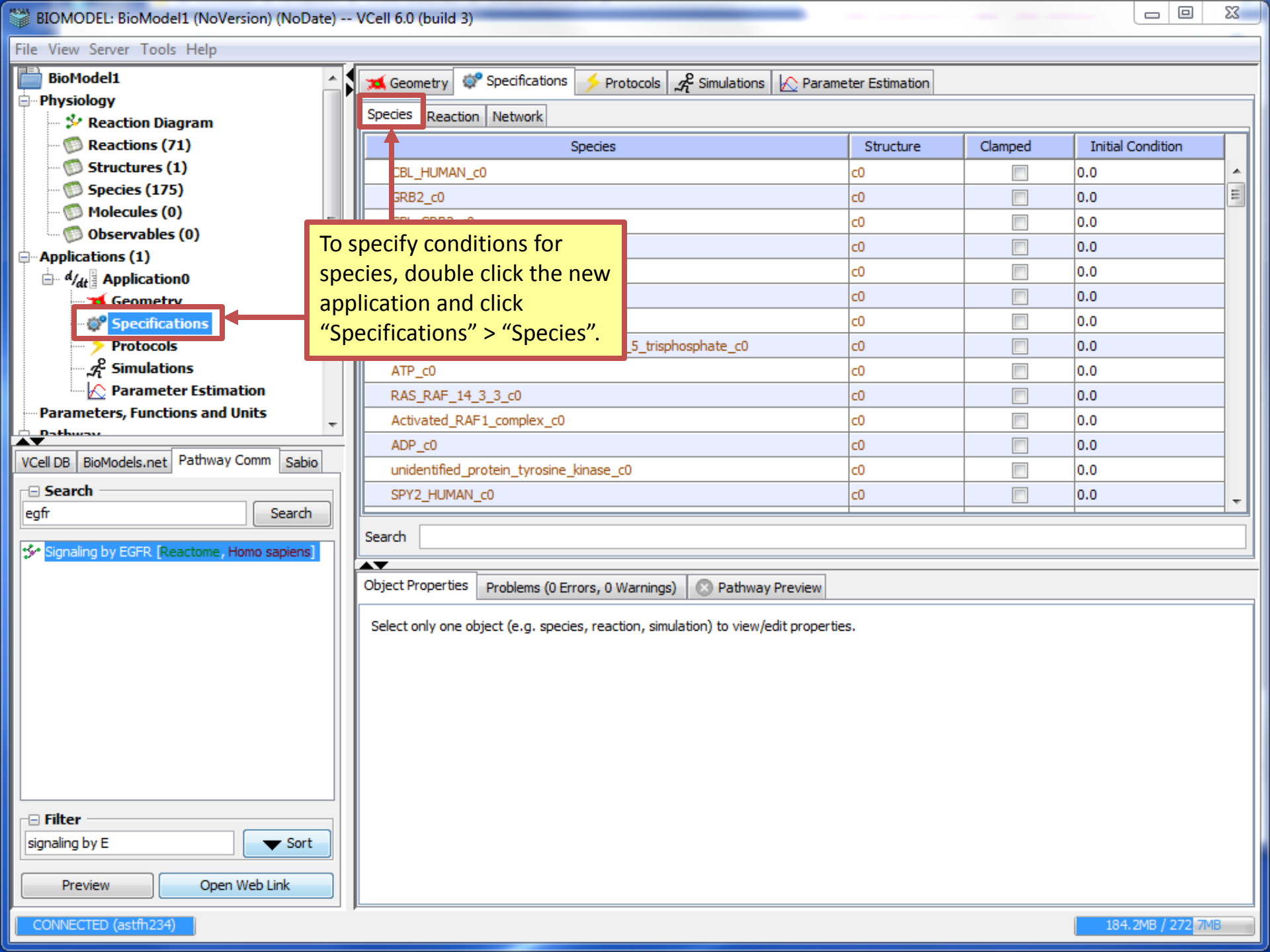
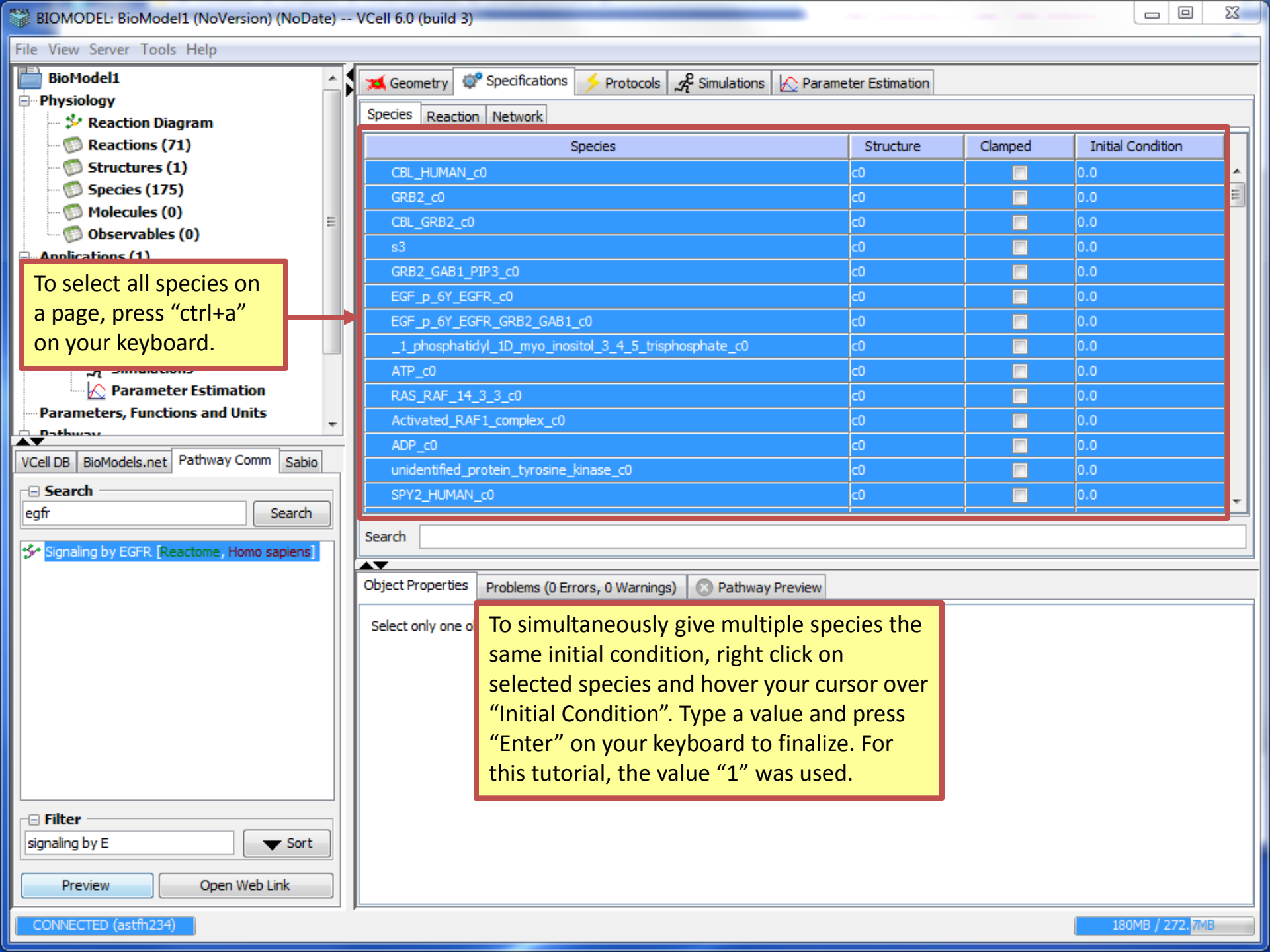
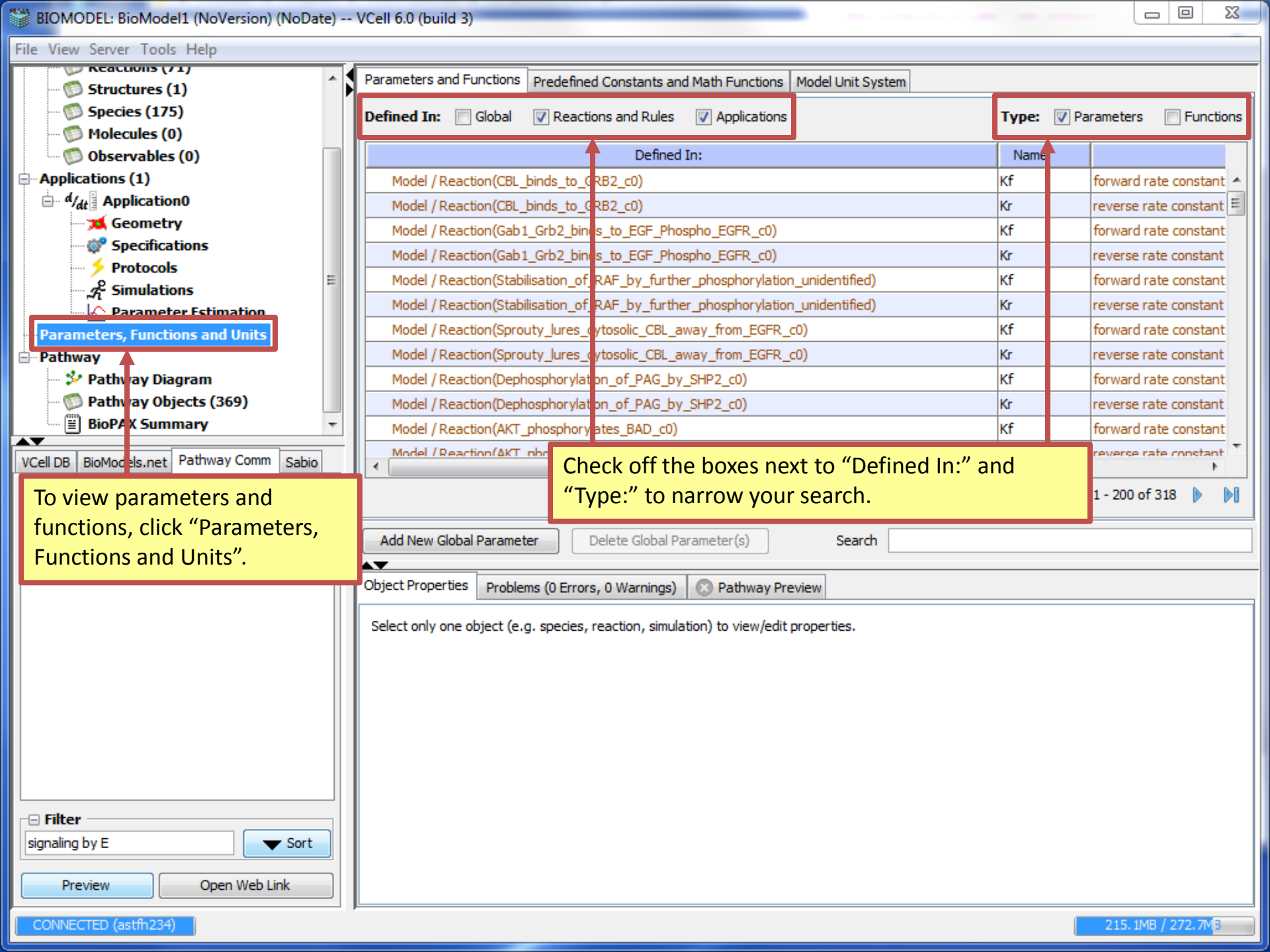
Species (175)
Molecules (0)
Observables (0)
Applications (0)
Parameters, Functions and Units
Pathway
Pathway Diagram
Pathway Objects (3
BioPAX Summary
Name
Math Type
Annotation
To create a new deterministic application, click "Applications" > "Add New" > "Deterministic".
Add New
Delete
More Copy Actions
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
215.6MB / 272.7M

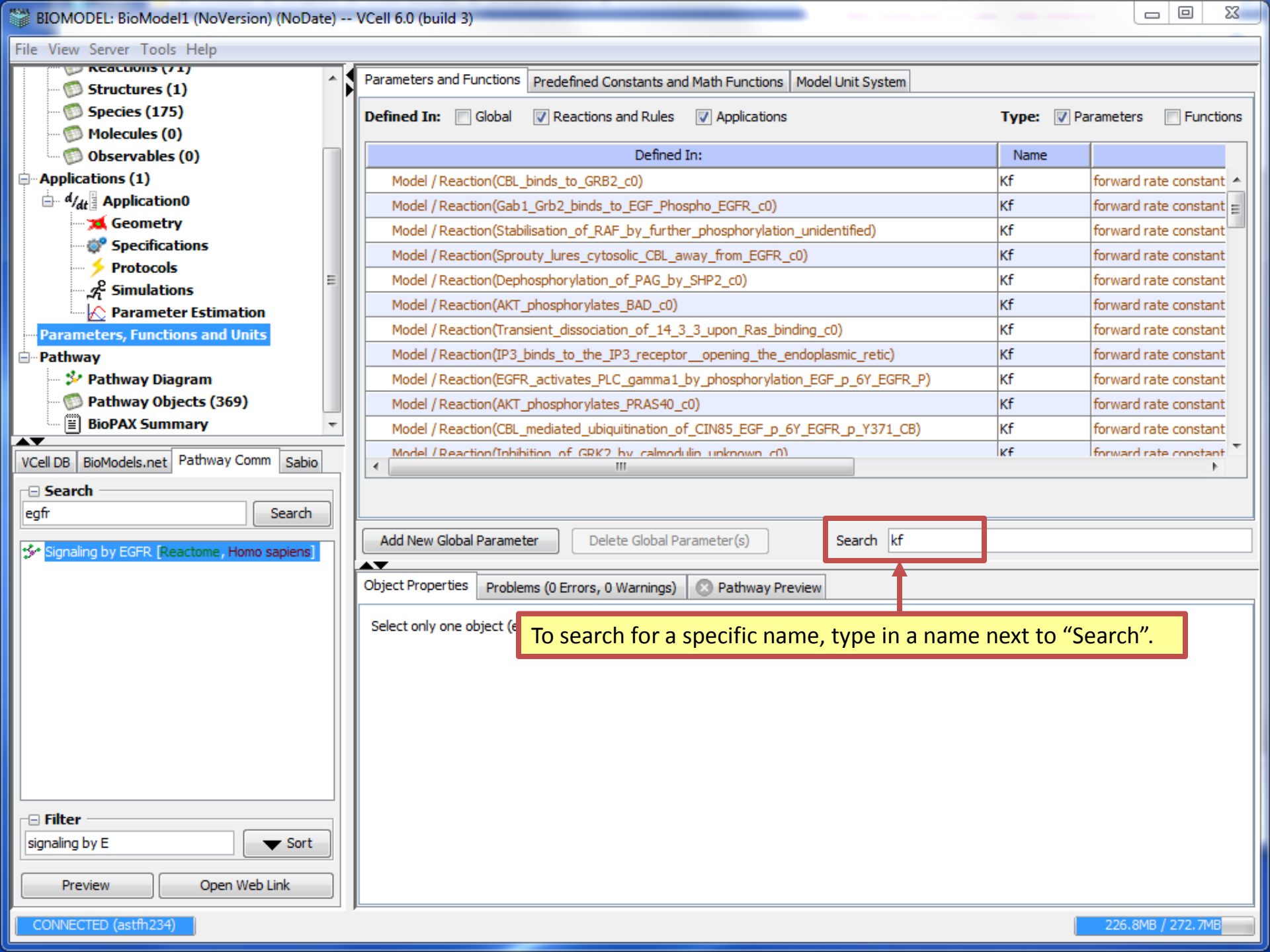

BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (71)
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (1)
Application0
Geometry
Specifications
Protocols
Simulations
Parameter Estimation
Parameters, Functions and Units
To specify conditions for species, double click the new application and click "Specifications" > "Species".
Geometry
Specifications
Protocols
Simulations
Parameter Estimation
Species
Reaction
Network
Species
Structure
Clamped
Initial Condition
CBL_HUMAN_c0
GRB2_c0
ATP_c0
RAS_RAF_14_3_3_c0
Activated_RAF1_complex_c0
ADP_c0
unidentified_protein_tyrosine_kinase_c0
SPY2_HUMAN_c0
c0
0.0
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
184.2MB / 272.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
BioModel1
Physiology
Reaction Diagram
Reactions (71)
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (1)
Parameter Estimation
Parameters, Functions and Units
To select all species on a page, press “ctrl+a” on your keyboard.
Geometry
Specifications
Protocols
Simulations
Parameter Estimation
Species
Reaction
Network
Species
Structure
Clamped
Initial Condition
CBL_HUMAN_c0 c0 0.0
GRB2_c0 c0 0.0
CBL_GRB2_c0 c0 0.0
s3 c0 0.0
GRB2_GAB1_PIP3_c0 c0 0.0
EGF_p_6Y_EGFR_c0 c0 0.0
EGF_p_6Y_EGFR_GRB2_GAB1_c0 c0 0.0
_1_phosphatidyl_1D_myo_inositol_3_4_5_trisphosphate_c0 c0 0.0
ATP_c0 c0 0.0
RAS_RAF_14_3_3_c0 c0 0.0
Activated_RAF1_complex_c0 c0 0.0
ADP_c0 c0 0.0
unidentified_protein_tyrosine_kinase_c0 c0 0.0
SPY2_HUMAN_c0 c0 0.0
Search
VCell DB
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one o
To simultaneously give multiple species the same initial condition, right click on selected species and hover your cursor over “Initial Condition”. Type a value and press “Enter” on your keyboard to finalize. For this tutorial, the value “1” was used.
CONNECTED (astfh234)
180MB / 272.7MB



To view parameters and functions, click “Parameters, Functions and Units”.

Check off the boxes next to “Defined In:” and “Type:” to narrow your search.


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (1)
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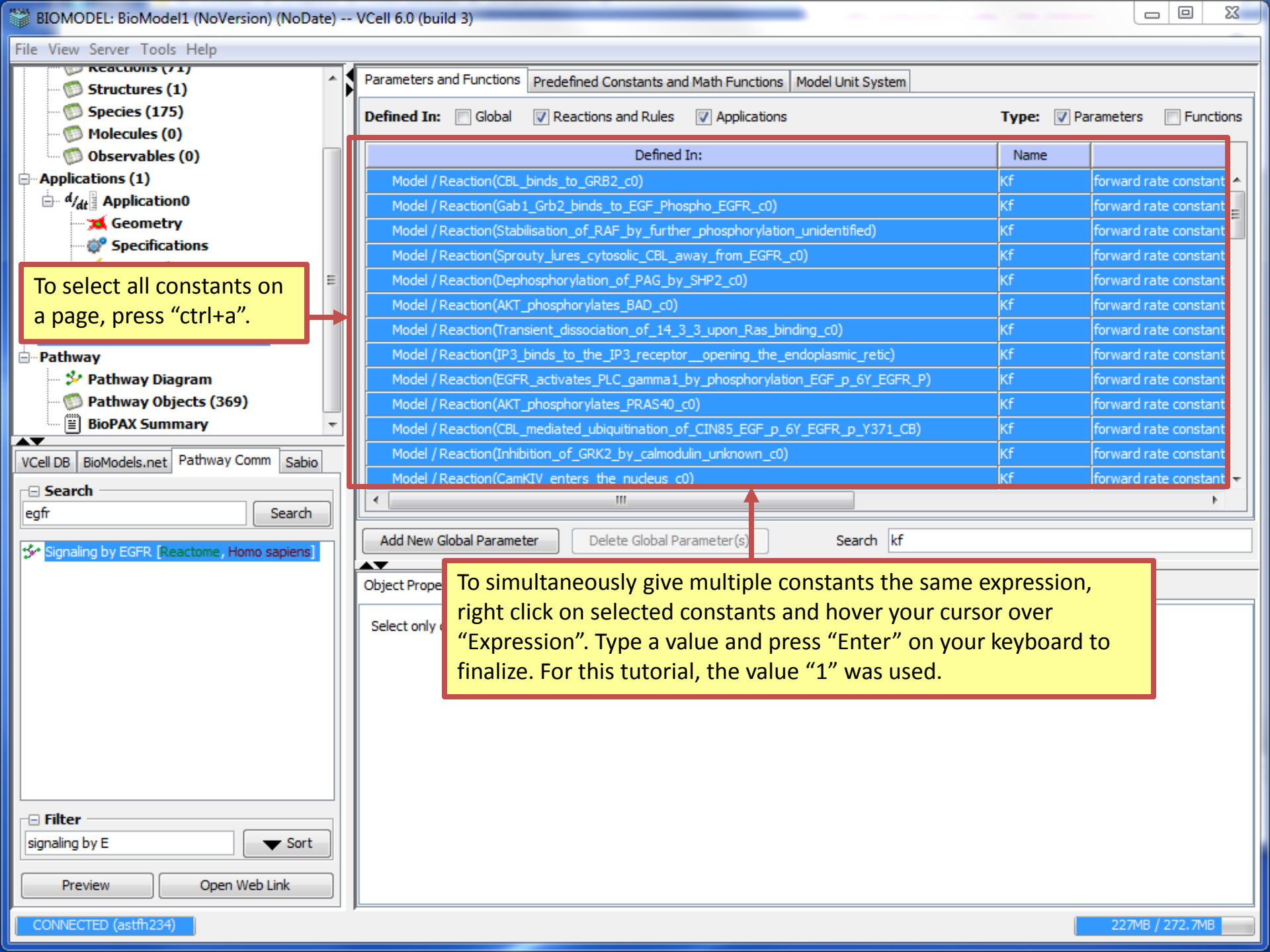
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Parameters and Functions
Predefined Constants and Math Functions
Model Unit System
Defined In:
Global
Reactions and Rules
Applications
Type:
Parameters
Functions
Defined In:
Name
Model / Reaction(CBL_binds_to_GRB2_c0)
Kf
forward rate constant
Model / Reaction(Gab1_Grb2_binds_to_EGF_Phospho_EGFR_c0)
Kf
forward rate constant
Model / Reaction(Stabilisation_of_RAF_by_further_phosphorylation_unidentified)
Kf
forward rate constant
Model / Reaction(Sprouty_lures_cytosolic_CBL_away_from_EGFR_c0)
Kf
forward rate constant
Model / Reaction(Dephosphorylation_of_PAG_by_SHP2_c0)
Kf
forward rate constant
Model / Reaction(AKT_phosphorylates_BAD_c0)
Kf
forward rate constant
Model / Reaction(Transient_dissociation_of_14_3_3_upon_Ras_binding_c0)
Kf
forward rate constant
Model / Reaction(IP3_binds_to_the_IP3_receptor__opening_the_endoplasmic_retic)
Kf
forward rate constant
Model / Reaction(EGFR_activates_PLC_gamma1_by_phosphorylation_EGF_p_6Y_EGFR_P)
Kf
forward rate constant
Model / Reaction(AKT_phosphorylates_PRAS40_c0)
Kf
forward rate constant
Model / Reaction(CBL_mediated_ubiquitination_of_CIN85_EGF_p_6Y_EGFR_p_Y371_CB)
Kf
forward rate constant
Add New Global Parameter
Delete Global Parameter(s)
Search
kf
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e
To search for a specific name, type in a name next to “Search”.
CONNECTED (astfh234)
226.8MB / 272.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
Structures (1)
Species (175)
Molecules (0)
Observables (0)
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BioPAX Summary
To select all constants on a page, press “ctrl+a”.
VCell DB
BioModels.net
Pathway Comm
Sabio
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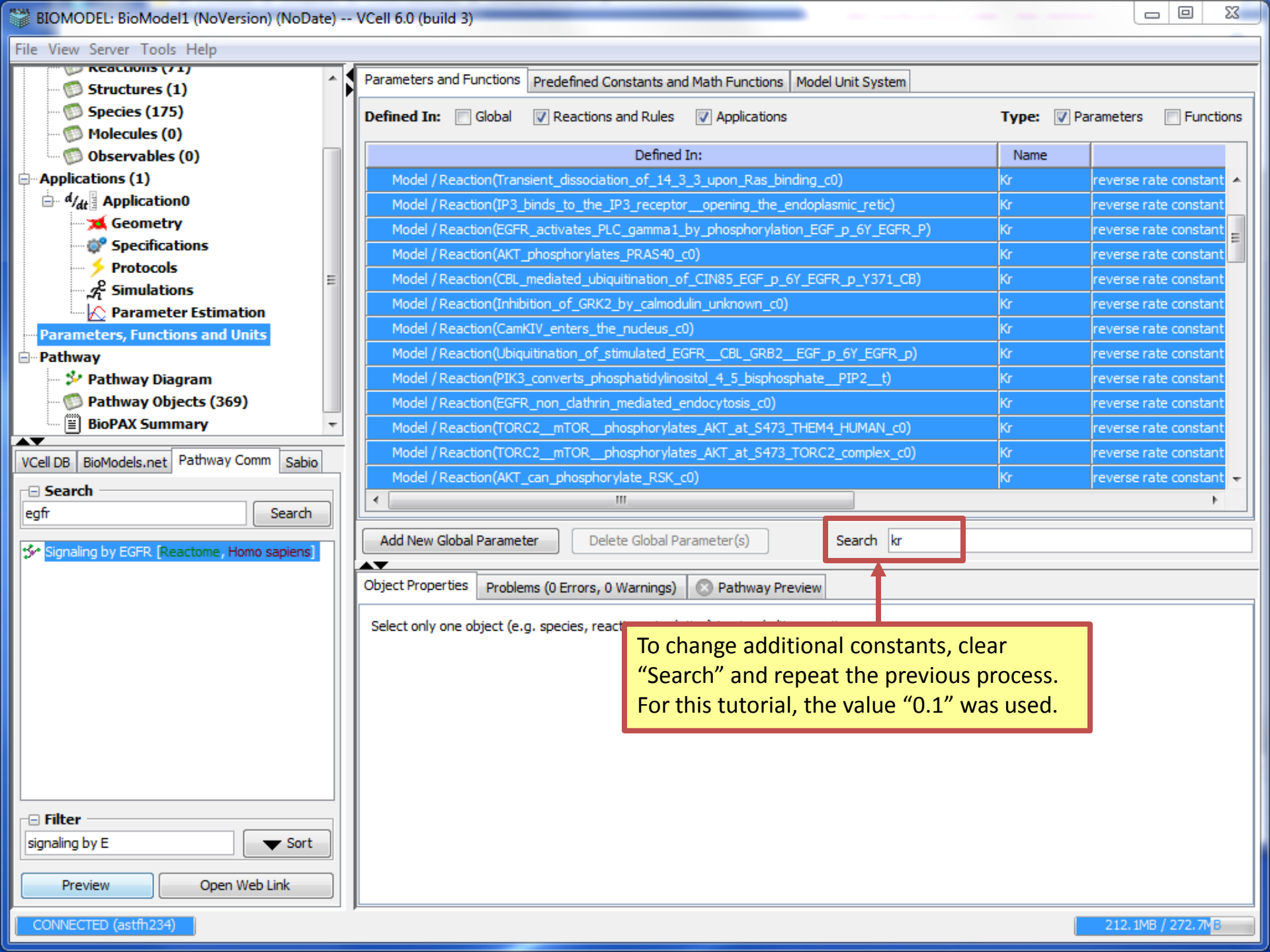
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Parameters and Functions
Predefined Constants and Math Functions
Model Unit System
Defined In:
Global
Reactions and Rules
Applications
Type:
Parameters
Functions
Defined In:
Name
Model / Reaction(CBL_binds_to_GRB2_c0)
Model / Reaction(Gab1_Grb2_binds_to_EGF_Phospho_EGFR_c0)
Model / Reaction(Stabilisation_of_RAF_by_further_phosphorylation_unidentified)
Model / Reaction(Sprouty_lures_cytosolic_CBL_away_from_EGFR_c0)
Model / Reaction(Dephosphorylation_of_PAG_by_SHP2_c0)
Model / Reaction(AKT_phosphorylates_BAD_c0)
Model / Reaction(Transient_dissociation_of_14_3_3_upon_Ras_binding_c0)
Model / Reaction(IP3_binds_to_the_IP3_receptor__opening_the_endoplasmic_retic)
Model / Reaction(EGFR_activates_PLC_gamma1_by_phosphorylation_EGF_p_6Y_EGFR_P)
Model / Reaction(AKT_phosphorylates_PRAS40_c0)
Model / Reaction(CBL_mediated_ubiquitination_of_CIN85_EGF_p_6Y_EGFR_p_Y371_CB)
Model / Reaction(Inhibition_of_GRK2_by_calmodulin_unknown_c0)
Model / Reaction(CamKIV_enters_the_nucleus_c0)
Kf
forward rate constant
Add New Global Parameter
Delete Global Parameter(s)
Search
kf
Object Prope
Select only
To simultaneously give multiple constants the same expression, right click on selected constants and hover your cursor over “Expression”. Type a value and press “Enter” on your keyboard to finalize. For this tutorial, the value “1” was used.
CONNECTED (astfh234)
227MB / 272.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
Structures (1)
Species (175)
Molecules (0)
Observables (0)
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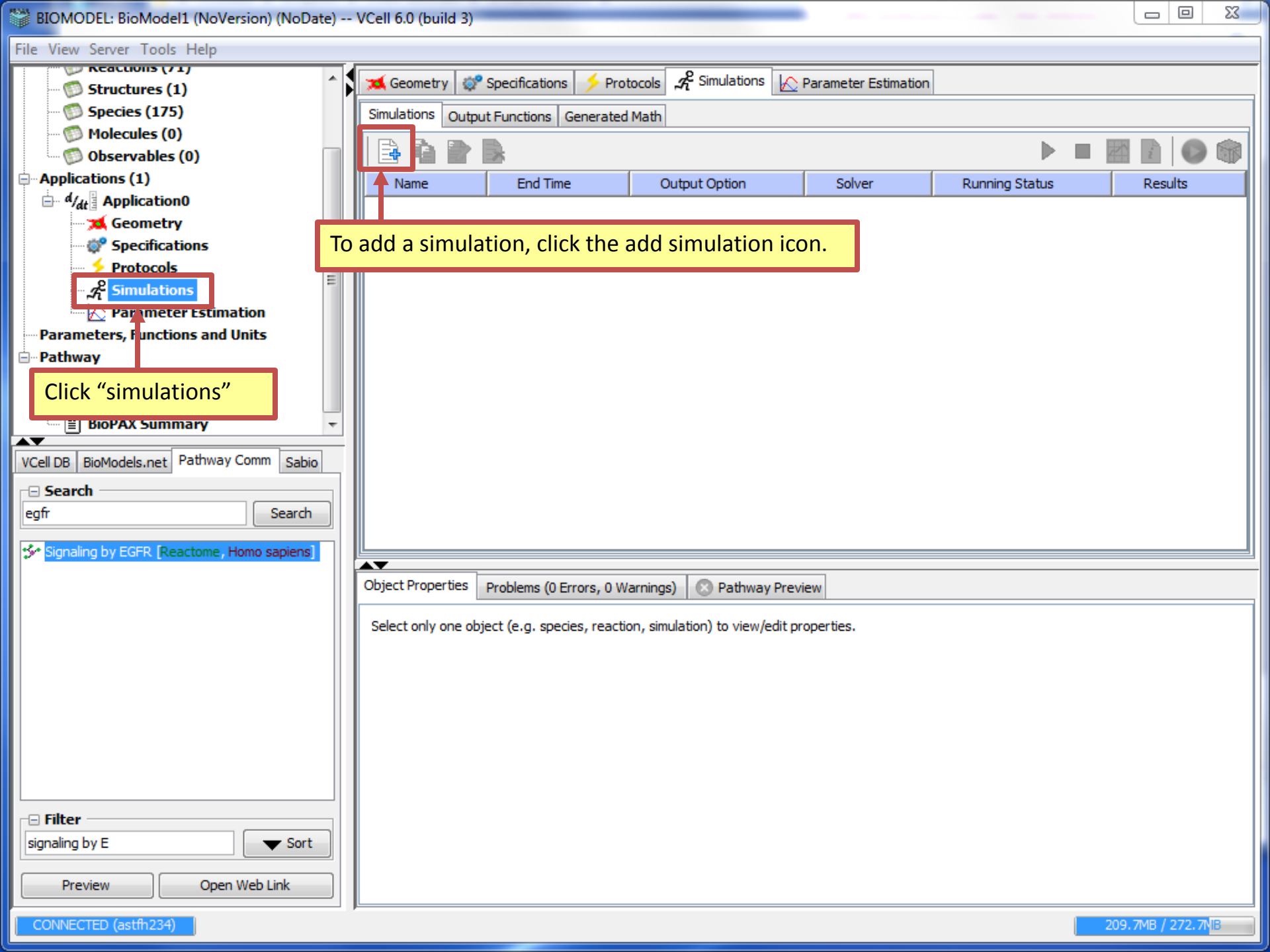
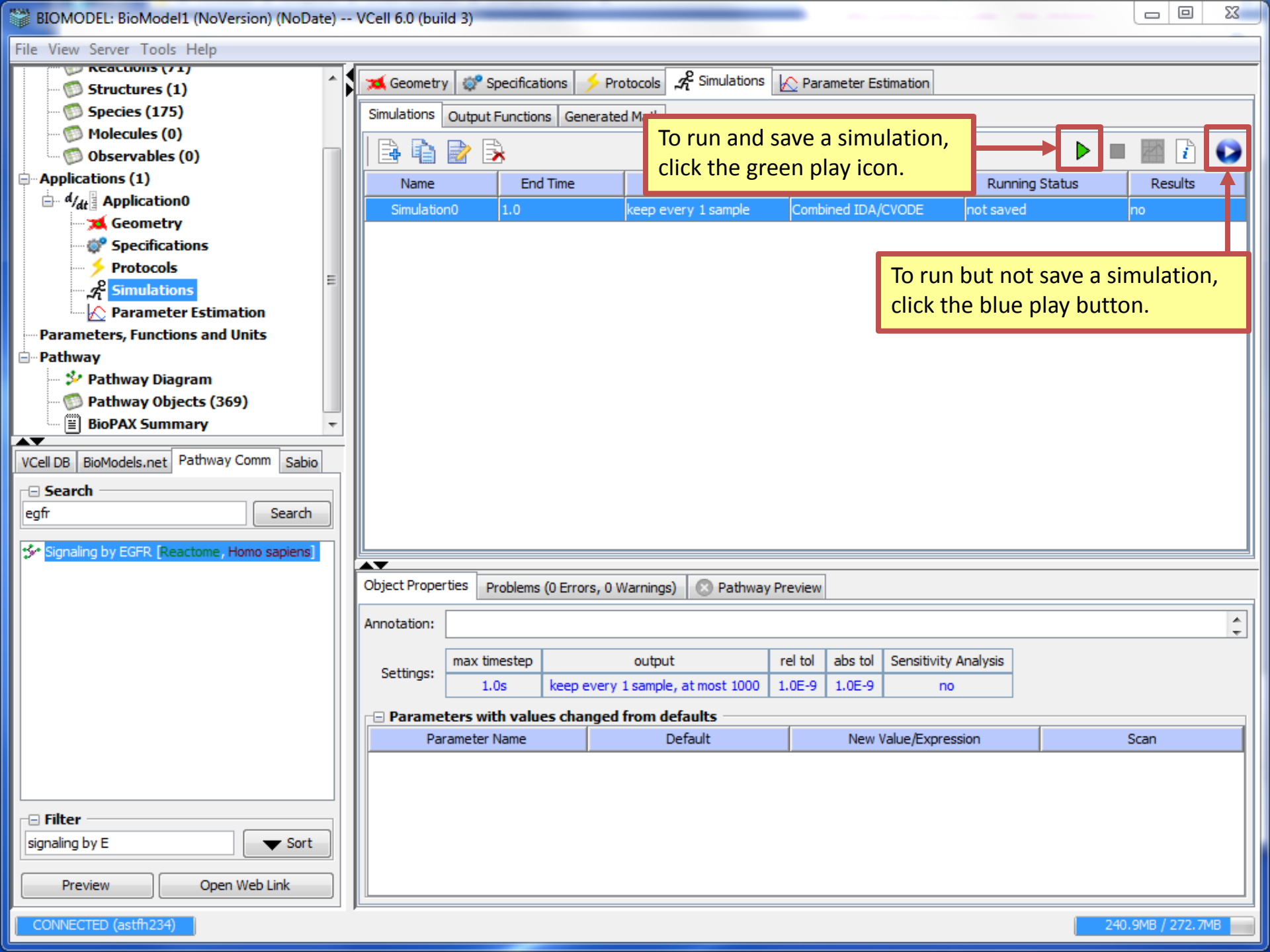
BioModels.net
Pathway Comm
Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Parameters and Functions
Predefined Constants and Math Functions
Model Unit System
Defined In:
Global
Reactions and Rules
Applications
Type:
Parameters
Functions
Defined In:
Name
Model / Reaction(Transient_dissociation_of_14_3_3_upon_Ras_binding_c0)
Kr
reverse rate constant
Model / Reaction(IP3_binds_to_the_IP3_receptor__opening_the_endoplasmic_retic)
Kr
reverse rate constant
Model / Reaction(EGFR_activates_PLC_gamma1_by_phosphorylation_EGF_p_6Y_EGFR_P)
Kr
reverse rate constant
Model / Reaction(AKT_phosphorylates_PRAS40_c0)
Kr
reverse rate constant
Model / Reaction(CBL_mediated_ubiquitination_of_CIN85_EGF_p_6Y_EGFR_p_Y371_CB)
Kr
reverse rate constant
Model / Reaction(Inhibition_of_GRK2_by_calmodulin_unknown_c0)
Kr
reverse rate constant
Model / Reaction(CamKIV_enters_the_nucleus_c0)
Kr
reverse rate constant
Model / Reaction(Ubiquitination_of_stimulated_EGFR__CBL_GRB2__EGF_p_6Y_EGFR_p)
Kr
reverse rate constant
Model / Reaction(PIK3_converts_phosphatidylinositol_4_5_bisphosphate__PIP2__t)
Kr
reverse rate constant
Model / Reaction(EGFR_non_clathrin_mediated_endocytosis_c0)
Kr
reverse rate constant
Model / Reaction(TORC2__mTOR__phosphorylates_AKT_at_S473_THEM4_HUMAN_c0)
Kr
reverse rate constant
Model / Reaction(TORC2__mTOR__phosphorylates_AKT_at_S473_TORC2_complex_c0)
Kr
reverse rate constant
Model / Reaction(AKT_can_phosphorylate_RSK_c0)
Kr
reverse rate constant
Add New Global Parameter
Delete Global Parameter(s)
Search
kr
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, react
To change additional constants, clear "Search" and repeat the previous process. For this tutorial, the value "0.1" was used.
CONNECTED (astfh234)
212.1MB / 272.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (1)
Application0
Geometry
Specifications
Protocols
Simulations
Parameter Estimation
Parameters, Functions and Units
Pathway
BioPAX Summary
Click “simulations”
Geometry Specifications Protocols Simulations Parameter Estimation
Simulations Output Functions Generated Math
Name End Time Output Option Solver Running Status Results
To add a simulation, click the add simulation icon.
VCell DB BioModels.net Pathway Comm Sabio
Search
egfr
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Select only one object (e.g. species, reaction, simulation) to view/edit properties.
CONNECTED (astfh234)
209.7MB / 272.7MB


BIOMODEL: BioModel1 (NoVersion) (NoDate) -- VCell 6.0 (build 3)
File View Server Tools Help
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (1)
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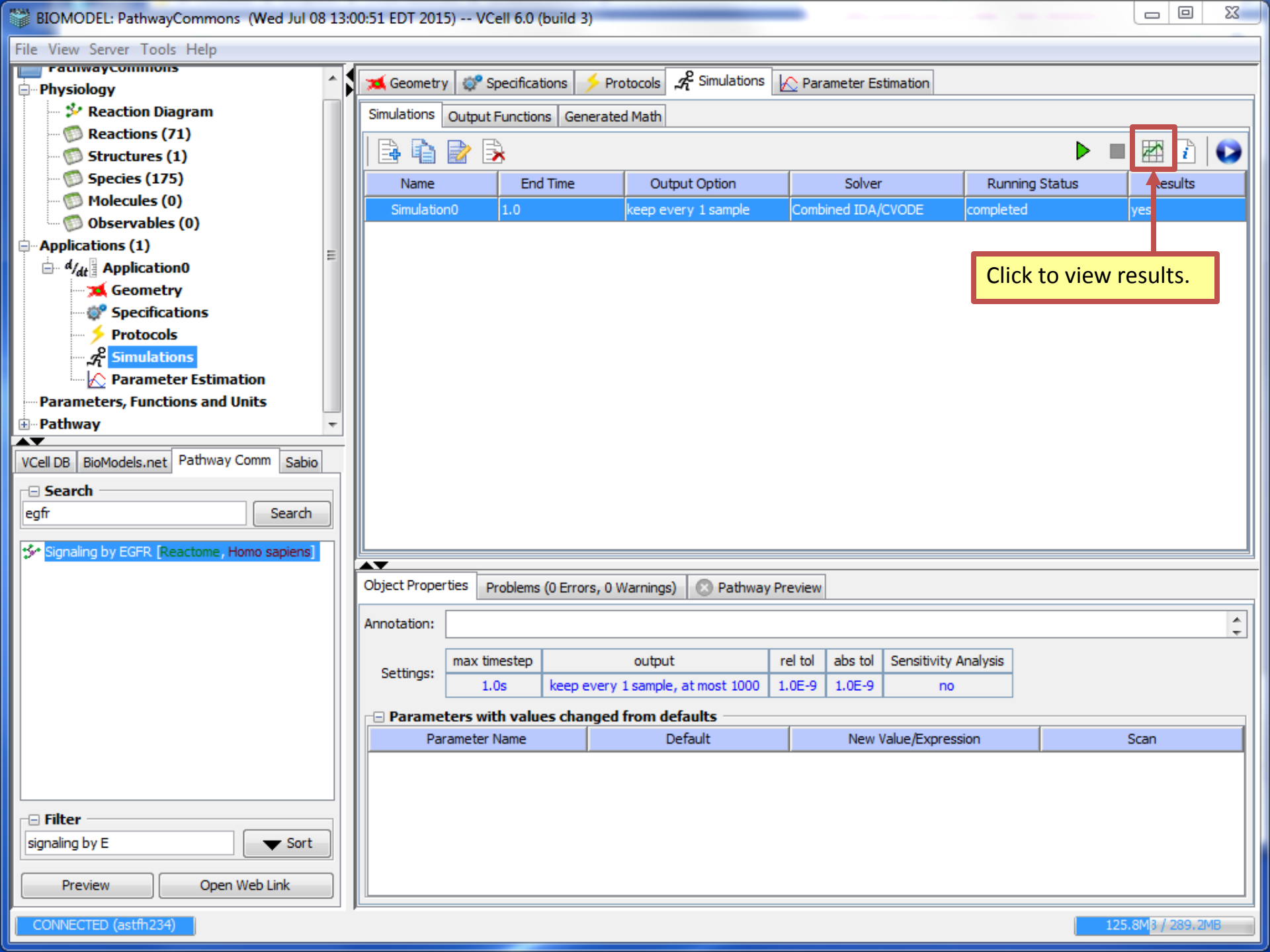
Search
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Geometry
Specifications
Protocols
Simulations
Parameter Estimation
Simulations
Output Functions
Generated Ma
To run and save a simulation, click the green play icon.
Name
End Time
Running Status
Results
Simulation0
1.0
keep every 1 sample
Combined IDA/CVODE
not saved
no
To run but not save a simulation, click the blue play button.
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Annotation:
Settings:
max timestep
output
rel tol
abs tol
Sensitivity Analysis
1.0s
keep every 1 sample, at most 1000
1.0E-9
1.0E-9
no
Parameters with values changed from defaults
Parameter Name
Default
New Value/Expression
Scan
CONNECTED (astfh234)
240.9MB / 272.7MB


BIOMODEL: PathwayCommons (Wed Jul 08 13:00:51 EDT 2015) -- VCell 6.0 (build 3)
File View Server Tools Help
Physiology
Reaction Diagram
Reactions (71)
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (1)
Application0
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Simulations
Parameter Estimation
Parameters, Functions and Units
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VCell DB
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Pathway Comm
Sabio
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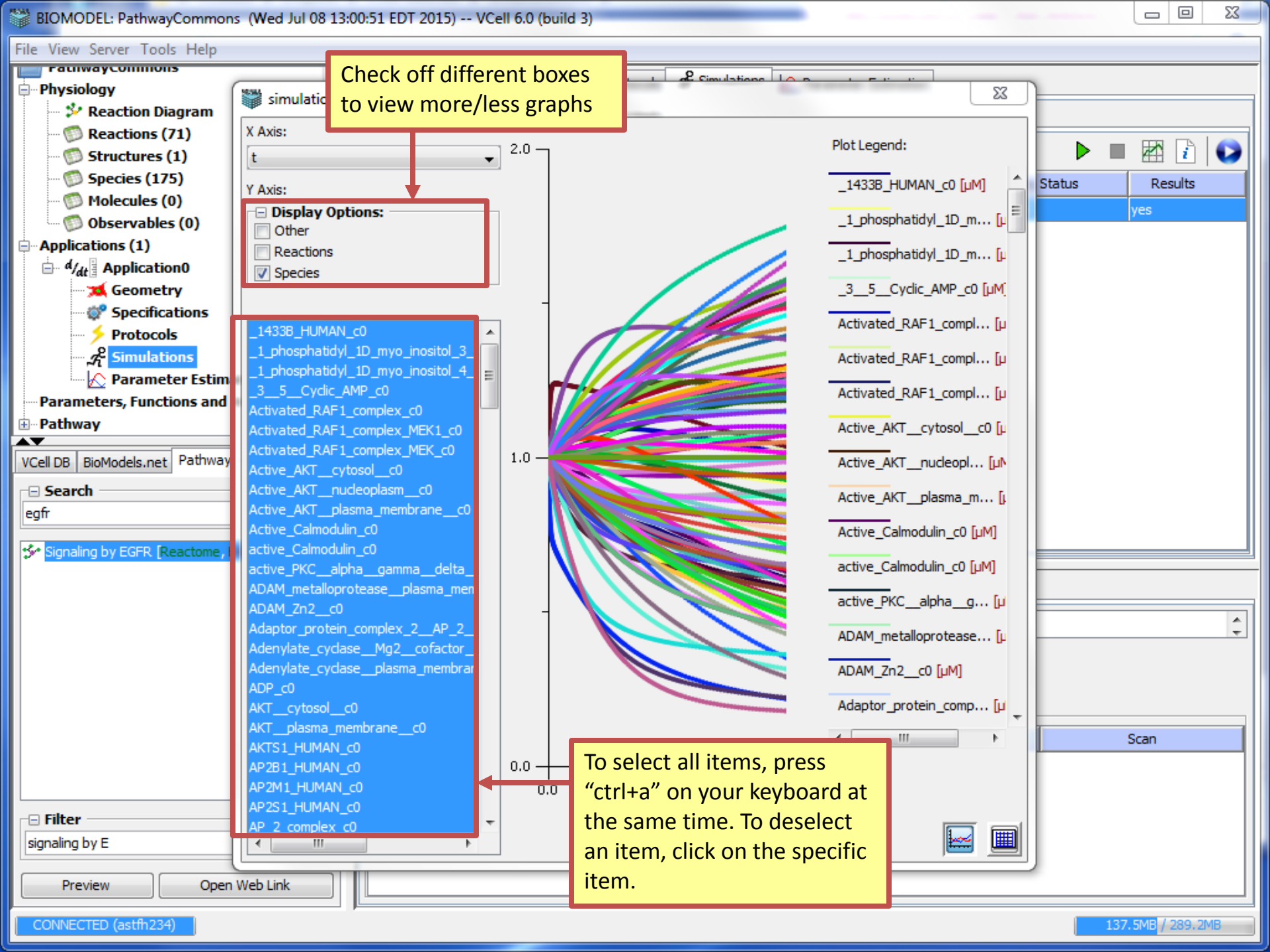
Signaling by EGFR [Reactome, Homo sapiens]
Filter
signaling by E
Sort
Preview
Open Web Link
Geometry
Specifications
Protocols
Simulations
Parameter Estimation
Simulations
Output Functions
Generated Math
Name
End Time
Output Option
Solver
Running Status
Results
Simulation0
1.0
keep every 1 sample
Combined IDA/CVODE
completed
yes
Click to view results.
Object Properties
Problems (0 Errors, 0 Warnings)
Pathway Preview
Annotation:
Settings:
max timestep
output
rel tol
abs tol
Sensitivity Analysis
1.0s
keep every 1 sample, at most 1000
1.0E-9
1.0E-9
no
Parameters with values changed from defaults
Parameter Name
Default
New Value/Expression
Scan
CONNECTED (astfh234)
125.8M 3 / 289.2MB


BIOMODEL: PathwayCommons (Wed Jul 08 13:00:51 EDT 2015) -- VCell 6.0 (build 3)
File View Server Tools Help
Physiology
Reaction Diagram
Reactions (71)
Structures (1)
Species (175)
Molecules (0)
Observables (0)
Applications (1)
Application0
Geometry
Specifications
Protocols
Simulations
Parameter Estim
Parameters, Functions and
Pathway
VCell DB
BioModels.net
Pathway
Search
egfr
Signaling by EGFR [Reactome,
Filter
signaling by E
Preview
Open Web Link
Check off different boxes to view more/less graphs
X Axis:
t
Y Axis:
Display Options:
Other
Reactions
Species
_1433B_HUMAN_c0
_1_phosphatidyl_1D_myo_inositol_3_
_1_phosphatidyl_1D_myo_inositol_4_
_3__5__Cyclic_AMP_c0
Activated_RAF1_complex_c0
Activated_RAF1_complex_MEK1_c0
Activated_RAF1_complex_MEK_c0
Active_AKT__cytosol__c0
Active_AKT__nucleoplasm__c0
Active_AKT__plasma_membrane__c0
Active_Calmodulin_c0
active_Calmodulin_c0
active_PKC__alpha__gamma__delta_
ADAM_metalloprotease__plasma_mem
ADAM_Zn2__c0
Adaptor_protein_complex_2__AP_2_
Adenylate_cyclase__Mg2__cofactor_
Adenylate_cyclase__plasma_membra
ADP_c0
AKT__cytosol__c0
AKT__plasma_membrane__c0
AKTS1_HUMAN_c0
AP2B1_HUMAN_c0
AP2M1_HUMAN_c0
AP2S1_HUMAN_c0
AP_2_complex_c0
2.0
1.0
0.0
0.0
Plot Legend:
_1433B_HUMAN_c0 [µM]
_1_phosphatidyl_1D_m...
_1_phosphatidyl_1D_m...
_3__5__Cyclic_AMP_c0 [µM]
Activated_RAF1_compl...
Activated_RAF1_compl...
Activated_RAF1_compl...
Active_AKT__cytosol__c0
Active_AKT__nucleopl...
Active_AKT__plasma_m...
Active_Calmodulin_c0 [µM]
active_Calmodulin_c0 [µM]
active_PKC__alpha__g...
ADAM_metalloprotease...
ADAM_Zn2__c0 [µM]
Adaptor_protein_comp...
To select all items, press "ctrl+a" on your keyboard at the same time. To deselect an item, click on the specific item.
Status
Results
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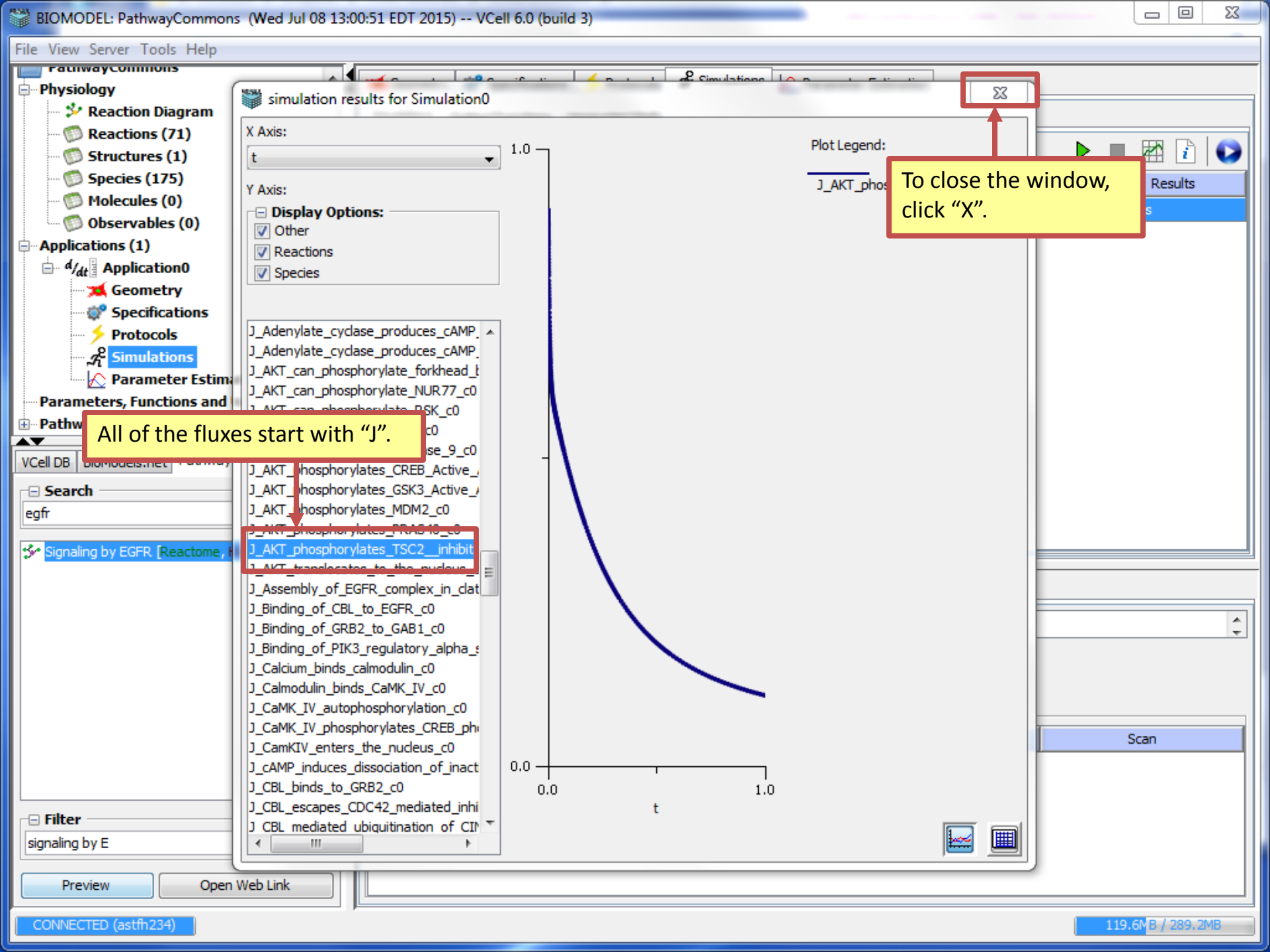
BIOMODEL: PathwayCommons (Wed Jul 08 13:00:51 EDT 2015) -- VCell 6.0 (build 3)
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Species
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J_AKT_can_phosphorylate_NUR77_c0
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J_AKT_phosphorylates_GSK3_Active_
J_AKT_phosphorylates_MDM2_c0
J_AKT_phosphorylates_TSC2__inhibit
J_Assembly_of_EGFR_complex_in_clat
J_Binding_of_CBL_to_EGFR_c0
J_Binding_of_GRB2_to_GAB1_c0
J_Binding_of_PIK3_regulatory_alpha_
J_Calcium_binds_calmodulin_c0
J_Calmodulin_binds_CaMK_IV_c0
J_CaMK_IV_autophosphorylation_c0
J_CaMK_IV_phosphorylates_CREB_ph
J_CamKIV_enters_the_nucleus_c0
J_cAMP_induces_dissociation_of_inact
J_CBL_binds_to_GRB2_c0
J_CBL_escapes_CDC42_mediated_inhi
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To close the window, click “X”.
All of the fluxes start with “J”.
Results
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