caMOD 2.5

User's Guide

National Cancer Institute

Center for Biomedical Informatics
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USING THE caMOD USER'S GUIDE

This chapter introduces you to the *caMOD User's Guide.*

Topics in this chapter include:

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- *Organization of this Guide* on this page
- *Document Text Conventions* on page 2

Introduction to the caMOD User's Guide

The *caMOD 2.4 User's Guide* is the companion documentation to the caMOD software application. This guide provides an overview of caMOD and explains how to use the software.

Organization of this Guide

If you are new to caMOD, read this brief overview, which explains what you will find in each chapter.:

Chapter 1 Getting Started with caMOD—This chapter provides brief overview of the caMOD infrastructure, with brief descriptions of the cancer models database, the data submission and cancer models search features in caMOD, as well as system function administration. Additionally, this chapter provides details about creating a new user account, launching caMOD, navigating the interface, accessing online help and/or application support, should help be needed in using the software.

Chapter 2 Submitting and Editing Models—This chapter describes how to submit and edit models in caMOD.

Chapter 3 Searching the caMOD Database—This chapter describes the process for searching the caMOD database.

Chapter 4 caMOD Administration—This chapter describe the functions, roles, responsibilities and permissions related to administration in caMOD.

Index—This section of the guide provides a complete index.

Document Text Conventions

The following table illustrates how text conventions are represented in this guide. The various typefaces differentiate between regular text and menu commands, keyboard keys, toolbar buttons, dialog box options and text that you type.

Convention	*Description*	*Example*
Bold & Capitalized Command **> Capitalized command**	Indicates a Menu command or a Sequential Menu commands	**Admin > Refresh**
TEXT IN SMALL CAPS	Keyboard key that you press	Press ENTER
TEXT IN SMALL CAPS + TEXT IN SMALL CAPS	Keyboard keys that you press simultaneously	Press SHIFT + CTRL, and then release both.
Boldface type	Options that you select in dialog boxes or drop-down menus. Buttons or icons that you click.	In the Open dialog box, select the file and click the **Open** button.
Italics	Used to reference other documents, sections, figures, and tables.	*caCORE Software Development Kit 1.0 Programmer's Guide*
Italic boldface monospace type	Text that you type	In the New Subset text box, enter ***Proprietary Proteins.***
Note:	Highlights a concept of particular interest	**Note:** This concept is used throughout the document.
Warning!	Highlights information of which you should be particularly aware.	**Warning!** Deleting an object will permanently delete it from the database.

GETTING STARTED WITH caMOD

This chapter introduces you to the caMOD interface and its navigation as well as to global operations used in all of the caMOD viewing windows.

Topics in this chapter include:

- *Introduction to caMOD 2.5* on this page

- *Creating a New User Account* on page 5

- *Logging into caMOD* on page 6

- *Using Online Help* on page 7

- *What's New in caMOD* on page 8

- *Submit and Edit Models Page* on page 8

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Introduction to caMOD 2.5

Cancer models that recapitulate many aspects of the genesis, progression, and clinical course of human cancers are valuable resources to cancer researchers engaged in a variety of basic, translational, clinical, and epidemiological investigations. The NCI Mouse Models of Human Cancers Consortium (MMHCC) is a collaborative program designed to derive and characterize animal models, and to generate resources, information, and innovative approaches to the application of animal models in cancer research.

The cancer models database (caMOD) is a web-based resource that provides information about rodent and many other animal models for human cancer to the public research community.

caMOD provides the following key capabilities to its users:

- **Data Submission**--Data in caMOD are extracted from the public scientific literature by curators and verified by the scientists who generated or worked with the models, or they are directly submitted by scientists. See *Submitting Models* on page 34 for more information.

- **Cancer Model Search**--Users can retrieve information about the making of models, their genetic descriptions, histopathology, derived cell lines, associated images, carcinogenic interventions, microarray data, and therapeutic trials in which the models were used. caMOD provides links to PubMed for associated publications and other resources such as mouse repositories, detailed information about altered gene, pathway affected, and information about human clinical trials that utilize the same compounds as the pre-clinical trials in the animal models. See *caMOD Database Search Overview* on page 11 for more information.

- **System Function Administration**--The Admin function provides services for user registration, review of submitted models and database management. See *Chapter 4 caMOD Administration* for more information.

caMOD is accessible at: http://cancermodels.nci.nih.gov.

caMOD Data

The caMOD data set includes data from the Mouse Tumor Biology Database (MTB). The data were courteously provided by our colleagues of the MTB team. Our special thanks go to Dr. Janan Eppig, Debbie Krupke, and Matthew Vincent. The Mouse Tumor Biology Database is part of the Mouse Genome Informatics program at the Jackson Laboratory, Bar Harbor, Maine. It can be found on the World Wide Web at http://www.informatics.jax.org.

Additional information about MTB has been published:

Näf D, Krupke DM, Sundberg JP, Eppig JT, Bult CJ. 2002. The mouse tumor biology database: a public resource for cancer genetics and pathology of the mouse. Cancer Res 62(*5*):1235-40.

caMOD Welcome and Login Page Tasks

In the caMOD welcome and login page, you can:

- Learn about the caMOD search and/or submit models features by reading the text about each.

- Launch a database search without being logged in. You can perform simple or advanced searches.

- Register for a new user account.

- Log in with an existing user account

- Access caMOD Quick Links (hypertext links in the upper left hand corner of the viewer)

- Open caMOD Online Help by clicking the **Help** hypertext link

- View What's New in caMOD

Note: To submit data to the caMOD database, you must have a user account.

Creating a New User Account

Users of caMOD can fall into one of two categories:

Guest User

The Guest User is any user without a valid system username and password. Guest users can search the cancer models database for public data. See *caMOD Database Search Overview* on page 11 for more information.

Registered User

The Registered User is any user with a valid system username and password. This user is also called a Public Member: a registered user with no administrative functions.

To register a new user from the caMOD welcome and login page, follow these steps:

1. Click the **Register** button.

2. In the registration form that opens (*Figure 1.1*), enter the required information. Items with an asterisk are required fields.

* indicates a required field

Register for an account	
* **Institute / Organization**	
* **First Name**	
* **Last Name**	
* **Phone**	
* **Email**	
Check if you are a principal investigator / lab chief	☐
* If you are not a principal investigator / lab chief, select your principal investigator from the list. If your principal investigator is not in the list, please fill in information below.	▼
* **Principal Investigator First Name**	
* **Principal Investigator Last Name**	
* **Principal Investigator E-mail**	

Submit   Cancel

Figure 1.1 Fields for registering a new user

- º *Institute/Organization

- º *First Name

- º *Last Name

- º *Phone

- º *Email

- º **Principal Investigator**--check if you are the project PI.

  If you are not the PI, select your Principal Investigator from the drop-down list. If the person is not on the list, enter the following information:

- ○ *Principal Investigator--**First Name**
- ○ *Principal Investigator--**Last Name**
- ○ *Principal Investigator--**email**

3. Click the **Submit** button to execute the submission of the user information. Click **Cancel** to return you to the login screen.

Once you have submitted your entry form, it is forwarded to the NCICB Application Support team. They create your new user account, and send you an email with your login information for the new account.

Logging into caMOD

When you click the URL http://cancermodels.nci.nih.gov to access caMOD and indicate your agreement on the LEGAL RULES OF THE ROAD page, the login page displays (*Figure 1.2*).

Figure 1.2 caMOD login page

1. Enter the login information, the ID and Password. Click the **Login** button.

2. If you do not have a Login ID nor Password, click the **Register** button to apply for a user account. For more information, see *Creating a New User Account* on page 5.

User Settings

Once you log into caMOD, a list of links appears on the left sidebar of the Submit and Edit page. Your current login information and user permissions are listed at the bottom of this list.

1. Click the **User Settings** link to open the User Settings dialog box where you can review and/or modify your registered user information.

2. Click **Submit** to enter the new information. Click **Cancel** to abort the operation.
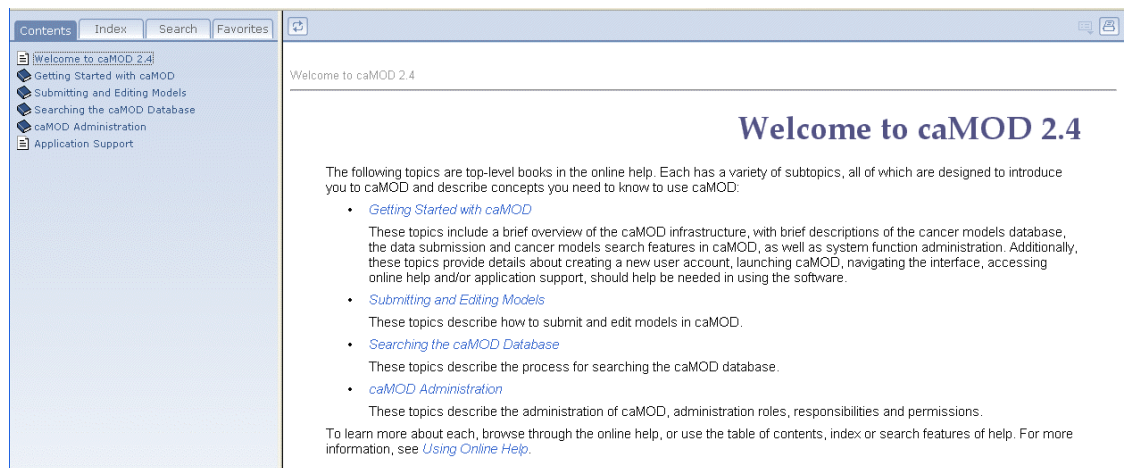
Using Online Help

The online help explains how to use all of the features of the caMOD software.

To access online help, use any of the following methods:

- Click the **Help** hypertext link in the left sidebar to open the complete online help project.

- Click the **Help** menu option in the right of the gray bar just below the caMOD logo on the viewer screen.

  Note: You can access online help without being logged into caMOD.

- Click the **Help** button that displays on the caMOD login form (*Figure 1.2*).

- Click with your mouse on the **Help** icon ( ) on the page or form to open a context sensitive topic.

- Some fields in caMOD forms also display a **Help** icon ( ). Pause your cursor over the icon to open a tool tip.

Once you are in online help, several options help you locate topics of interest (*Figure 1.3*).

Figure 1.3 Online help offers several options for finding assistance in using caMOD

- Context sensitive help displays online help topics that correspond to the "form" or page from which help was opened. Click the **Show in Contents button** ( ) at the top left of the topics to open the full online help directory.

- The breadcrumb trail at the top of the page shows the relative location of the current help topic relative to neighboring topics. Click a breadcrumb link to display that help topic.

- Follow hypertext links, or **Related Topics** buttons in the help topics to open other closely related topics. If the current help page has related topics associated with it, you can also view them by clicking the Related Topics button ( ) at the top right of the help page.

- Locate topics using the table of contents that displays in the left pane of the online help project or the **Index** tab that displays at the top of your screen.
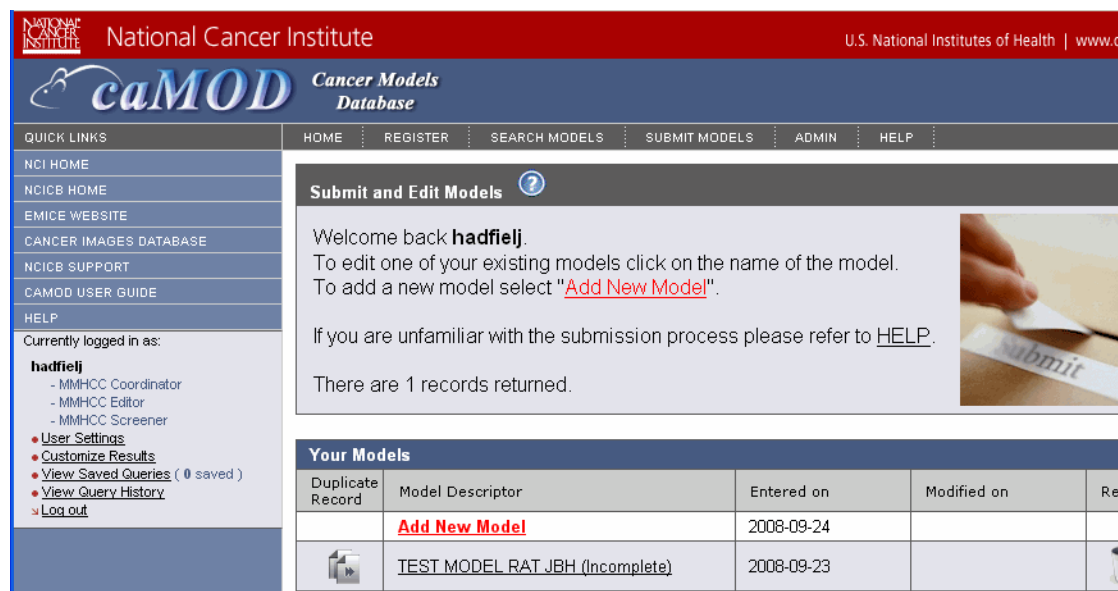
- Perform word searches of Help by entering query text in the search text box.

- Print the current topic by clicking the Print button (🖨) at the top right of the help page.

What's New in caMOD

From the caMOD login page, you can click the **View What's New** hypertext link to learn what is new in caMOD. The What's New page announces and briefly describes new features, as well as giving abbreviated directions for using the new features.

Submit and Edit Models Page

After you have logged into caMOD, the application directs you automatically to the Submit and Edit Models Page (*Figure 1.4*).

Figure 1.4 Submit and Edit Models page

If you have previously submitted models to caMOD, or you have been named as a PI of any models in caMOD, those models are listed on this page by default when it opens. If this is not the case, no models are listed. The page always displays the hypertext link in red text: Add New Model.

1. Click the **Add New Model** link; this opens the *Model Characteristics* page where you can add new information for your model. After you have submitted models, all models to which you have access, including those which you have submitted, display on this page, sorted alphabetically. The name of each is a link to its Model Characteristics form which displays general information about the model.

2. To duplicate a model, click on the appropriate **Duplicate Record** icon (📑) that displays to the left of each model. Once duplicated, the copy is added to the model list on the same page. The new model is displayed in alphabetical order under "Copy of..."

Duplicating a model might be appropriate when you want to modify a model, such as for creating an allele, while leaving an intact original model in the database. You also might want to create a duplicate when a heterozygous version and a homozygous version of the same model show different phenotypes. Since the way the models were generated is similar, it will speed up the submission process if the model is duplicated and changes are applied to the appropriate fields, such as the **Phenotype** field, instead of entering all the information again.

3. To delete a model, click the **Remove** icon ( ) (in the right-hand column) corresponding to the model .

Note: Only the person who submitted the model or the PI for that model can duplicate and/or modify a model. Permissions for a model are defined when the model is submitted, and only two people--the submitter (model owner) and the PI--have "modify/delete" authorization for a model. For more information, see *Editing Data* on page 38.

Navigation in caMOD

The application advances to the Model Status page after you have submitted the data to the Model Characteristics page.

The Model Status Page is the anchor point of the submission. From here, you can navigate to other modes of caMOD. (Click the titles on the gray bar at the top of the viewer window (*Figure 1.5*).
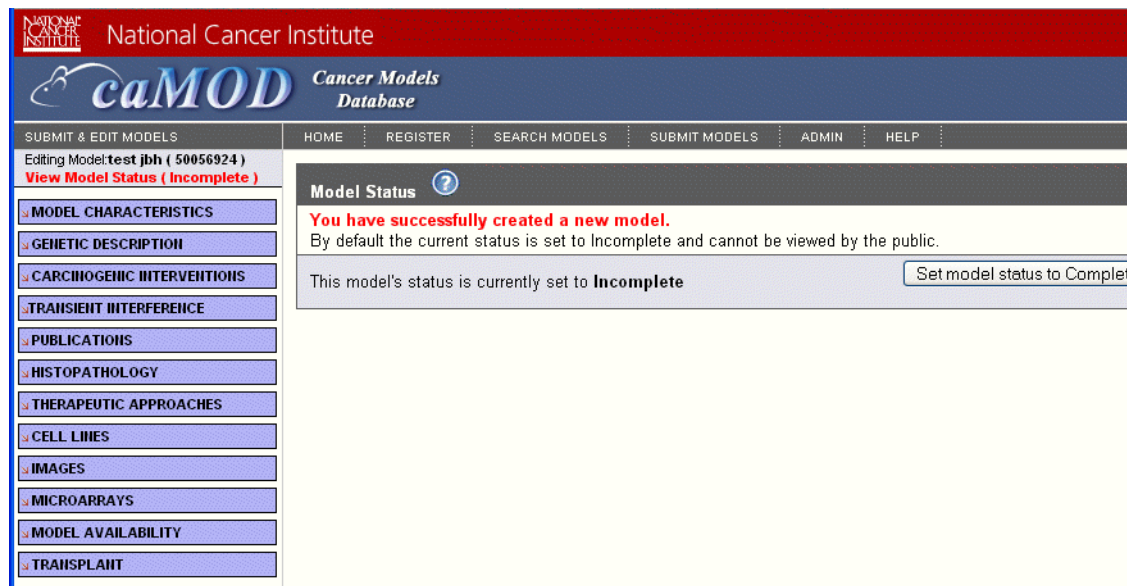

Figure 1.5 Model Status page

Newly submitted data becomes a link on the left sidebar of the Model Status page under the Model Characteristics category; selecting this link takes you back to the Model Characteristics page. The fields will be filled with the data you entered and you can add or edit information.

You will always return to the Model Status page after you have submitted data to one of the following parts of the submission, listed on the left sidebar:

- **Genetic Description**
- **Carcinogenic Interventions**
- **Transient Interference**
- **Publications**
- **Histopathology**

- **Therapeutic Approaches**
- **Cell Lines**
- **Images**
- **Transplant**
- **Model Availability**

To get a blank form to make a submission, always select the link that starts with "**Enter ....**".

Application Support

For any general information about the application, application support or to report a bug, contact NCICB Application Support.

Email: ncicb@pop.nci.nih.gov.	When submitting support requests via email, include the following: ● Your contact information, including your telephone number. ● The name of the application/tool you are using ● The URL if it is a Web-based application ● A description of the problem and steps to recreate it. The text of any error messages you have received
Application Support URL	http://ncicb.nci.nih.gov/NCICB/support
Telephone: 301-451-4384 or toll free: 888-478-4423	Telephone support is available Monday to Friday, 8 am – 8 pm Eastern Time, excluding government holidays.

SEARCHING THE CAMOD DATABASE

This chapter introduces you to the procedures for searching the caMOD database.

Topics in this chapter include:

caMOD Database Search Overview

Note: In caMOD, you do not need a user account to query caMOD. You can perform any caMOD searches without being logged in or even without a user account.

To launch a search, follow these steps:

1. On the caMOD Login Page click the **Search Models** link along the row of titles above the caMOD title.

OR

1. Once you are logged into caMOD, you can also launch a search in the same way. Click the **Search Models** "title" at the top of the page.
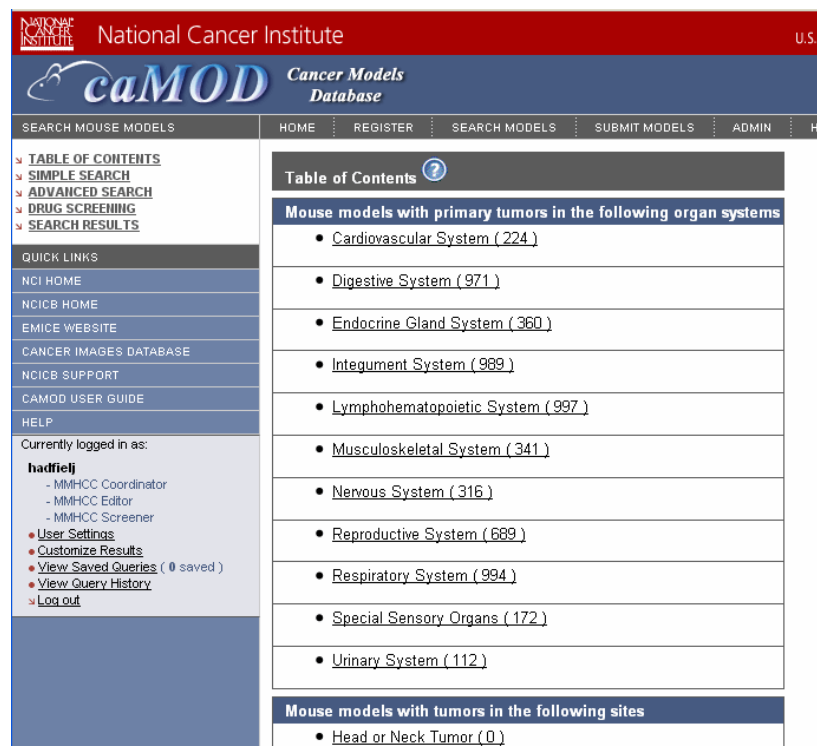
Once on the Search page, the Search options for caMOD display at the upper left sidebar of your viewer. The Simple Search page displays by default.

2. Click **Table of Contents** to view a list of all model categories in the caMOD database. The Table of Contents provides a selection of model categories or models.

   º Click **Simple Search** on the left sidebar to specify simple parameters for the search. See *Simple Search Mode* on page 13 for more information.

   º Click **Advanced Search** on the left sidebar to specify advanced parameters for the search. See *Advanced Search Mode* on page 14 for more information.

   º You can also launch a "combined search". The combined search is described in both of the search mode topics.

   º Click **Drug Screening** to launch a search for a specific compound or drug and results of its use in yeast screening, *in-vivo* screening, pre-clinical trials and in clinical trials. For more information, see *Drug Screening Search* on page 24.

When defining search criteria, there are no "required" fields. You can add much detail, or only those parameters that you consider essential to the search. If you click the **Search** button having defined no parameters, all of the models will be listed in the Search Results.

caMOD Table of Contents Search

From any Search viewer, the Search options display at the top left sidebar of the viewer. Click the **Table of Contents** link to open the caMOD Table of Contents (*Figure 2.1*).

Figure 2.1 Table of Contents for launching a search

The Table of Contents is organized according to animal model organ systems. If you want to launch a search and don't know where to start, this is a good beginning point. The models listed in each category of the table of contents are results of predefined searches, the results of which correspond to the organ system listed. The number that appears in parentheses next to the name of the link is the number of models that are returned in the search.

Click the appropriate link to pull up the models in the selected category. The caMOD viewer then displays the number of models that show a phenotype in this particular organ or organ system.

Simple Search Mode

Note: When defining search criteria in caMOD, there are no "required" fields. You can add much detail, or only those parameters that you consider essential to the search.

1. From any caMOD viewer window, click the **Search Models** link at the top of the page. This opens the Simple Search dialog box (*Figure 2.2*)

Figure 2.2 Simple Search page allows you to enter basic information for a model search

You can launch a search using either the **Keyword Search** or **Simple Search** options that display by default. Additionally, once you are on the caMOD search page, all Search options display on the upper left sidebar of your viewer.

2. For the Keyword Search, enter the query keyword.

   Note: You cannot combine search terms by an AND statement in the Keyword Search feature.

3. In the Simple Search form, enter search parameters in one or more fields. If you enter criteria in more than one of the four fields, they will be connected by an AND statement. Parameters are described in *Table 2.1*.

Search Criteria	*Description*
Model Name/Model Descriptor	Enter the name or parts of the model name. The search will return all models that contain the word or letter combination you entered.

Table 2.1 Simple Search parameters and their descriptions

Search Criteria	Description
Principal Investigator's Name	Select from the drop down list the name of the Principal Investigator for the model
Species	From the drop-down list, select the species of the model to be used as a query criterion
Site of the Lesion/Tumor	The available options correspond to the donor species you specified for this query. ● If the **Select** button displays (**Mouse**, **Rat** or **Zebrafish**), click it to open a **Lesion/Tumor** data tree that corresponds to the donor species. Select from the vocabulary tree the lesion or tumor to be used as a criterion for the search. ● If no **Select** button displays, in the text box, enter the **Lesion** or **Tumor** to be used as a criterion for the search.

Table 2.1 Simple Search parameters and their descriptions (Continued)

4. To launch the search, click the **Search** button. To clear all fields, click the **Clear** button.

   Results display in the Search Results viewer. See *caMOD Search Results* on page 18.

Combining Search Criteria

In both *Simple Search Mode* and *Advanced Search Mode*, search criteria entered into the search form can be combined with an "AND" statement. You cannot combine search terms by an AND statement in the Keyword Search feature.

Example:

● If you launch a search for models where the model descriptor/name contains WAP, the search might return six matches.

● If you search for models where the model descriptor/name contains WAP and the tumor site is mammary gland, the search might return less than six matches, because both search criteria need to be fulfilled in order to get matching records. This is an easy way to narrow the number of retrieved records.

Advanced Search Mode

Once on the caMOD Search page, the Search options display on the upper left sidebar of your viewer.

Note: When defining search criteria in caMOD, there are no "required" fields. You can add much detail, or only those parameters that you consider essential to the search.

1. From any caMOD viewer window, click the **Search Models** link at the top of the page.

   The **KeyWord Search** and **Simple Search** options display by default.

2. Click **Advanced Search** on the left sidebar to launch a search based on very specific and detailed search criteria. This opens the Advanced Search dialog box (*Figure 2.3*).

Figure 2.3 Advanced Search page allows you to enter detailed information for a model search

3. In the Advanced Search Mode dialog box, enter the specific parameters for your search. caMOD has a feature was that autocompletes the **Model Name**, **Site of Lesion/Tumor**, and **GeneName** fields. Type a letter and it should populate a dropdown list with matching values.

Search parameters are described in *Table 2.2*.

Note: Once you check a box, you do not need to select something from a drop-down list. Checking a box will return all models with the checked parameter, for example, all models with carcinogenic interventions.

Advanced Search Parameters	*Description*
Keyword Search	Enter one or more words to be used a the query term for the search.
Model Name/Model Descriptor	Enter the name or parts of the model name. The search will return all models that contain the word or letter combination you entered.
PI's (Principal Investigator's) Name	Select from the drop-down list the name of the **Principal Investigator** for the model.
Species	From the drop-down list, select the **Species** of the model to be used as a query criterion
Site of the Lesion/ Tumor	The available options correspond to the donor species you specified for this model for this query. • If the **Select** button displays (**Mouse**, **Rat** or **Zebrafish**), click it to open a **Lesion/Tumor** data tree that corresponds to the donor species. Select from the vocabulary tree the lesion or tumor to be used as a criterion for the search. • If no **Select** button displays, enter the **Lesion** or **Tumor** to be used as a criterion for the search.
Diagnosis	Click the **Select** button to open a diagnosis data tree that corresponds to the donor species you selected for this query. Select from the vocabulary tree the disease to be used as a criterion for the search .
Phenotype	Enter a brief description or portion thereof for the **Phenotype**. The search will return all models that contain the word or letter combination you entered. *Example*: Expression of the SV40 early region in the mammary and prostate epithelium leads to invasive carcinoma development over a predictable time course. The transgene is expressed in mammary ductal cells and the terminal ductal lobular unit in virgin animals and without hormone stimulation.

Table 2.2 Advanced Search parameters and their descriptions

Advanced Search Parameters	*Description*
Genetic Description: ● **Models with Transgene** ● **Models with Targeted Modification** ● **Genomic Segment Designator** ● **Inducing Agent for Induced Mutation**	Check boxes to search for models with transgene or targeted modification data. When either box is checked, that activates the row(s) below where you can select the transgene or targeted modification gene names. Select from the drop-down list the **Genomic Segment Designator** (also called the Clone Designator) which is location of the clone in the library. Select from the drop-down list the **Inducing Agent** if there was an induced mutation. If you select all four options, the search returns results that include *any* models with any of the criteria listed.
Carcinogenic Interventions:	These criteria are defined in two drop-down lists. ● In the first list, select the environmental factor type of carcinogen to which the model was exposed. ● The options in the second drop-down list correspond to your selection in the first list. Select from the second list the specific carcinogen to which the model was exposed. If you make no selection, caMOD queries for all models matching the agent type in the first selection. **Note:** You can query by type only, or by combination of type and carcinogen.
Cell Lines	Enter the name or parts of the name to search for a specific **Cell Line**.
Therapeutic Approaches	Check to search for models with specified **Therapeutic Approaches.** At that point, the **Compound/Drug** text box becomes enabled where you can add an appropriate name or part of a name. When you select the compound name, all models with therapeutic approaches data will be returned.
Histopathology	Check the box to search for models with metastasis.
Transient Interference	Check the box to search for models with Transient Interference.
Microarray Data	Check the box to search for models with associated microarray data.
Tool Strain	Check the box to search for tool strains.
Models with Images	Check the box to search for models with associated images.
External Source Data	Select from the drop-down list showing available external sources, such as the Jackson Lab Mouse Tumore Biology database.

Table 2.2 Advanced Search parameters and their descriptions (Continued)

4. Click the **Search** button to launch the search. To clear all field, click the **Clear** button.

Results display in the Search Results viewer. See the following section, *caMOD Search Results* for more information.

Notes about Advanced Search:

- All items in all drop-down lists should return results as terms that have been used in the description of models in the "edited-approved" state.

- You can save your search query to be reused later. For more information, see *Saving a Search Query* on page 22.

Combining Search Criteria

In both *Simple Search Mode* and *Advanced Search Mode*, when multiple search criteria are entered, the search is executed by automatically combining them with an "AND" statement. This, in effect, can narrow the number of retrieved records.

Example:

- If you launch a search for models where the model descriptor/name contains WAP, the search might return six matches.

- If you search for models where the model descriptor/name contains WAP and the tumor site is mammary gland, the search might return less than six matches, because both search criteria need to be fulfilled in order to get matching records.

caMOD Search Results

Notes: Drug Screening Results display differently and are interpreted differently than results obtained from the simple and advanced searches described in this topic. See *Drug Screening Search Results* on page 25 for more information.

The search results for a "Table of Contents Search" are identical to those retrieved using the Simple and Advanced Search features.

For Simple and Advanced Searches, search hits display in a Search Results page (*Figure 2.4*):

- Once you click the **Search** button, search results display in the Search Results viewer (*Figure 2.4*).

- The length of time the search took displays at the top of the search results page.

- If you click the **Search** button having defined no parameters for the search, all Edited-approved (public) models in the database whose release date is before the current date are shown in the Search Results.

- Any search hits that have associated image or microarray data display an icon in the Model Descriptor field. Click the icon to open the image or microarray data.

- In the table listing search results, click any column header to sort the results. The header by which results are sorted remains colored yellow after the sort.

- If you launch a keyword search, all instances of the query text in the search results displays as highlighted text (*Figure 2.4*). For example, all Edited-

approved models whose release date is before the current date are listed. Or all public models are listed.

- Some of the text, primarily the Model Descriptor, in the Search Results page consists of hypertext links that open other screens that display fixed data. Some of the experimental data pages may have links to other websites to provide you with additional information.

Figure 2.4 Search Results page;the page displays search criteria (circled)

An advanced search, initiated with a detailed query, returns results displaying identically to those returned from a simple search. In each case, the search criteria display under Search Criteria at the top of the Search Results page (*Figure 2.5*).

Figure 2.5 Advanced search results page displays its search criteria as well as search hits

To review complete search results, click any of the models listed in the Search Results viewer. This opens the Model Characteristics page displaying basic model information.

Note: If you open a model whose availability is part of the submitted model data, the **Model Availability** information displays underneath the Model Characteristics page. The **Strain** of the model displays, as well as the name of the **Distributor** (Investigator). If an email address for the Investigator exists in the caMOD database, click the name which is a hypertext link to the email information. For more information, see *Model Availability* on page 81.

Once the model information displays, a Comment field appears at the bottom of the page where you can add comments. Be aware that you can add a comment ONLY if you have logged into caMOD before you launched the search.

When the Model Characteristics page displays, other submitted or recorded information on the model becomes available through the model information menu options on the upper left sidebar of the page. Click on the underlined categories to review submitted information for the selected model.

Once you click a top-level category that contains model information, such as **Genetic Descriptions** or **Carcinogenic Interventions**, one search results page displays all pertinent information for that category in multiple tables, where appropriate. For

example, the **Genetic Description** category might display information about an **Engineered Transgene, Genomic Segment, Targeted Modification,** etc. The information fields that display on the search results tables correspond to the fields found on the corresponding submission pages. For more information about each category, see the appropriate sections in *Chapter 3*, *Submitting and Editing Models*.

Notes: The Genomic Segment, Target Modification, and Engineered Transgene results tables each display an additional section: **Organ / Tissue Gene is Expressed In** and **Expression Level** with expression levels indicated in the table.
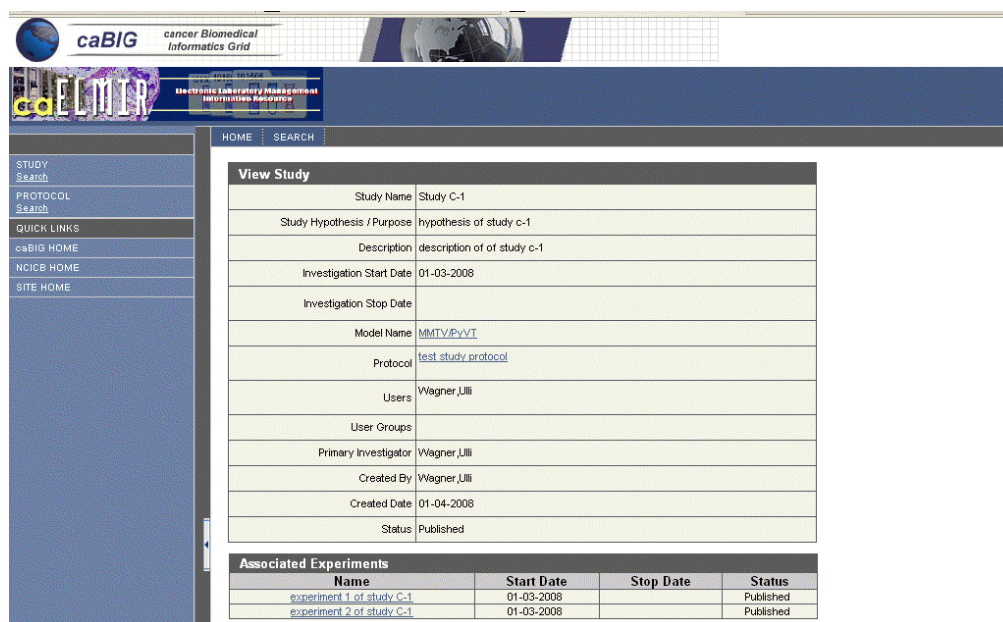
When models are located in the search that existed in the "old" caMOD database, Targeted Modification data can be recorded for the model that was obtained from external sources and is made available via caBIO. To review that information, click on the Genetic Description category when your appropriate Model Characteristics search page displays.

Search Results with caELMIR Link

Search results that return with Therapeutic Approaches data (as indicated by underlined Therapeutic Approaches on the left sidebar) may have links to study data from caELMIR (Electronic Laboratory Management Information Resource). caELMIR is a data management system for experimental data generated in preclinical trials.

To see if such study data is available, follow these steps:

1. Click the underlined Therapeutic Approaches on the left sidebar.

2. Scroll to the bottom of the Therapeutic Approaches page.

   If caELMIR studies are associated with the model, you will see a table entitled: Summary of the caELMIR Study: {title}.

3. To open the study data, click the **Study Name** hypertext link.

Figure 2.6 An example of caELMIR study data (hypothetical) linked from caMOD

You can open associated experiments by clicking the links for those listed in the Associated Experiments segment of the user interface.

Saving a Search Query

Note: You must be logged in before you can save a search query.

Once you have submitted a search query, at the top of the Search Results page, a **Save Query** button displays. To save a search query, in the text box enter a name for the query and click the **Save Query** button.

To see search queries you have saved, click the **View Saved Queries** hypertext link in the lower left sidebar. (This link displays in the left sidebar in any caMOD viewer window.)

Figure 2.7 Saved Queries dialog box

The Saved Queries dialog box (*Figure 2.7*) displays search queries identified by the names you assigned to each, the time point of the search and the number of hits in the search (*Figure 2.7*).

To see the search criteria for each search query listed, click the **Query Name**.

Click the associated **RUN QUERY** or **EDIT QUERY** buttons to resubmit the query or to edit the query.

- **RUN QUERY**--When you re-run the query, the new search result hits display in a Search Results page. If launched as a Keyword Search, the query term is highlighted in yellow wherever it occurs in the search results text.

- **EDIT QUERY**--The Advanced Search page displays, allowing you to edit or add fields to your original query. To launch a search with the edited criteria and to save the changes in your query, click the **Search** button at the bottom of the Saved Queries page. The new Search Results page opens; at the top of the page, select the option to save the query with new criteria under the existing search query name or to save the new criteria under a new search query name, which you enter into the text box. Click the **Save Query** button to execute your selection.

Search Query History

To see a Search Query History, click the **View Query History** hypertext link in the lower left sidebar. (This link displays in the left sidebar in any caMOD viewer window.)

Query History (Last 20 searches)			
Query Name	Last Executed	Results	Resubmit Query
▶ No Name Provided	2006-05-19 13:59:29.0	5	RUN QUERY
▶ No Name Provided	2006-05-19 13:56:29.0	361	RUN QUERY
▶ No Name Provided	2006-05-19 13:35:14.0	1	RUN QUERY
▶ No Name Provided	2006-05-19 13:30:59.0	1	RUN QUERY
▶ No Name Provided	2006-05-19 13:26:11.0	361	RUN QUERY
▶ No Name Provided	2006-05-19 13:26:09.0	361	RUN QUERY
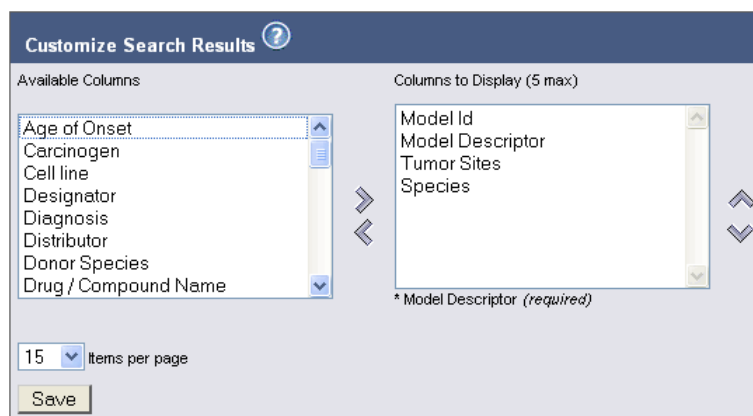
Figure 2.8 Query History dialog box

The Query History that opens displays Query Names for the last 20 searches you have launched (*Figure 2.8*). It also displays the time point of the search and the number of hits in the search. By clicking the associated RUN QUERY button, you can resubmit the query.

Search results re-display in a Search Results page. If the search was launched as a Keyword Search, the query term is highlighted in yellow wherever it occurs in the search results text.

Customizing Search Results

To customize search results display, click the **Customize Results** hypertext link in the lower left sidebar. (This link displays in the left sidebar in any caMOD viewer window.)

Figure 2.9 Customize Search Results dialog box allows you to define how search results display

The dialog box that opens displays **Available Columns** and **Columns to Display** (*Figure 2.9*)**.** The field names in the left panel become column titles in the Search Results table when they are moved to the right panel. In either select box, select fields and move them to the other box using the **Forward** or **Back** buttons (⟫ ⟪). A

maximum of five columns can display at one time in a Search Results viewer. **Model Descriptor** is the only required field in the **Columns to Display** selection pane. You can also select the number of search results that display on each page. Select the number from the drop-down menu at the bottom of the page.

Click the **Save** button to save your settings. Any searches you launch after this configuration will display the fields and number of results you defined in the Search Results page.

Drug Screening Search

The Drug Screening Search page allows you to search for a specific compound or drug and results of its use in yeast screening, *in-vivo* screening, pre-clinical trials and in clinical trials. The yeast and in vivo screening data were obtained from the NCI Developmental Therapeutics Program(http://dtp.nci.nih.gov).

Summaries of the four drug screening options are as follows:

NCI In-Vivo Anti-tumor Screening Data—For approximately thirty years, the NCI used *in vivo* animal tumor models to screen compounds for potential antitumor activity. A detailed description of these models was published in Cancer Chemotherapy Reports.

NCI Yeast Anticancer Drug Screen—The NCI Yeast Anticancer Drug Screen has screened tens of thousands of compounds for the ability to inhibit the growth of selected yeast strains altered in DNA damage repair or cell cycle control. Compounds are initially screened against a panel of 6 yeast strains at a single concentration (Stage 0). Compounds with activity in Stage 0 are rescreened against the same panel at 2 concentrations (Stage1). Selected compounds with activity in Stage1 that also show selectivity are rescreened against a panel of 13 yeast strains at 5 concentrations (Stage 2). Available here are screening results for compounds that are not covered by a confidentiality agreement. The data were last updated in April 2002.

Clinical Trials—Clinical Trials data are obtained via caBIO (Biomedical Data Objects) from the NCI Cancer Therapy Evaluation Program (CTEP) and Physician Data Query (PDQ).

Pre-Clinical Trials—Pre-clinical trials are populated with data stored in caMOD.

Launching a Drug Screening Search

To initiate a drug screening search, complete the following steps:

1. From any caMOD viewer window, click the **Search Models** link at the top of the page.

2. Click the **Drug Screening** option listed among the **Search** options in the upper-left of the browser window.

3. On the Drug Screening Data form, enter the appropriate information. (Fields are described in *Table 2.3*.) Note that you can check all of the check boxes in one

search. Items with an asterisk are required fields. Click **Submit** to initiate the

Drug Screening Fields	*Description*
*****NSC Number**	Enter the NSC number in the text box. Once you start entering the number, caMOD autocompletes matching NSC numbers from the caMOD database.The NSC number is a unique drug identifier issued by the Nomenclature Standards Committee (NSC) of the U.S Food and Drug Administration. • If you don't know the number, click the **Find NSC#** button. The button opens a page at the Developmental Therapeutics Program (DTP) at NCI which allows you to find the NSC number for a specific drug. • On the DTP page, select **Chemical name starts** or **Chemical name number**. (By default, the radio button is set to find the NSC number.) • Enter text in the **Search Parameters** field, and click **Submit**. • Once you have found the NSC number, copy the number from the field onto the corresponding field on the caMOD Drug Screening page.
DTP Yeast Screening Data	Check the box to find yeast screening data related to the specified drug.
DTP In-vivo Screening Data	Check the box to find *in-vivo* screening data related to the specified drug.
Pre-clinical Trials	Check the box to find pre-clinical trials with this compound or drug related to the specified drug.
Clinical Trials	Check the box to find clinical trials with this compound or drug related to the specified drug.

Table 2.3 Drug Screening fields and their descriptions

search.

4. Click **Reset** to return the form to default settings: If you are entering data for he first time, **Reset** clears the form (resets it to its defaults). If you are changing search parameters, **Reset** returns the form back to the unmodified state (the default).

For general information about search results, see the following section.

For specific information about drug screening results, see:

Yeast Screening Search Results on page 26

In-Vivo Drug Screening Search Results on page 27

Pre-Clinical/Clinical Trials Drug Screening Results on page 30.

Drug Screening Search Results

Notes about a Drug Screening Search:

• Once you click the **Search** button, search results display in the Search Results viewer.

- If you click the **Search** button having defined no parameters for the search, all of the models in the database will be listed in the Search Results.

The Search Results page displays one or more sets of data located in the search, based on how you configured your inquiry. The details for each section of information display in table format.

Some of the text, primarily the Model Descriptor, in the Search Results page consists of hypertext links that open other screens that display fixed data. Some of the experimental data pages may have links to the Internet for genes listed on the page. These final links can provide you with technical information, for instance, about the gene.

Follow the cross references for more information about each of the drug screening data types:

Yeast Screening Search Results on page 26

In-Vivo Drug Screening Search Results on page 27

Pre-Clinical/Clinical Trials Drug Screening Results on page 30

Yeast Screening Search Results

You can launch a search for yeast-screening of drug compounds. The results display on a Search Results page under the summary table.

The NCI Yeast Anticancer Drug Screen has screened tens of thousands of compounds for the ability to inhibit the growth of selected yeast strains altered in DNA damage repair or cell cycle control. Available here are screening results for compounds that are not covered by a confidentiality agreement. The data were last updated in April 2002.

Every yeast screening experiment is run in duplicate. The results of the two columns of data can be interpreted as follows: A = Average inhibition of growth by the drug and D = the difference in growth inhibition between the two experiments.

The data for three experimental stages displays:

- Stage 0: Drug compounds are initially screened against a panel of 6 yeast strains at a single concentration. All yeast strains used in the experiment are listed in the table.

- Stage 1: Drug compounds with activity in Stage 0 are re-screened against the same panel at 2 concentrations.

- Stage 2: Selected drug compounds with activity in Stage1 that also show selectivity are re-screened against a panel of 13 yeast strains at 5 concentrations.

An example of yeast screening data appears in *Figure 2.10*:

Search Results for
NSC: 632
CAS:

Publicly available data from the NCI Yeast Anticancer Drug Screen
Stage 0 - Crude Sensitivity Screen

Experimental Design - Stage 0 Testing | Yeast Strains used for Stage 0 Experiments

Strain / Dosage A= AveInh, D=DiffInh	50.00µM	
	A	D
CLN2oe rad14	63.80	5.00
bub3	13.15	14.30
mec2-1	49.30	19.20
mgt1 sgs1	84.45	12.10
mlh1 rad18	82.10	3.80
rad50	92.80	4.20

Publicly available data from the NCI Yeast Anticancer Drug Screen
Stage 1 - Crude Selectivity Screen

Experimental Design - Stage 1 Testing | Yeast Strains used for Stage 1 Experiments

Strain / Dosage A= AveInh, D=DiffInh	5.00µM		50.00µM	
	A	D	A	D
CLN2oe rad14	3.00	2.00	71.00	12.00
bub3	-12.00	8.00	-8.00	4.00
mec2-1	6.00	2.00	75.00	0.00
mgt1 sgs1	50.00	0.00	83.00	6.00
mlh1 rad18	14.00	4.00	86.00	3.00
rad50	36.00	12.00	94.00	2.00

Publicly available data from the NCI Yeast Anticancer Drug Screen
Stage 2 - Dose Response

Figure 2.10 Drug screening yeast anti-cancer drug screen

- Click **{#} Experimental Design ...** to open a description of the experiment design used in the drug screening experiment.

- Click **Yeast Strains Used ...** to open information about the yeast strains used in the drug screening experiment.

In-Vivo Drug Screening Search Results

You can launch a search for *in-vivo* drug screening compounds. The results initially display on a Summary Page (described as follows).

In-Vivo Drug Screening Search Results Summary Page

The summary page contains for each of the NSC numbers included in the *in-vivo* query: 1) the model that was used to test the drug, 2) the inoculation site, 3) the mouse strain, and 4) the number of experiments. This last number is a hyperlink that takes you

to a details page that outlines and summarizes the results for each set of experiments (See *Figure 2.11* and the Details section below).

Search Results for
NSC: 24820
CAS:

In Vivo Screening Data		
For approximately thirty years, the NCI used *in vivo* animal tumor models to screen compounds for potential antitumor activity.		
1	Carcinoma 1025; Protocol= Murine Tumor employed prior to 1986 in (SC (subcutaneous))	4
2	L1210 Leukemia; Protocol = Murine Tumor Employed Prior to 1986 in (IP (intraperitoneal))	24
3	Lieberman Plasma Cell No. 1 (LPC-1) in (IP (intraperitoneal))	9
4	P388 Leukemia; Protocol = Murine Tumor Employed Prior to 1986 in (IP (intraperitoneal))	12
5	P388 Leukemia; Protocol = Murine Tumor Employed Prior to 1986 in (IP (intraperitoneal))	12

Summary of Preclinical Trials
No data found.

Current Clinical Trials
No data found.

Publicly available data from the NCI Yeast Anticancer Drug Screen
No data found.

Figure 2.11 In-vivo drug screening results

For example

- L1210 Leukemia; Protocol = Murine Tumor Employed Prior to 1986 (intraperitoneal) B6D2F1 (BDF1) mice (4 records)

- L1210 Leukemia; Protocol = Murine Tumor Employed Prior to 1986 = represents the model that was used for the test

- intraperitoneal = site where the tumor initiator (cell line) was placed

- B6D2F1 (BDF1) mice = mouse strain in which the experiment was performed

- 4 records = number of experiments.

Click on the experiment number hypertext link which opens the results detail page corresponding to the experiment.

In-Vivo Drug Screening Search Results Details Page

The top of the detail page opened from the in-Vivo Search Results *In-Vivo Drug Screening Search Results Summary Page* displays the NSC# and a hypertext link to chemical data for the compound (*Figure 2.12*).

Administration of Drug				Toxicity Results		Experiment Results		
Schedule	Route	Vehicle	Dose	Toxicity Evaluation Day	Toxicity Survivors	Endpoint	Evaluation Day	Treated/Controls (%)
Q01DX001	intraperitoneal	Saline	00100.00 mg/kg	usually day 5	04/04	Mean survival time	animals followed until death	101.0
Q01DX001	intraperitoneal	Saline	00200.00 mg/kg	usually day 5	03/04	Mean survival time	animals followed until death	95.0
Q01DX001	intraperitoneal	Saline	00400.00 mg/kg	usually day 5	01/04	Mean survival time	animals followed until death	0.0

Figure 2.12 Drug screening in-vivo search results details page

The detail page also lists in table format each individual experiment performed with the specified drug on the specific model. The table categories are described in *Table 2.4*. Examples are given, where appropriate.

Administration of Drugs	*Description*
Schedule	Treatment Schedule Example: Q04DX005 = total of 5 injections administered every four days Q = every 04 = treatment interval D = interval unit (minutes, hours, days) X = times 005 = number of injections associated with the basic schedule
Route	Administration site of the drug
Vehicle	Medium in which the drug was diluted
Toxicity Results	
Dose	Amount of drug administered
Toxicity Evaluation Day	A day specified by the screener that will serve as a toxicity valuation point for the compound under test.
Toxicity Survivors	The number of survivors on toxicity day and the total number of animals started on test.

Table 2.4 Administration of Drugs page describes in-vivo drug screening search parametersIn-vivo drug screening search details descriptions

Administration of Drugs	Description
Experiment Result	
Endpoint	Parameter for measuring the success
Evaluation Day	Day on which the success of the experiment was evaluated
Treated/Controls (%)	Test evaluation divided by the control evaluation yield percent evaluation. Used to determine activity of test compound. The mean/median tumor weight or the mean/median survival time of the treated group is divided by that of the untreated group and multiplied by 100. *Example 1:* Endpoint parameter is mean survival time: treated animals survived 45 days control animals survived 40 days Calculation: 45 / 40 * 100 = 112.5% *Example 2*: Endpoint parameter is mean tumor weight: tumors of treated animals weight 10 grams tumors of treated animals weight 12 grams Calculation: 10 / 12 * 100 = 83%

Table 2.4   Administration of Drugs page describes in-vivo drug screening search parametersIn-vivo drug screening search details descriptions

Pre-Clinical/Clinical Trials Drug Screening Results

To launch a search for pre-clinical or clinical trials drug screening results, see *Drug Screening Search* on page 24. Once the search is initiated, the results of pre-clinical and/or clinical trials performed with the specified drug display on a Search Results page in a summary table, with details listed for each type of search under the summary table.

Pre-Clinical Trials Results Details

The pre-clinical trials results table displays the model descriptors for models tested with the specific drug. Each descriptor is a hypertext link to more complete model information, starting with the Model Characteristics page. See the results description in *caMOD Search Results* on page 18 for more information.

Clinical Trials Results Details

The clinical trials results table displays the name of the clinical trial on the title bar of the table. The body of the table lists each center performing the clinical trial, the PI of the project, the phase of the clinical trial and the status of the clinical trial (*Figure 2.13*).

Search Results for ARSENIC TRIOXIDE (Trisenox) NSC: 706363 CAS:	
Current Clinical Trials for ARSENIC TRIOXIDE (Trisenox)	
H Lee Moffitt Cancer Center H Lee Moffitt Cancer Center	PI:Kapil N. Bhalla Phase: II Status of Trial: Closed to Accrual & Treatment
Memorial Sloan Kettering Cancer Ctr Memorial Sloan Kettering Cancer Ctr	PI:David A. Scheinberg Phase: II Status of Trial: Complete
M.D. Anderson Cancer Center M.D. Anderson Cancer Center	PI:Deborah A. Thomas Phase: II Status of Trial: Complete
University of Miami Syslvester Cancer Center University of Miami Syslvester Cancer Center	PI:Kelvin Paul Lee Phase: I/II Status of Trial: Active
M.D. Anderson Cancer Center M.D. Anderson Cancer Center	PI:Jaffer A. Ajani Phase: II Status of Trial: Active
University of Chicago University of Chicago	PI:Hedy Lee Kindler Phase: II Status of Trial: Closed to Accrual & Treatment
Cancer and Leukemia Group B Cancer and Leukemia Group B	PI:Bayard Lowery Powell Phase: III Status of Trial: Active
Cancer and Leukemia Group B Cancer and Leukemia Group B	PI:Dean Francis Bajorin Phase: II Status of Trial: Closed to Accrual & Treatment
Eastern Cooperative Oncology Group Eastern Cooperative Oncology Group	PI:Mark R. Litzow Phase: II Status of Trial: Closed to Accrual & Treatment
New Approaches to Brain Tumor Therapy Consortium New Approaches to Brain Tumor Therapy Consortium	PI:Samuel Ryu Phase: I Status of Trial: Active
Southwest Oncology Group Southwest Oncology Group	PI:Tomasz M. Beer Phase: II Status of Trial: Temporarily Closed to Accrual

Figure 2.13 Drug screening search clinical trials data

SUBMITTING AND EDITING MODELS

This chapter introduces you to the processes in caMOD for submitting and editing models.

Topics in this chapter include:

- *Submitting Models* on page 34

- *Navigating a Data Tree* on page 41

- *Genetic Description* on page 44

- *Carcinogenic Interventions* on page 53

- *Transient Interference* on page 65

- *Publications* on page 68

- *Histopathology* on page 70

- *Therapy* on page 75

- *Cell Lines* on page 78

- *Images* on page 79

- *Microarray Data* on page 80

- *Model Availability* on page 81

- *Transplant* on page 83

- *Grid Availability* on page 85

Submitting Models

After you have logged into caMOD, the Submit and Edit Models page opens. If you click the **Add New Model** red hypertext link, the Model Characteristics dialog box opens for you to add information about the new model (*Figure 3.1*).

Figure 3.1 Submit and Edit Models page

Notes about Submitting Models

- You must enter Model Characteristics about your model.

- You need to fill out only the parts that apply to your model. For example, if your model was not exposed to carcinogenic interventions, you don't have to enter data about carcinogenic interventions.

- You can make multiple entries for each category. For example, if the model was exposed to two different chemicals or if the model was used in multiple therapeutic trials, you would enter data for each instance. Once an initial entry has been made, submit it. Enter multiple entries for the same model in exactly the same manner. See the Generic Steps for Submitting Models below. A newly-named link will display in the same options list as described in the steps below.

If you cannot complete the submission of the model in one session, you can come back later and add data. caMOD will provide you with a list of all models that you entered after you have logged in.

Generic steps for Submitting Models

1. Click **Add New Model** on the Submit and Edit Models page. Enter information about your model on the Model Characteristics page and click the **Submit** button.

    The Model Status page opens, verifying that you have successfully created a model (*Figure 3.2*).
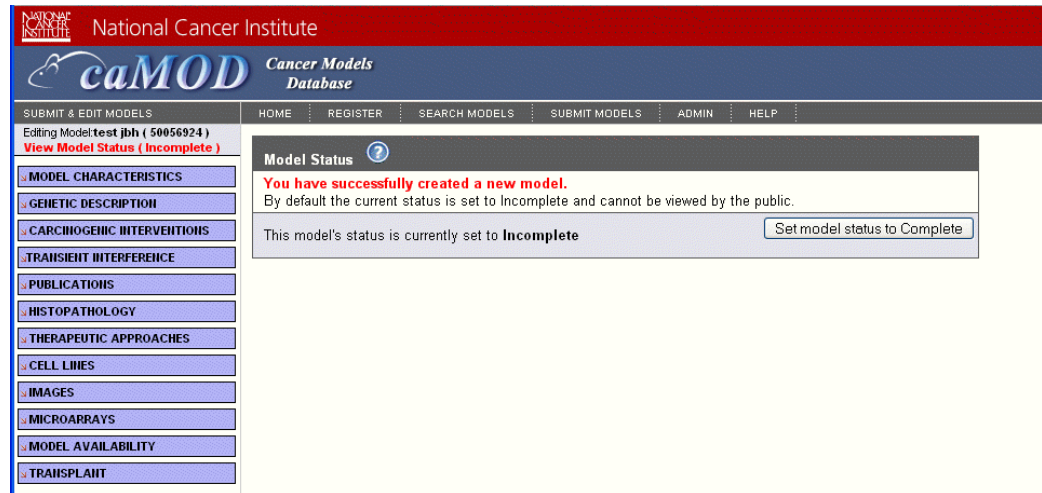
Figure 3.2 Model Status page

By default, at this point the model is "Incomplete" and cannot be viewed by the public. You can continue to add more information to your incomplete model now (follow steps 4 and 5) or later. It is preferred that you finish your model before clicking the **Set Model Status to Complete** button.

Note: Moving a model to **Complete** starts the curation process. If necessary, however, you can modify the model after the curation process has started.

2. To add more information about your model, click any category from the list of Submit and Edit Models menu options on the left sidebar of the caMOD viewing window. These menu options display after you have clicked the (model) **Submit** button in any caMOD viewer or when you are editing a model.

3. Click any red hypertext link listed under the top-level category headings. This opens the appropriate form for the data you want to enter about your model. (For more information about these pages, open online help using any of the methods described on)

4. Enter or select the relevant information about your animal model in the text entry fields. Items on the browser pages that are bold and have an asterisk are required fields.

    Once submitted, a screen displays verifying you have created a new model. By default, the status is set at incomplete; the model in this state cannot be viewed publicly.

    Note: After editing an existing model, a screen also displays verifying that you have added/deleted/updated information for the model.

5. Click the **Set Model Status to Complete** button. This should be the last step after all information is entered.

At that point, the application returns to the Submit and Edit screen where the name of the new model is listed in blue under the sidebar category for the information you added. The name is a hyperlink to the form containing the corresponding information for the model.

6. To review or edit the information, click on the name of the model. Click the Model characteristics category, and click on the blue text model name.

    You can review the information or edit it, where appropriate.

7. To add more information about the model, click the model name and repeat steps 4 and 5 in this list. Continue to add information about the model until it is complete.

8. In the same manner, enter and submit a second entry for the same model.

For detailed directions about submitting model information, see the specific topics listed in the online help Table of Contents.

Structure of the Submission Process

This section and *Table 3.1* summarize the pages of caMOD that you can use to enter or review data about a model submitted into caMOD.

Information Categories in caMOD	Description of Category's Focus
Model Characteristics	Provides an overview about the experimental design and phenotype of the model.
Genetic Description, Carcinogenic Interventions, Therapeutic Interventions, Transplants	Describe the way the model was generated in more detail.
Publications	Describes publications written about the animal model and experiments conducted with the animal model.
Histopathology	Stores histopathology results for each affected organ in the model
Cell Lines	Describes Cell Lines that were generated from the model
Therapeutic Approach	Illustrates experiments and the results of attempts to cure the animals
Image and Microarray Data	Repositories for appropriate images and expression data for the model
Model Availability	Allows you to submit sources for acquiring the animal model itself or other strains that were used to generate the animal model

Table 3.1 Information categories in caMOD

Example:

A double-transgenic animal was crossed with a knock-out animal, treated with UV-light.

To properly describe this model, you would make the following entries:

- **Genetic Description > Enter Engineered Transgene > Transgene 1**

- **Genetic Description > Enter Engineered Transgene > Transgene 2**

- **Genetic Description > Enter Targeted Modification > Knock-out Gene**

- **Carcinogenic Interventions > Enter Radiation > UV-light**

Model Status Page

After you have clicked the **Submit** button on any of the pages where you entered information for a new model, the Model Status page displays. The default status for the model is **Incomplete**, although the text does indicate that you have successfully created a new model.

Note: A model cannot be viewed by the public in the Incomplete state. In fact, the only state in which the public can view a model is when it has been "Edited-approved".
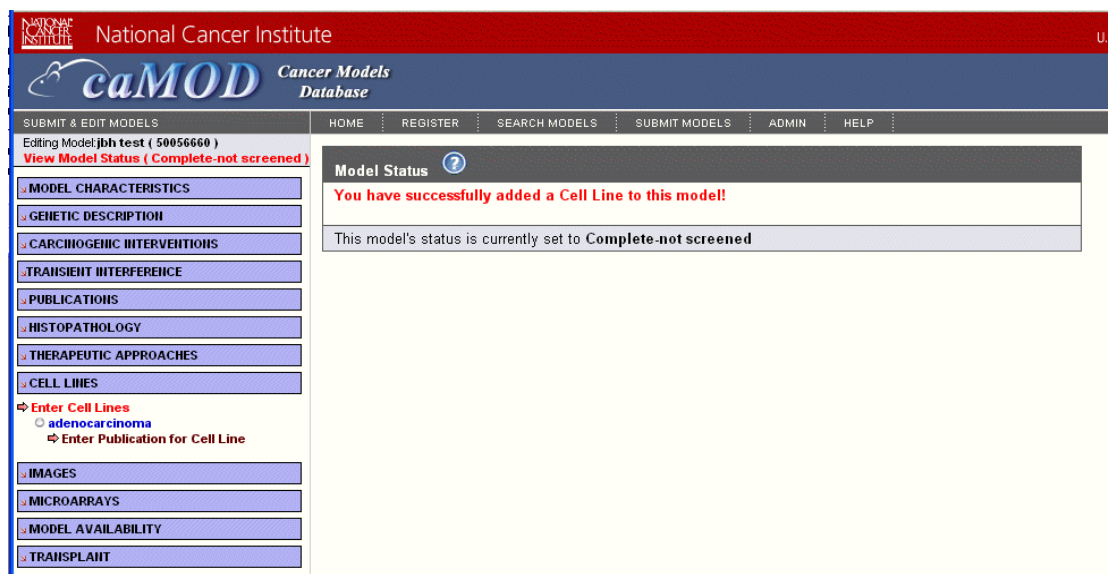
Figure 3.3 Once information is added to a model, it displays under the category in the left sidebar of the Model Status page.

From the Model Status page (*Figure 3.3*), you can add or edit information relating to your model, or you can click the **Set Model Status to Complete** button to finalize the submission of the model.

Back in the Submit and Edit Models page, the status of each model in the database is indicated:

Examples:

- **Edited** -- Approved by Editor. This model is ready to be displayed to the public because the review process has been completed and the model was approved.

- **Screen** -- Assigned for screening

- **Complete** -- Not screened. This model has been declared completed by the submitter and awaits review or more specific assignments to the screener.
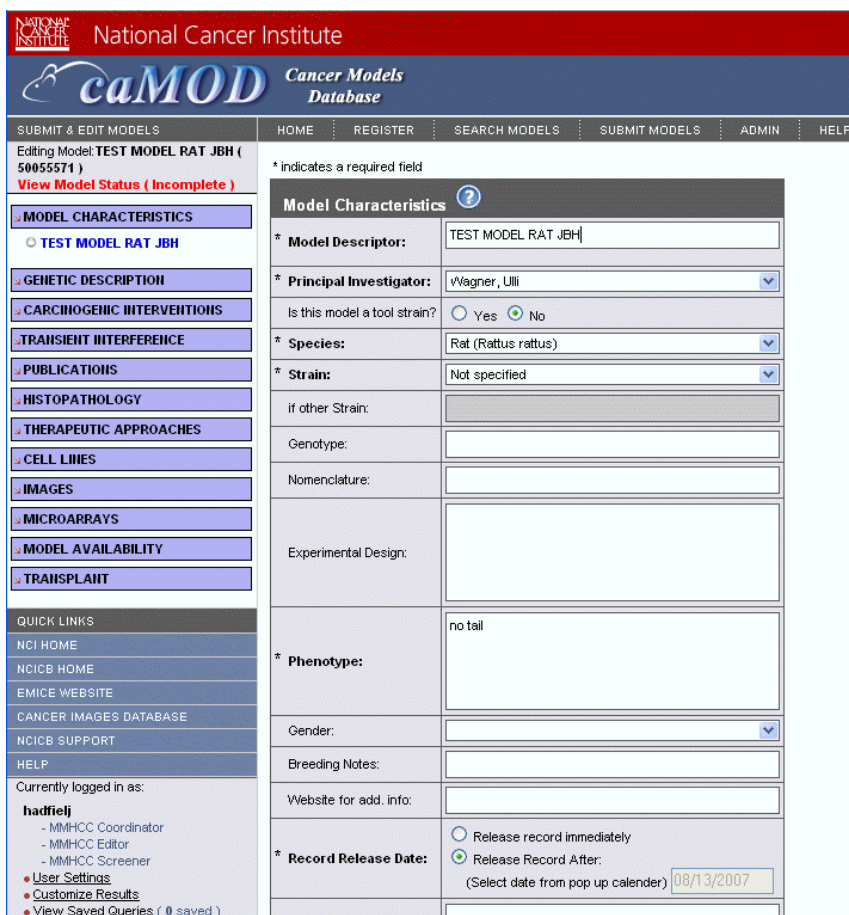
Editing Data

A model submitter or PI can modify or delete a model they have previously submitted or have "ownership" of.

Note: Before editing a model, you may want to first make a copy of the model so that the original model data remains intact. To copy the model, on the Submit and Edit page, click the Duplicate Record icon (![icon]) corresponding to the model you want to copy. The copied model is now added to the models list on the same page.

To edit a model, follow these steps:

1. On the Submit and Edit page, click the model name.

2. Open any underlined category under the Submit and Edit options on the left sidebar of the viewer window to modify existing information. For instance, click the **Model Characteristics** option. Click the model name under that category. This opens the Model Characteristics page, where you can perform your edits (*Figure 3.4*).

Figure 3.4 On any model you "own", you can edit data on any of the category pages accessible for the model.

When you return to a specific submission page to edit your previously entered data, you can choose to delete any particular part of a record, such as one specific publication or one specific transgene.

3. Click any categories to add new information for the model. Click **Submit** to execute the submission.

4. You can also, as the model owner, choose to remove a model from caMOD. On the Submit and Edit Models page, click the **Remove** icon (   ) corresponding to the model you want to remove.

Model Characteristics

To enter or edit general information for an animal model,

1. After you have logged into caMOD, the Submit and Edit Models page opens. If you click the **Add New Model** red hypertext link, the Model Characteristic form opens for you to add information about the new model.

OR

1. Click **Model Characteristics** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have click the (model) **Submit** button in other caMOD viewers.

2. Enter or select the appropriate information about your animal model in the text entry fields. Items that are bold and have an asterisk are required fields.

Note: You must click the **Submit** button after you have entered the appropriate information for the model. You do not need to finalize the entry in one session. The next time you log in, the model on which you are working will be listed. Click on the model name to open the Model Characteristics page once again, where you can continue the submission. The model should remain "incomplete" until you have entered all of the data.

Model Characteristics text fields are described in *Table 3.2* :

Model Characteristics Text Fields	Description
*Model descriptor	Model descriptor is the commonly used name for the model. It can even be a "nick name" for the model (e.g. conditional BrCa1 knockout).
	In some cases the model name might be the same as the genotype (e.g. Wap-Cre).
	The program accepts multiple models with the same name (like Melanoma model). The record is identified by an unique number and not by the name. The search will eventually pull up all records that match certain criteria.
*Principal Investigator	Select the name of the Principal Investigator from the drop-down menu.

Table 3.2 Model Characteristics fields and their descriptions

Model Characteristics Text Fields	Description
Is this model a tool strain?	Answer **Yes** or **No**. (A tool strain is a model strain that develops no tumors, for example, Cre-expressing strains or strains carrying one or more floxed genes. A tool strain is used to create tumor-bearing strains, such as conditional knockouts.)
*Species	Select genus and species of the model from the drop-down list. **Note:** If you use an animal that is not listed, contact NCICB Application Support immediately so that we can consider adding the species.
*Strain	Strain is a specific breeding population of mice, including inbred strains, progeny of specific genetic crosses, or a mixed population of mice with partially known or unknown genetic background.
If Other Strain	Enter the specific strain information, if it is not listed in the Strain drop-down menu. **Note:** This field is only writable after you select **Other** in the previous field.
Developmental Stage	This field displays only if the model you select is a zebrafish. From the drop-down list, select the stage that corresponds to the model being submitted. **Note:** The options for this field on this page are described in five very general terms, contributing to an overview for the model. For more detailed descriptions derived from a Developmental Stage data tree, see *Therapy* on page 75.
Genotype	List the genetic changes made deliberately in order to generate the animal model.
Nomenclature	Enter the appropriate nomenclature for the model. Nomenclature names for mouse and rat strains follow the guidelines established by the International Committee on Standardized Genetic Nomenclature for Mice and are implemented through the Mouse Genomic Nomenclature Committee (MGNC). For details see http://www.informatics.jax.org/mgihome/nomen/index.shtml
Experimental Design	The **Experimental Design** describes how a model was generated. This is especially important for GEM. *Example:* "The 4.5 kb 5' flanking region of the C3(1) component of rat prostatin was utilized to target expression for SV40 Tag to the prostate epithelium."
*Phenotype	The field **Phenotype** asks for a general description of the phenotype, which is the manifestation of a genetic trait. *Example:* Expression of the SV40 early region in the mammary and prostate epithelium leads to invasive carcinoma development over a predictable time course. The transgene is expressed in mammary ductal cells and the terminal ductal lobular unit in virgin animals and without hormone stimulation.
Gender	Select **Gender** information from the drop-down menu.

Table 3.2 Model Characteristics fields and their descriptions

Model Characteristics Text Fields	Description
Breeding Notes	Enter information about breeding problems or other issues related to the breeding of this model, for example, infertility in males. Information about homo- or heterozygosity can also be stored in this field. This information is especially valuable when the strain is kept heterozygous, but the phenotype occurs only in homozygous mice.
Website for added information:	Add a website URL where more information about the experiment(s) and/or models can be obtained.
***Record Release Date**	The date when the models records are to be released: You can choose between: **Option 1**: The record will be shown immediately. **Option 2**: The record will be shown after a specified date. Select the date from the calendar that pops up when you select the radio button. **Note:** The record must be approved before it will be displayed. NCICB will contact the submitter of the record about a week prior to the release date and confirm the date. If we do not receive a response from the submitter the record will not be displayed.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.2 Model Characteristics fields and their descriptions

3. Click the **Submit** button to execute the submission of the model information.

4. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Navigating a Data Tree

In many of the caMOD pages where you enter data for a model you are submitting, you can click a **Select** button which opens a data tree (independent of caMOD)

corresponding to the parameter associated with the **Select** button. For example, in the *Cell Lines* page, a **Select** button opens the Organ/Tissue data tree (*Figure 3.5*).
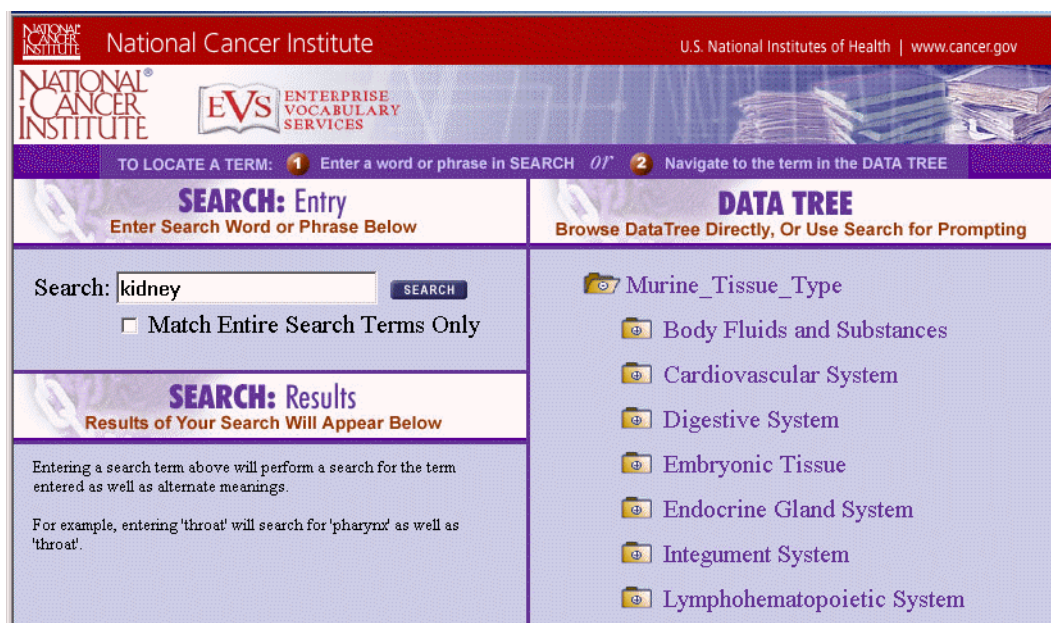
Figure 3.5 EVS Data Tree

To navigate a data tree:

1. Click the folder icon (📁) corresponding to a organ or tissue type or to a diagnosis to access items within the folder.

2. Click the sub-category words. When you see this icon, (🔘), you have located the basic level of the directory.

3. Click on your selection, and confirm the select by clicking **OK** in the confirmation dialog box that opens. When you do that, your Organ/Tissue/ Diagnosis selection appears in the caMOD form from which you accessed the data tree.

To initiate a search in the data tree:

1. Enter a term in the Search:Entry section in the upper left quadrant of the EVS Data Tree page.

2. Click **Search** to query the tree.

The search results display in the lower bottom-left corner of the data tree viewing window (*Figure 3.6*).
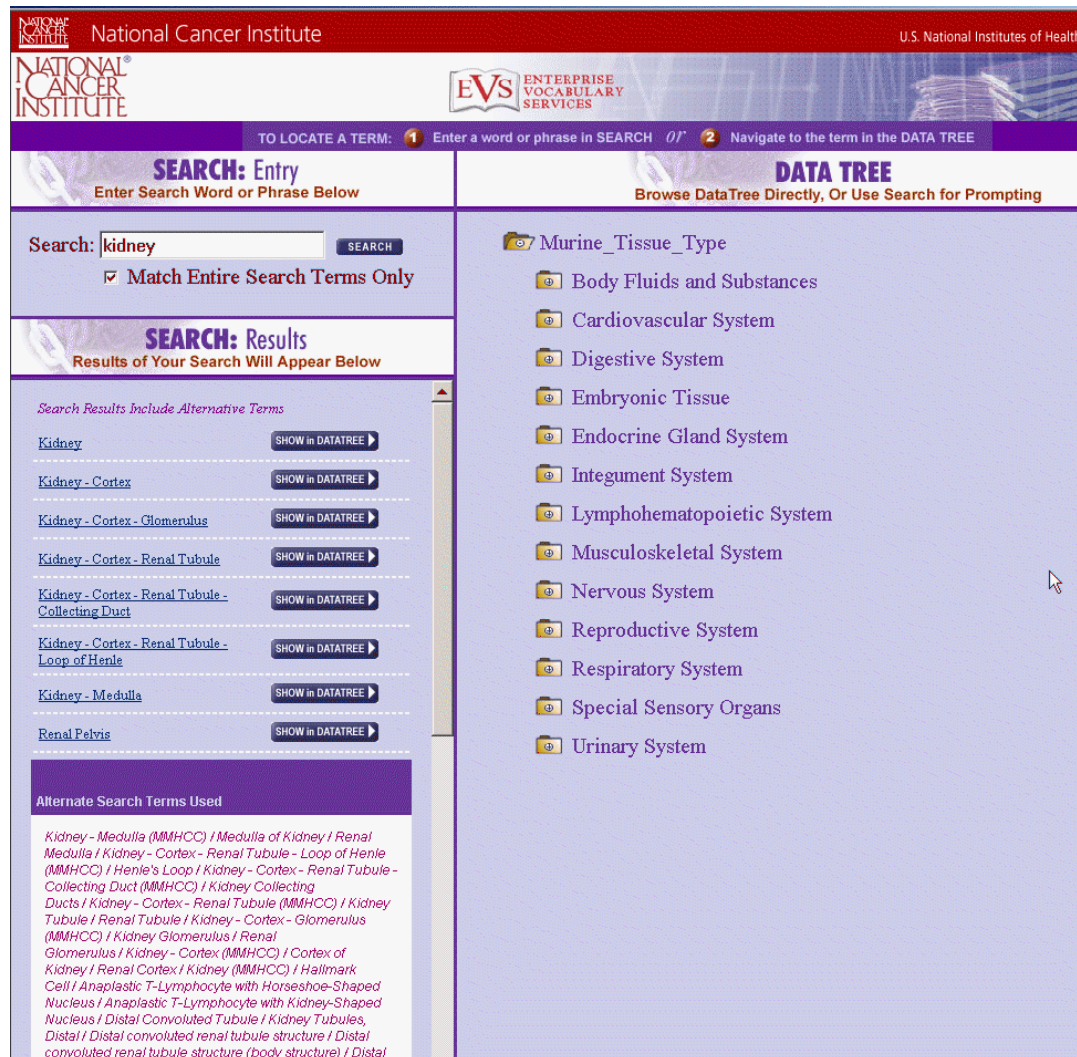
Figure 3.6 Data Tree search results

3. In the Search Results list, click a term directly to select it and return to the caMOD submission page, or click the **Show** button to open the Data Tree section on the right of the EVS Data Tree page. The data link you selected in the Search Results list displays open on the data tree in its position related to all other items listed on the Data Tree.

Notes about Data Tree Searches:

-   By default, the data tree performs searches for synonyms. For example, a search for "throat" returns the term "pharynx" as a match.

-   If you perform a search for a diagnosis and receive no results, you can submit a term to the database. Click the **Submit** button in the bottom left-hand corner of the Search Results section. In the dialog box that opens, enter the diagnosis term to be submitted and click **OK**. The term is stored in the caMOD database and will be sent to the Vocabulary team to be considered for permanent inclusion in the EVS. This feature exists only for diagnosis and not for anatomy.

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- For more information, see topics corresponding to data submission pages with the Organ/Tumor/Diagnosis options.

Genetic Description

Genetic description captures information about germ line mutations (which can be inherited by the next generation). In comparison, the *Carcinogenic Interventions* capture information about changes in the animals that are not heritable.

Transgene

To enter or edit the genetic description of the transgene for the animal model:

1. Click **Genetic Description** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Transgene** red hypertext link. This opens the Transgene form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Transgene Text Fields	*Description*
Transgene ● *Integration ● Location of Integration	Select the **Random** or **Targeted** radio button. Enter the locus for targeted integration, if you selected **Targeted**.
Transgene (Coding Sequence Only) ● *Transgene	Enter the **Transgene** name. **Species of Origin**--select from drop-down menu Enter **Other Species**, if relevant
Transcriptional Promoter ● *Transcriptional 1 ● Transcriptional 2 ● Transcriptional 3 ● Poly A Signal ● Splice Sites/Intron	For each, list the part of the Transgene construct, then select from the drop-down list, the **Species of Origin** or enter the **Other Species of Origin** if the correct one is not in the drop-down list. *Examples:* For the Promoter 'promoter of the whey acidic protein (WAP)', species: mouse'; for Poly-A site 'Poly-A site of beta-globin gene, species: rabbit.
Gene Functions (separate each by a comma)	List the function(s) of the mutated gene.
Conditional	The **Conditional** descriptor refers to a transgene that is only turned on under specific circumstances. Select a **Conditional** or **No Conditional** radio button.
Conditional Description	Enter a description of the **Conditional** circumstance, particularly specifying the conditions under which the transgene is active. Specify the promoter, the affected organs and the timepoint, where appropriate.

Table 3.3 Transgene fields and their descriptions

Transgene Text Fields	Description
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.
ZFIN Identifier	This field displays only if the model you select is a zebrafish. Enter the zebrafish (ZFIN) identifier of the modified allele which must include the prefix "ZDB-GENO-". *Example*: ZDB-GENO-050428-1. Click **Find ZFIN ID** to open the ZFIN website where you can learn more about the zebrafish, including the ZFIN ID for your model.
MGI Number	This field displays only if the model you select is a mouse. Enter the Mouse Genome Informatics (MGI) ID for this mutation.You must copy and paste the entire MGI ID (including "MGI") into this field. *Example*: MGI:2180054 Click **Find MGI ID** to open the MGI website where you can learn more about the MGI, including the MGI ID for your model.
RGD Identifier	This field displays only if the model you select is a rat. Enter the Rat Genome Database (RGD) ID for this mutation. Enter the number only. **Note:** You can copy and paste the RGD reference ID *number segment only* into this field. Do not copy and paste the prefix "RGD". *Example*: 70417. Click **Find RGD ID** to open the RGD website where you can learn more about the RGD, including the RGD ID for your model.

Table 3.3 Transgene fields and their descriptions

4. Under the gray line in the Transgene form, select or enter the requested information about the model construct, if you decide to upload a map of the construct. For more information, see the following section, *Model Construct*.

5. Click the **Submit** button to execute the submission of the model information.

6. Click **Reset** to return the form to default settings: If you are entering data for he first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Model Construct

Several caMOD forms for entering genetic description(s) of your model include a segment requesting information about the model construct. The requested information is summarized in *Table 3.4* :

Model Construct Fields	Description
Upload Construct Map	The construct map image can be uploaded here. Acceptable image file formats are: .jpg, .jpeg, .gif, .sid or .png. Use the Browse button to navigate to the image file on your computer.
Title of Construct	Enter the construct title (only necessary when you are uploading the image).
Description of Construct	Enter a description of the construct (only necessary when you are uploading the image).

Model Construct Fields	Description
Construct Sequence	Add the sequence of the construct. This allows users to use sequence editing software.

Table 3.4 Construct fields for entering a genetic description for your model

Associated Expression

Once you have submitted data to the Transgene, Genomic Segment or the Targeted Modification pages, the entry is listed under the Transgene, Genomic Segment or the Targeted Modification categories in the Submit and Edit Models listing on the left-hand side of the browser. The **Enter Associated Expression** option displays (in brown text, indicating an active option) under the entered item.

To enter or edit associated expression for a model:

1. Click **Enter Assoc[iated] Expression**.

2. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Associated Expression Fields	Description
Organ/Tissue	The available options correspond to the donor species you specified for this model. ● If the **Select** button displays (**Mouse**, **Rat** or **Zebrafish**), click it to open an **Organ/Tissue** data tree that corresponds to the donor species. Select from the vocabulary tree the Organ or Tissue in which the transgene, the genomic segment or targeted modification was found. ● If no **Select** button displays, enter the Organ or Tissue in the text field.
Expression Level	Select from the list of expression descriptions in the drop-down menu how the transgene, the genomic segment or the targeted modification affected the expression level.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.5 Associated Expression fields and their descriptions

3. Click the **Submit** button to execute the submission of the model information.

4. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Genomic Segment

To enter or edit the genomic segment information for an animal model:

1. Click **Genetic Description** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Genomic Segment** red hypertext link. This opens the Genomic Segment form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Genomic Segment Text Fields	*Description*
*Integration **Location of Integration**	Select the **Random** or **Targeted** radio button, indicating whether the integration of the genomic segment was random or targeted. If you selected Targeted [Integration], enter the location of integration of the genomic segment into the genome (i.e. chromosome locus).
*Segment Type	Select the Segment Type from the drop-down list: Cosmid, YAC, BAC or Plasmid; If the appropriate Segment Type is not listed, select **Other** from the drop-down list and enter the **Other Segment Type** in the text field under the list.
Other Segment Type	Enter **Segment Type** that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Segment Size	Enter appropriate segment size information.
*Designator	Clone Designator: Indicate the location of the clone in the library, *for example,* RPCI Human Male Library, 24F11.
Comment	Enter any information that did not fit or was not suitable for other fields on the page.
ZFIN Identifier	This field displays only if the model you select is a zebrafish. Enter the zebrafish (ZFIN) identifier of the modified allele which must include the prefix "ZDB-GENO-". *Example*: ZDB-GENO-050428-1. Click **Find ZFIN ID** to open the ZFIN website where you can learn more about the zebrafish, including the ZFIN ID for your model.
MGI Number	This field displays only if the model you select is a mouse. Enter the Mouse Genome Informatics (MGI) ID for this mutation.You must copy and paste the entire MGI ID (including "MGI") into this field. *Example*: MGI:2180054 Click **Find MGI ID** to open the MGI website where you can learn more about the MGI, including the MGI ID for your model.

Table 3.6 Genomic Segment fields and their descriptions

Genomic Segment Text Fields	Description
RGD Identifier	This field displays only if the model you select is a rat. Enter the Rat Genome Database (RGD) ID for this mutation. Enter the number only. **Note:** You can copy and paste the RGD reference ID *number segment only* into this field. Do not copy and paste the prefix "RGD". *Example*: 70417.
	Click **Find RGD ID** to open the RGD website where you can learn more about the RGD, including the RGD ID for your model.

Table 3.6 Genomic Segment fields and their descriptions

4. Under the gray line in the Genomic Segment form, select or enter the requested information about the model construct, if you decide to upload a map of the construct. For more information, see *Model Construct* on page 45.

5. Click the **Submit** button to execute the submission of the model information.

6. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Targeted Modification

To enter or edit the Targeted Modification information for an animal model:

1. Click **Genetic Description** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Targeted Modification** red hypertext link. This opens the Targeted Modification form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Targeted Modification Text Fields	Description
*Targeted Gene/Locus	Define the gene or region in the genome that are altered by the substitution of a DNA construct.

Table 3.7 Targeted Modification fields and their descriptions

Targeted Modification Text Fields	*Description*
*Type of Modification	Select one or more mutation types from the drop-down menu. Examples: ● **Null Modification**--a type of modification in which the altered gene product lacks the molecular function of the wild-type gene ● **Amino Acid**--modification that alters one or more amino acids ● **Insertion**--insertion of one or more residues in the molecular structure ● **Missense**--a codon specifying one amino acid altered so as to specify a different amino acid **Note:** For this field, you can select multiple choices using standard selection techniques (CTRL + click or Command + click with a Macintosh). If one of your choices is not listed, select **Other** from the drop-down list and enter the **Other Modification Type** in the text field under the list.
Other Modification Type	Describe any appropriate type of modification. **Note:** This field is only writable after you select Other in the previous field.
Entrez Gene ID	Enter gene Entrez ID number. Click the **Find Gene ID** button for a link to Entrez where you can locate the ID.
Genetic Background	Enter the appropriate information regarding the genetic background. ES Cell Line: The name of the Embryonic Stem Cell line that was used to insert the DNA construct with the alteration. When incorporated into chimeric mouse embryos, they are totipotent: they can differentiate into any cell type in the mouse. Blastocyst: Strain background of the blastocysts in which the modification-carrying ES cells were inserted.
Conditional?	Select the **Conditional** or **Not Conditional** radio button.
Conditional Description	Where appropriate, enter the description of the strategy to generate a conditional modification. Conditional modification is most commonly used to represent Cre-mediated excision of genomic sequences flanked by loxP sites. The excised genotype, which is often associated with a phenotype, is dependent (or conditional) on the presence of the Cre-expressing construct.
Comment	Enter any information that did not fit or was not suitable for other fields on the page.
ZFIN Identifier	This field displays only if the model you select is a zebrafish. Enter the zebrafish (ZFIN) identifier of the modified allele which must include the prefix "ZDB-GENO-". *Example*: ZDB-GENO-050428-1. Click **Find ZFIN ID** to open the ZFIN website where you can learn more about the zebrafish, including the ZFIN ID for your model.

Table 3.7 Targeted Modification fields and their descriptions

Targeted Modification Text Fields	Description
MGI Number	This field displays only if the model you select is a mouse. Enter the Mouse Genome Informatics (MGI) ID for this mutation. You must copy and paste the entire MGI ID (including "MGI") into this field. *Example*: MGI:2180054 Click **Find MGI ID** to open the MGI website where you can learn more about the MGI, including the MGI ID for your model.
RGD Identifier	This field displays only if the model you select is a rat. Enter the Rat Genome Database (RGD) ID for this mutation. Enter the number only. **Note:** You can copy and paste the RGD reference ID *number segment only* into this field. Do not copy and paste the prefix "RGD". *Example*: 70417 Click **Find RGD ID** to open the RGD website where you can learn more about the RGD, including the RGD ID for your model.

Table 3.7 Targeted Modification fields and their descriptions

4. Under the gray line on the Targeted Modification form, select or enter the requested information about the model construct, if you decide to upload a map of the construct. For more information, see *Model Construct* on page 45.

5. Click the **Submit** button to execute the submission of the model information.

6. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Induced Mutation

The "induced mutation" page gathers information about mutations that were triggered by chemicals, radiation or other types of mutagenes and that become hereditary.

To enter or edit the Induced Mutation information for an animal model:

1. Click **Genetic Description** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Induced Mutation** red hypertext link. This opens the Induced Mutation form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Induced Mutation Text Fields	Description
***Name of Inducing Agent**	Enter the name of the agent inducing the mutation.

Table 3.8 Induced Mutation fields and their descriptions

Induced Mutation Text Fields	*Description*
*Inducing Agent Category	Inducing agent is that which caused the mutation. Select the agent category from the drop-down list or select **Other** and enter an agent category not found in the drop-down list in the following text box.
Other Category	Enter the Induced Mutation Category that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
CAS Number	Enter the Chemical Abstracts Service (CAS) number for a chemical or drug. Use the provided hypertext link (Find CAS#) to find the CAS number. Copy the number and paste into the field on the caMOD Chemical/Drug page. **Note:** You can also retrieve the CAS number from the DTP page described in the previous row of this table. It will display with the NSC number on the Chemical/Drug page.
Entrez Gene ID	Enter the Gene Entrez ID number. Click the **Find ID** button for a link to Entrez where you can locate the ID.
Description	Describe in the text field how the mutation was induced.
Observation	Note the genetic mutations that were observed.
Method of Observation	Explain how you learned about the gene(s) that were modified? **Note:** This field becomes writable only after you have entered information in the Observation field.
ZFIN Identifier	This field displays only if the model you select is a zebrafish. Enter the zebrafish (ZFIN) identifier of the modified allele which must include the prefix "ZDB-GENO-". *Example*: ZDB-GENO-050428-1. Click **Find ZFIN ID** to open the ZFIN website where you can learn more about the zebrafish, including the ZFIN ID for your model.
MGI Number	This field displays only if the model you select is a mouse. Enter the Mouse Genome Informatics (MGI) ID for this mutation.You must copy and paste the entire MGI ID (including "MGI") into this field. *Example*: MGI:2180054 Click **Find MGI ID** to open the MGI website where you can learn more about the MGI, including the MGI ID for your model.
RGD Identifier	This field displays only if the model you select is a rat. Enter the Rat Genome Database (RGD) ID for this mutation. Enter the number only. **Note:** You can copy and paste the RGD reference ID *number segment only* into this field. Do not copy and paste the prefix "RGD". *Example*: 70417. Click **Find RGD ID** to open the RGD website where you can learn more about the RGD, including the RGD ID for your model.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.8 Induced Mutation fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Spontaneous Mutation

To enter or edit the Spontaneous Mutation information for an animal model:

1. Click **Genetic Description** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Spontaneous Mutation** red hypertext link. This opens the Spontaneous Mutation form.

3. Enter or select the appropriate information about your animal model in the text entry fields.

Spontaneous Mutation Text Fields	*Description*
Gene Name*	Enter the name of the gene in which the spontaneous mutation occurred.
Observation	Note the genetic changes that were observed.
Method of Observation	Specify the method(s) used to discover the genetic changes. Include the technology and the tests that were used. **Note:** This field becomes writable only after you have entered information in the Observation field.
Entrez Gene ID	Enter the Gene Entrez ID number. Click the **Find ID** button for a link to Entrez where you can locate the ID.
ZFIN Identifier	This field displays only if the model you select is a zebrafish. Enter the zebrafish (ZFIN) identifier of the modified allele which must include the prefix "ZDB-GENO-". *Example*: ZDB-GENO-050428-1. Click **Find ZFIN ID** to open the ZFIN website where you can learn more about the zebrafish, including the ZFIN ID for your model.
MGI Number	This field displays only if the model you select is a mouse. Enter the Mouse Genome Informatics (MGI) ID for this mutation. You must copy and paste the entire MGI ID (including "MGI") into this field. *Example*: MGI:2180054 Click **Find MGI ID** to open the MGI website where you can learn more about the MGI, including the MGI ID for your model.

Table 3.9 Spontaneous Mutation fields and their descriptions

Spontaneous Mutation Text Fields	Description
RGD Identifier	This field displays only if the model you select is a rat. Enter the Rat Genome Database (RGD) ID for this mutation. Enter the number only. **Note:** You can copy and paste the RGD reference ID *number segment only* into this field. Do not copy and paste the prefix "RGD". *Example*: 70417. Click **Find RGD ID** to open the RGD website where you can learn more about the RGD, including the RGD ID for your model.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.9 Spontaneous Mutation fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Carcinogenic Interventions

Carcinogenic interventions capture information about changes in the animals that are not heritable. In contrast, *Genetic Description* captures information about germ line mutations (which can be inherited by the next generation).

Data submitted to the carcinogenic interventions pages describe treatments that are designed to trigger or accelerate tumor development. All treatments intended to prevent, slow down, or otherwise treat cancerous growth should be submitted as therapeutic experiments. See *Therapy* for more information.

Chemical/Drug

To enter or edit a chemical or drug for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Chemical/Drug** red hypertext link. This opens the Chemical/Drug form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Chemical/Drug Fields	Description
*Chemical/Drug	Select the Chemical or Drug from the drop-down list. If the appropriate Chemical/Drug is not listed, select Other from the drop-down list and enter the Other Chemical/Drug in the text field under the list.
Other Chemical/Drug	Enter Chemical/Drug that is not listed in the drop-down list. Note: This field is only writable after you select Other in the previous field.
Dose/Units	Enter the dose of the chemical agent or drug given. Select the dosage units from the drop-down menu. **Note:** If the dose unit you are looking for is not available in the drop down list, manually enter the dose unit together with the amount in the text field. When you return to the page, your dose unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the dose unit information, you must delete the current dose unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new dose unit entry will be added to the
NSC number	Enter the **NSC number** in the text box. The NSC number is a unique drug identifier issued by the Nomenclature Standards Committee (NSC) of the U.S Food and Drug Administration. ● If you don't know the number, click the **Find NSC#** button. The button opens a page at the Developmental Therapeutics Program (DTP) at NCI which allows you to find the NSC number for a specific drug. ● On the DTP page, select **Chemical Name Starts** or **Chemical Name Number**. (By default, the radio button is set to find the NSC number.) ● Enter text in the Search Parameters field, and click **Submit**. ● Once you have found the NSC number, copy the number from the field onto the field on the caMOD Chemical/Drug page.
CAS number	Enter the **Chemical Abstracts Service (CAS)** number for a chemical or drug. Use the provided hypertext link (**Find CAS#**) to find the CAS number. Copy the number and paste into the field on the caMOD Chemical/Drug page. **Note:** You can also retrieve the CAS number from the DTP page described in the previous row of this table. It will display with the NSC number on the Chemical/Drug page.
Administrative Route	Select the course in which a drug was administered in order to reach the site of action in the body. If the appropriate route is not listed, select **Other** from the drop-down list and enter the **Other Administrative Route** in the text field under the list.

Table 3.10 Chemical/Drug fields and their descriptions

Chemical/Drug Fields	*Description*
Other Administrative Route	Enter Administrative Route that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Treatment Regimen	Enter times and intervals in which the treatment was administered.
Age at Treatment	Enter age information in the text box and from the drop-down list.
	Note: If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Gender	Select gender from the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.10 Chemical/Drug fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Environmental Factor

To enter or edit an environmental factor for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Environmental Factor** red hypertext link. This opens the Environmental Factor form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Environmental Factor Fields	*Description*
*Environmental Factor	Select the appropriate **Environmental Factor** from the drop-down list. If the appropriate Environmental Factor is not listed, select **Other** from the drop-down list and enter the **Other Environmental Factor** in the text field under the list.

Table 3.11 Environmental factor fields and their descriptions

Environmental Factor Fields	Description
Other Environmental Factor	Enter **Environmental Factor** that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Dose	Enter the dose of the agent given. Select the dosage units from the drop-down menu.
	Note: If the dose unit you are looking for is not available in the drop down list, manually enter the dose unit together with the amount in the text field. When you return to the page, your dose unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the dose unit information, you must delete the current dose unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new dose unit entry will be added to the old entry.
Administrative Route	Select the course in which the environmental factor was administered in order to reach the site of action in the body. If the appropriate route is not listed, select **Other** from the drop-down list and enter the **Other Administrative Route** in the text field under the list.
Other Administrative Route	Enter **Administrative Route** that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Treatment Regimen	Enter times and intervals in which the treatment was administered.
Age at Treatment	Enter age information in the text box and from the drop-down list.
	Note: If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Gender	Select the gender from the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.11 Environmental factor fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Gene Delivery

To enter or edit the gene delivery for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Gene Delivery** red hypertext link. This opens the Gene Delivery form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Gene Delivery Fields	Description
*Viral Vector	From the drop-down lis, select the **Viral Vector** used to deliver the gene. If the appropriate Viral Vector is not listed, select **Other** from the drop-down list and enter the **Other Viral Vector** in the corresponding text field.
Other Viral Vector	Enter Viral Vector that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
*Gene	Enter the effective gene delivered by the viral vector.
Treatment Regimen	Enter times and intervals in which the treatment was administered.
Injection Site	Click the **Select** button. Select from the organ/tissue vocabulary tree that opens the organ or tissue used as the location of delivery for this gene.
Age at Treatment	Enter animal age information in the text box and from the drop-down list. **Note:** If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.12 Gene Delivery fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Growth Factor

To enter or edit a growth factor for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Growth Factor** red hypertext link. This opens the Growth Factor form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Growth Factor Fields	*Description*
*****Growth Factor**	Select the **Growth Factor** from the drop-down list. If the appropriate Growth Factor is not listed, select **Other** from the drop-down list and enter the Other Growth Factor in the corresponding text field.
Other Growth Factor	Enter the Growth Factor that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Dose	Enter the dose of the Growth Factor given. Select the dosage units from the drop-down menu. **Note:** If the dose unit you are looking for is not available in the drop down list, manually enter the dose unit together with the amount in the text field. When you return to the page, your dose unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the dose unit information, you must delete the current dose unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new dose unit entry will be added to the old entry.
Administrative Route	Select the course in which a growth factor was administered in order to reach the site of action in the body. If the appropriate Administrative Route is not listed, select **Other** from the drop-down list and enter the **Other Administrative Route** in the corresponding text field.
Other Administrative Route	Enter the Administrative Route that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Treatment Regimen	Enter times and intervals in which the treatment was administered.

Table 3.13 Growth factor fields and their descriptions

Growth Factor Fields	*Description*
Age at Treatment	Enter age information in the text box and from the drop-down list.
	Note: If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Gender	Select gender from the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.13 Growth factor fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Hormone

To enter or edit a hormone for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) Submit button in other caMOD viewers.

2. Click the **Enter Hormone** red hypertext link. This opens the Hormone form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Hormone Fields	*Description*
*Hormone	Select the **Hormone** from the drop-down list. If the appropriate Hormone is not listed, select **Other** from the drop-down list and enter the **Other Hormone** in the text field under the list.
Other Hormone	Enter Hormone that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.

Table 3.14 Hormone fields and their descriptions

Hormone Fields	Description
Dose	Enter the dose of the Hormone given. Select the dosage units from the drop-down menu.
	Note: If the dose unit you are looking for is not available in the drop down list, manually enter the dose unit together with the amount in the text field. When you return to the page, your dose unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the dose unit information, you must delete the current dose unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new dose unit entry will be added to the old entry.
Administrative Route	Select the course in which a Hormone was administered to reach the site of action in the body. If the appropriate route is not listed, select **Other** from the drop-down list and enter the **Other Administrative Route** in the text field under the list.
Other Administrative Route	Enter the Administrative Route that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Treatment Regimen	Enter times and intervals in which the treatment was administered.
Age at Treatment	Enter age information in the text box and from the drop-down list.
	Note: If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Gender	Select gender from the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.14 Hormone fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Nutritional Factor

To enter or edit a nutritional factor for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Nutritional Factor** red hypertext link. This opens the Nutritional Factor form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Nutritional Factor Fields	*Description*
*Nutritional Factor	Select the appropriate **Nutritional Factor** from the drop-down list. If the appropriate Nutritional Factor is not listed, select **Other** from the drop-down list and enter the **Other Nutritional Factor** in the text field under the list.
Other Nutritional Factor	Enter Nutritional Factor that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Dose	Enter the dose of the nutritional factor given. Select the dosage units from the drop-down menu. **Note:** If the dose unit you are looking for is not available in the drop down list, manually enter the dose unit together with the amount in the text field. When you return to the page, your dose unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the dose unit information, you must delete the current dose unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new dose unit entry will be added to the old entry.
Treatment Regimen	Enter times and intervals in which the treatment was administered.
Age at Treatment	Enter age information in the text box and from the drop-down list. **Note:** If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Gender	Select gender from the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.15 Nutritional factor fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Radiation

To enter or edit radiation for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Radiation** red hypertext link. This opens the Radiation form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Radiation Fields	*Description*
*Radiation	Select the type of radiation from the drop-down list. If the appropriate Radiation is not listed, select Other from the drop-down list and enter the Other Radiation in the corresponding text field.
Other Radiation	Enter Radiation that is not listed in the drop-down list. Note: This field is only writable after you select Other in the previous field.
Dose	Enter the dose of the Radiation given. Select the dosage units from the drop-down menu. **Note:** If the dose unit you are looking for is not available in the drop down list, manually enter the dose unit together with the amount in the text field. When you return to the page, your dose unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the dose unit information, you must delete the current dose unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new dose unit entry will be added to the old entry.
Administrative Route	Select the course in which a drug was administered in order to reach the site of action in the body. If the appropriate route is not listed, select Other from the drop-down list and enter the **Other Administrative Route** in the corresponding text field.
Other Administrative Route	Enter Administrative Route that is not listed in the drop-down list. **Note:** This field is only writable after you select Other in the previous field.
Treatment Regimen	Enter times and intervals in which the treatment was administered.
Age at Treatment	Enter age information in the text box and from the drop-down list. **Note:** If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Gender	Select gender from the drop-down list.

Table 3.16 Radiation fields and their descriptions

Radiation Fields	Description
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.16 Radiation fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, Reset returns the form back to the unmodified state (the default).

Surgery

To enter or edit the surgery for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Surgery/Other** red hypertext link. This opens the Surgery form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Surgery Fields	Description
*Surgery	Select the type of **Surgery** from the drop-down list. If the appropriate Surgery is not listed, select **Other** from the drop-down list and enter the **Other Surgery** in the text field under the list.
Other Surgery	Enter **Surgery** that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Treatment Regimen	Enter times and intervals in which the experiment and/or treatment was administered.
Age at Treatment	In the text box and from the drop-down list, enter the age of the model at the time of surgery.
	Note: If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Gender	Select gender from the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.17 Surgery fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Viral Treatment

To enter or edit the viral treatment for an animal model:

1. Click **Carcinogenic Interventions** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Viral Treatment** red hypertext link. This opens the Viral Treatment form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Viral Treatment Fields	Description
*Virus	Select the **Viral Treatment** from the drop-down list. If the appropriate Virus is not listed, select **Other** from the drop-down list and enter the **Other Virus** in the text field under the list.
Other Virus	Enter Virus that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Administrative Route	Select the course in which a viral treatment was administered to reach the site of action in the body. If the appropriate route is not listed, select Other from the drop-down list and enter the Other Administrative Route in the text field under the list.
Other Administrative Route	Enter **Administrative Route** that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Dose	Enter the **Dose** of the viral treatment given. Select the dosage units from the drop-down menu. **Note:** If the dose unit you are looking for is not available in the drop down list, manually enter the dose unit together with the amount in the text field. When you return to the page, your dose unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the dose unit information, you must delete the current dose unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new dose unit entry will be added to the old entry.
Treatment Regimen	Enter times and intervals in which the treatment was administered.

Table 3.18 Viral fields and their descriptions

Viral Treatment Fields	*Description*
Age at Treatment	Enter age information in the text box and from the drop-down list.
	Note: If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Gender	Select **Gender** from the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.18 Viral fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Transient Interference

Transient Interference includes two categories of small oligonucleotides used to interfere with the translation of messenger RNA, thus knocking down gene function: *Morpholinos* and *siRNA*.

Morpholinos

This category is included in caMOD for working with zebrafish. The primary tools for such work are "morpholinos".   Morpholinos, or morpholino phosphorodiamidate oligonucleotides (MOs), are small antisense molecules (about 25 nucleotides) that are used to block regions of RNA and thus knock down a gene function. MOs are the main tool for reverse genetics in fish models.

To enter or edit the morpholino information for an animal model:

1. Click **Transient Interference** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Morpholino** red hypertext link. This opens the Morpholino form.

3. Enter or select the appropriate information about your morpholino in the text entry fields. Items with an asterisk are required fields.

Morpholino Fields	*Description*
Source	Select the source of the morpholino in the drop-down menu. Options are companies that make morpholinos: **Gene Tool**; **Biosystem** If the appropriate source is not listed, select **Other** from the drop-down list and enter the Other Source in the corresponding text field.
Other Source	Enter the morpholino source that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Type	Select from the drop-down menu the morpholino type, **Custom** or **Standard**.
Sequence Direction	Select the sequence direction in the drop-down menu: **5' - 3'** or **3' - 5'**.
*Targeted Region	Enter the **Targeted Region** (gene or gene product to be knocked down) affected by the morpholino in the text box. **Note:** After the data have been submitted, the morpholino is identified under the **Transient Interference > Morpholino** category by the term used in this text box.
Concentration	Enter the **Concentration** of the sample in value and measurement units.
Delivery Method	Select from the drop-down menu the method used to deliver the MOs. If the appropriate method is not listed, select **Other** from the drop-down list and enter the **Other Delivery Method** in the corresponding text field.
Other Delivery Method	Enter **Other Delivery Method** that is not listed in the drop-down list.
Target Site	Select the region within the gene you target (start site or splice site).
Visualization Ligands	Since zebrafish embryos are clear, MOs are combined with fluorescent ligands for visualization purposes. For example, fluorescein isothiocyanate is a visualization ligand.
Other Visualization Ligands	Enter **Other Visualization Ligand** that is not listed in the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.19 Morpholino fields and description for transient interference

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing

data for an existing model, **Reset** returns the form back to the unmodified state (the default).

siRNA

The siRNA details page is included in caMOD for working with all animal models.

siRNA stands for "short interfering RNA", or small strands of RNA that interfere with the translation of messenger RNA. An siRNA is an intermediate in the RNAi process in which the long double-stranded RNA has been cut up into short (~21 nucleotides) double-stranded RNA. The siRNA stimulates the cellular machinery to cut up other single-stranded RNA having the same sequence as the siRNA

siRNA's effect of inhibiting gene expression is commonly known as gene "silencing" (also called RNA silencing)--a method that allows one to "knock down" expression of genes in a sequence-specific fashion. Although RNA silencing occurs naturally to protect organisms from aberrant transcription, it is now being exploited to silence genes implicated in diseases and to determine the functions of various genes.

Double stranded siRNA works better than single stranded siRNA. siRNA are usually 21 to 23 nucteotides long. They bind to the complementary portion of the target messenger RNA and tag it for degradation.

To enter or edit the siRNA information for an animal model:

1. Click **Transient Interference** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter siRNA** red hypertext link. This opens the siRNA form.

3. Enter or select the appropriate information about your siRNA molecule in the text entry fields. Items with an asterisk are required fields.

4. Fill in correct fields and describe.

siRNA Fields	*Description*
Source	Select the source of the siRNA in the drop-down menu. Options are companies that make siRNAs: **Gene Tool**; **Biosystem** If the appropriate source is not listed, select **Other** from the drop-down list and enter the Other Source in the corresponding text field.
Other Source	Enter the siRNA source that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Type	Select from the drop-down menu the siRNA type, **Custom** or **Standard**.
Sequence Direction	Select the sequence direction in the drop-down menu: **5' - 3'** or **3' - 5'**.

Table 3.20 siRNA fields and descriptions for transient interference

siRNA Fields	*Description*
*Targeted Region	Enter the **Targeted Region** (site or locus) affected by the siRNA in the text box. **Note:** After the data have been submitted, the siRNA is identified under the **Transient Interference > siRNA** category by the term used in this text box.
Concentration	Enter the **Concentration** of the sample in value and measurement units.
Delivery Method	Select from the drop-down menu the method used to deliver the siRNAs. If the appropriate method is not listed, select **Other** from the drop-down list and enter the **Other Delivery Method** in the corresponding text field.
Other Delivery Method	Enter **Other Delivery Method** that is not listed in the drop-down list.
Visualization Ligands	siRNAs can be combined with fluorescent ligands for visualization purposes. For example, fluorescein isothiocyanate is a visualization ligand. Enter the visualization ligand used, if appropriate.
Other Visualization Ligands	Enter **Other Visualization Ligand** that is not listed in the drop-down list.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.20 siRNA fields and descriptions for transient interference (Continued)

5. Click the **Submit** button to execute the submission of the model information.

6. Click **Reset** to return the form to default settings: If you are entering data for the first time, Reset clears the form (resets it to its defaults). If you are changing data for an existing model, Reset returns the form back to the unmodified state (the default).

Publications

To enter or edit the information about publications:

1. Click **Publications** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Publication** red hypertext link. This opens the Publications form.

3. Enter or select the appropriate information about publications related to your animal model in the text entry fields. Items with an asterisk are required fields.

Publications Fields	Description
*First Author	Primary author for the publication
*Publication Status	Select Published or Unpublished. Unpublished can include work that is submitted or in preparation.
*Publication where reported first time?	Is this the publication where the animal model being entered was described for the first time? Select Yes or No.
**PubMed ID (PMID)	Enter the PubMed ID (PMID) or click the link to look up the PubMed ID. Enter it in the appropriate field. Click the **Fill In Fields** button. caMOD automatically retrieves the publication information based on the PubMed ID and populates the Publications form fields identified in this table with bullets. **Note:** For books and journals not listed in PubMed, enter the appropriate information on this form.
ZFIN Number	This field displays only if the model you select is a zebrafish. Enter the ZFIN identifier of the publication. **Note:** You can copy and paste an entire ZFIN ID into this field.which must include the prefix "ZDB-GENO-". *Example*: ZDB-GENO-050428-1. Click **Find ZFIN ID** to open the ZFIN website where you can learn more about the zebrafish, including the ZFIN ID for your model.
J Number	This field displays if you enter any animal model *other than* a zebrafish or rat. J Number is an internal identifier for a publication used by the Jackson Laboratory. Enter this internal identifier in the appropriate text field. Click the **Find J#** button to open the MGI Reference Query form where you can enter the identifying information to find the J Number. The J Number must include the prefix "J:". *Example*: J:134077.
RGD Identifier	This field displays only if the model you select is a rat model. Enter the Rat Genome Database (RGD) identifier of the publication. Enter the number only. **Note:** You can copy and paste the RGD reference ID *number segment only* into this field. Do not copy and paste the prefix "RGD". *Example*: 70417. Click **Find RGD ID** to open the RGD website where you can learn more about the RGD, including the RGD ID for your model.
**Title of Publication ● Year of Publication ● Journal ● Volume ● Start Page ● End Page	These fields are populated automatically when a publication is identified with the PubMed ID and the **Fill In Fields** button is clicked. See previous row in this table. If you cannot or do not locate the publication on PubMed, enter this information manually.
Abstract in PubMed	**Note:** This field displays on the Publications form only after you have submitted Publications information for a model. Click the **PubMed** icon to look up the abstract in PubMed.

Table 3.21 Publications fields and their descriptions

Publications Fields	Description
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.21 Publications fields and their descriptions

4. Click the **Submit** button to send the publication to the database.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

**Either the PMID or Title of Publication (not both) is a required field.

Histopathology

To enter or edit the histopathology for an animal model:

1. Click **Histopathology** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options display only after you have clicked the (model) Submit button in other caMOD viewers.

2. Click the **Enter Histopathology** red hypertext link.

    Note about previous submissions: Subheadings indicate organ metastasis; metastasis originated in the organ in the top-level heading.
    º Blue text = an item that has already been entered into the caMOD database.

    º Brown text = places where you can enter metastases or clinical markers.

    Example: This model has a tumor in the mammary gland and a tumor in the liver, both of which are already entered in the database. The liver cancer has metastasized to the heart (sub-topic to liver), data which has also been entered into the database.

3. To add associated metastases, click on the brown hypertext link. To enter information about a Clinical Marker, click the associated brown hypertext link.

    Note: These two options become available only after you have entered a primary tumor.

4. In the Histopathology form, enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Histopathology Fields	Description
*Site of Lesion/Tumor	The available options correspond to the donor species you specified for this model. ● If the **Select** button displays (**Mouse**, **Rat** or **Zebrafish**), click it to open a Lesion or Tumor Site data tree that corresponds to the donor species. Select from the vocabulary tree the site indicated for this histopathology specimen. ● If no **Select** button displays, enter the Tumor or Lesion Site in the text field.
*Diagnosis	The available options correspond to the donor species you specified for this model. ● If the **Select** button displays (**Mouse** or **Rat**), click it to open a diagnosis data tree that corresponds to the donor species. Select from the vocabulary tree the disease indicated for this histopathology specimen. ● If a drop-down arrow displays (**Zebrafish**), select the appropriate diagnosis. If the appropriate diagnosis is not listed, select **Other** from the drop-down list and enter the **Other Diagnosis** in the corresponding text field. ● If no **Select** button displays, enter the diagnosis in the text field.
Other Diagnosis	**Note:** This field displays only for Zebrafish models. Enter **Other Diagnosis** that is not listed in the previous drop-down list.
Age of Tumor Onset	Average age of the animal when the lesion / tumor is first detectable. Enter age information in the text box or from the drop-down list. **Note:** If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Age of Tumor Detection	Age of the animal when the lesion/tumor was detected. **Note:** If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.

Table 3.22 Histopathology fields and their descriptions

Histopathology Fields	*Description*
Average Weight of Tumor (mg)	Enter the average weight of the tumor.
Average Volume of Tumor (mm3)	Enter the average volume of the tumor.
Tumor Incidence over Lifetime (%)	Incidence is the number of new cases of a condition, symptom, death, or injury that arise during a specific period of time, such as a year. It is often expressed as percentage of a population (e.g. 25% of American residents were diagnosed with the flu in 2002.) Incidence conveys the likelihood that an individual in that population will be affected by the condition. Enter percentage of the population of animals that develops a specific type of lesion/ tumor. (Numbers only)
Survival Information	Indicate the age when the animals expire or must be sacrificed due to the tumor burden.
Gross Description/ Macroscopic Description	Describe structural and functional changes resulting from the disease processes; can be detected by the unaided eye.
Microscopic Description	Describe structural and functional changes resulting from the disease processes; could not be detected by the unaided eye.
Genetic Alterations found in Tumor	Describe genetic alterations found in the tumor other than the changes that were deliberately introduced to generate this model.
Method of Observation	Describe methods by which genetic alterations were discovered.
Comparative Data from Other Species	Describe occurrences found in humans or other species.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.22 Histopathology fields and their descriptions

5. Click the **Submit** button to execute the submission of the model information.

6. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Note: The link for Clinical Markers displays only after you have entered a primary tumor or metastasis.

When you open the Histopathology page for a submitted model, the tumor and diagnosis identified for the model displays at the top of the page.

Clinical Marker

Clinical Marker information is added to a model associated with histopathology data.

To enter or edit the histopathology for an animal model:

1. Click **Histopathology** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Once you have submitted histopathology information for your model, the entry is listed (in blue, indicating submitted information) by its specified organ-type under the Histopathology category. At that point, the **Enter Associated Metastasis** and **Enter Clinical Markers** options (in brown, indicating active options) display under the organ-type listing.

3. Click the **Enter Clinical Marker** brown hypertext link.

   Note: The link for Clinical Markers displays only after you have entered a primary tumor.

4. Enter or select the appropriate information about the clinical markers and their values for your animal model in the text entry fields. Items with an asterisk are required fields.

Clinical Marker Fields	*Description*
*Clinical Marker	Select the Clinical Marker from the drop-down menu.
Value	Enter the appropriate value for the marker in the text field.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Clinical Marker fields and their descriptions

5. Click the **Submit** button to execute the submission of the model information.

6. Click **Reset** to return the form to default settings: If you are entering data for the first time, Reset clears the form (resets it to its defaults). If you are changing data for an existing model, Reset returns the form back to the unmodified state (the default).

Metastasis

To enter or edit the Metastasis information, a subheading under the Histopathology category, for a animal model:

1. Click **Histopathology** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options display only after you have clicked the (model) Submit button in other caMOD viewers.

   Note: Subheadings indicate organ metastasis; if listed as a subheading, the metastasis originated in the organ in the top-level heading.
   ° Blue text = an item that has already been entered into the caMOD database.

      ° Brown text = places where you can enter metastases or clinical markers.

Example: This model has a tumor in the mammary gland and a tumor in the liver, both of which are already entered in the database. The liver cancer has metastasized to the heart (sub-topic to liver), data which has also been entered into the database.

2. Click **Enter Associated Metastasis** (brown text) under the appropriate organ indicated in blue text.

3. In the Metastasis form, enter or select the appropriate information about your model in the text fields. Items with an asterisk are required fields.

Metastasis Fields	*Description*
*Site of Lesion/Tumor	The available options correspond to the donor species you specified for this model. ● If the **Select** button displays (**Mouse**, **Rat** or **Zebrafish**), click it to open a Lesion/Tumor data tree that corresponds to the donor species. Select from the vocabulary tree the lesion or tumor used as the source for this metastasis specimen. ● If no **Select** button displays, enter the Lesion or Tumor in the text field.
*Diagnosis	Click the **Select** button. The data tree that opens corresponds to the Donor Species you specified for this model. Select from the disease vocabulary tree the diagnosis assigned to this metastasis specimen.
Age of Metastasis Onset	Age of the animal when the metastasis is first detectable. Enter age information in the text box or from the drop-down list. **Note:** If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.

Table 3.23 Metastasis fields and their descriptions

Metastasis Fields	*Description*
Age of Metastasis Detection	Age of the animal when the metastasis was detected.
	Note: If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Average Weight of Metastasis (mg)	Enter the average weight of the metastasis.
Average Volume of Metastasis (mm3)	Enter the average volume of the metastasis.
Metastasis Incidence Over Lifetime (%)	Enter the percentage of the population that develops metastases. (Numbers only)
Survival Information	Indicate the life expectancy for the animals with metastasized tumors.
Gross Description/ Macroscopic Description	Describe structural and functional changes resulting from the disease processes; can be detected by the unaided eye.
Microscopic Description	Describe structural and functional changes resulting from the disease processes; could not be detected by the unaided eye.
Genetic Alterations found in Tumor	Describe genetic alterations found in the metastasis other than genetically engineered changes
Method of Observation	List the method(s) by which the metastasis was discovered. **Note:** This field becomes writable only after you have entered information in the Genetic Alterations found in Tumor field.
Comparative Data from Other Species	Describe occurrences found in humans or other species.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.23 Metastasis fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Therapy

All treatments intended to prevent, slow down, or otherwise treat cancerous growth should be submitted as therapeutic experiments.

To enter or edit the therapeutic experiments for an animal model, follow these steps:

1. Click **Therapeutic Approaches** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Therapy** red hypertext link. This opens the Therapy form.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Therapy Fields	*Description*
*Drug/Compound Name	Enter the name of the drug / compound (chemical name preferred over brand name) that was administered to the animal. If a drug cocktail consisting of several compounds was given enter each compound separately and explain the experiment in more details in the **Experiment** or the **Comment** field.
NSC Number	Enter the **NSC number** in the text box. The NSC number is a unique drug identifier issued by the Nomenclature Standards Committee (NSC) of the U.S Food and Drug Administration. ● If you don't know the number, click the **Find NSC#** button. The button opens a page at the Developmental therapeutics Program (DTP) at NCI which allows you to find the NSC number for a specific drug. ● On the DTP page, select **Chemical name starts** or **Chemical name number.** (By default, the radio button is set to find the **NSC number**.) ● Enter text in the **Search Parameters** field, and click **Submit**. ● Once you have found the NSC number, copy the number from the field onto the field on the Therapy page.
CAS Number	Enter the **Chemical Abstracts Service (CAS) number** for a chemical or drug. Click (Find CAS#) to find the CAS number. Copy the number and paste it into the field on the Therapy page. **Note:** You can also retrieve the CAS number from the DTP page described in the previous row of this table. It will display with the NSC number on the Chemical/Drug page.
Chemical Class	Select the **Chemical Class** from the displayed list; make sure it is highlighted, and move it down to the lower box using the **Down** (⌄) arrow. To de-select a chemical class, highlight it in the right box. Move it up to the upper box by clicking the **Up** (⌃) arrow. **Note:** You can move multiple items at one time. Use the convention select methods: CTRL + click to select non-contiguous items; SHIFT + click to select all items within a range.
Biological Process	Select the **Biological Processes** affected by the drug from the displayed list. Using the up and down arrows as described above, create a list of biological processes affected by the selected drug.

Table 3.24 Therapy fields and their descriptions

Therapy Fields	*Description*
Target	Using the up and down arrows as described above, create a list of targets used in the therapy.
Experiment	Enter the hypothesis for the experiment conducted with this model and this drug.
Dose (number only)	Enter the dose of the therapeutic agent. Select the dosage units from the drop-down menu. **Note:** If the dose unit you are looking for is not available in the drop down list, manually enter the dose unit together with the amount in the text field. When you return to the page, your dose unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the dose unit information, you must delete the current dose unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new dose unit entry will be added to the old entry.
Administrative Route	Select the course in which a drug was administered in order to reach the site of action in the body. If the appropriate route is not listed, select **Other** from the drop-down list and enter the **Other Administrative Route** in the corresponding text field.
Other Administrative Route	Enter **Administrative Route** that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Gender	Select the **Gender** from the drop-down list.
Age at Treatment	Enter animal age information in the text box and from the drop-down list. **Note:** If the time unit you are looking for is not available in the drop down list, manually enter the time unit together with the number in the text field. When you return to the page, your time unit entry that you selected or entered manually will be displayed in the text input field. Should you decide to update the unit information, you must delete the current time unit entry from the text field before selecting or entering the new information. Should you fail to delete first, the new time unit entry will be added to the old entry.
Developmental Stage	**Note:** This field displays only for the Zebrafish model type. Click the **Select** button to open the developmental stage data tree that corresponds to zebrafish. Select from the vocabulary tree the appropriate developmental stage.
Results	Describe **Results** of the experiment that was conducted with this model and this drug.
Toxicity Grade	Indicate the **Toxicity Grade**, as observed in this experiment, from the drop-down list: **Mild**, **Moderate** or **Severe**

Table 3.24 Therapy fields and their descriptions

Therapy Fields	*Description*
Biomarker	Biological markers (Biomarkers) are objectively measurable phenotypic parameters (for example, specific enzyme concentration, specific hormone concentration, specific gene phenotype, presence of biological substances) that characterize an organism's state of health or disease, likelihood of developing a disease, or response to a particular therapeutic intervention. Indicate the biomarkers (if any) that were used in this experiment.
Tumor Response	Describe the response of the tumor to the therapy.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.24 Therapy fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, Reset returns the form back to the unmodified state (the default).

Note: After the data have been submitted, you are offered a link to the Publications page to enter associated publications in which your specific therapy was described. By entering the publication in this way, an association between the publication and the therapy is established, and this particular publication will be displayed on the therapy search page. In addition, the publication will display on the publication search page.

Cell Lines

To enter or edit the cell line information for an animal model:

1. Click **Cell Lines** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options display only after you have clicked the (model) Submit button in other caMOD viewers.

2. Click the **Enter Cell Lines** red hypertext link.

3. Enter or select the appropriate information about cell lines generated from the model in the text entry fields. Items with an asterisk are required fields.

Cell Lines Fields	*Description*
*Name of Cell Line	Enter the name of the **Cell Line** that was generated from the animal model.

Table 3.25 Cell Lines fields and their descriptions

Cell Lines Fields	Description
*Organ/Tissue	The available options correspond to the donor species you specified for this model. ● If the **Select** button displays (**Mouse**, **Rat** or **Zebrafish**), click it to open a **Organ/Tissue** data tree that corresponds to the donor species. Select from the vocabulary tree the organ or tissue used as the source for this cell line. ● If no **Select** button displays, enter the **Organ** or **Tissue** used as the cell line source in the text field.
Experiment	Enter the **Experiment** that was conducted with the cell line. If you conducted multiple experiments with the cell line, enter each experiment in a separate page by returning to the Submission Process page, reopening your model and retrieving an empty form by clicking on Enter Cell Line. You can make multiple entries for the same cell line and use the same cell line name.
Results	Describe the results of the experiment that was conducted with this cell line.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.25 Cell Lines fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Note: After the data have been submitted, you are offered a link to the Publications page to enter associated publications in which your specific cell line was described. By entering the publication in this way, an association between the publication and the cell line is established, and this particular publication will be displayed on the cell line search page. In addition, the publication will display on the publication search page.

Images

In caMOD, you can upload any kind of image: slides, graphs, slide analysis, anything that might be relevant to caMOD data.

To prepare an image for uploading to the database, we recommend that you include a scale bar for histology images. It is also advisable to convert the image to jpg format, because this file format has the capability to display up to 16.7 million colors, and has a reasonable file size because of the build-in compression. Acceptable image file formats are: .jpg, .jpeg, .gif, .sid or .png.

To enter or edit images relevant to an animal model:

1. Click **Images** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have click the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Images** red hypertext link. This opens the Images dialog box.

3. Enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Image Fields	Description
*Upload Image	Browse to locate the image on your computer to be uploaded to the caMOD database. If you do not have the image to submit, then enter an alternate URL below to point to another data source.
*Title of Image	Enter the name of the image to be uploaded in the text box.
Description of Image	Provide information similar to that which would be provided as an image caption in scientific publication. This is especially important when submitting composites.
Staining Method	Click the **Select** button. The data tree that opens displays a list of staining methods from which you can select. Select from the staining method data tree that opens the method used for staining the sample.
Alternate URL	Enter the URL for an alternate data source for the image if you are not submitting your own image.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.26 Image fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Depending on the file size, the upload process might take a minute or longer. Be patient. (No, your computer is not frozen and the application did not crash. It just takes a while to transfer image data.)

Viewing MrSID Images

MrSid images are high-quality images that have been compressed. The images are shown in the MrSid image viewer. The software allows the user to zoom in and out, move the pan to the left, right, up and down, or show the complete image (full size view).

Depending on the selection made by the user the specific part of the image will be downloaded from the server. This might take a moment so be patient.

Microarray Data

This page is used for the submission of experiment information and a URL when array data is stored in a database other than caArray. The page also contains information on how to submit data to caArray and link it to animal model record(s) in caMOD.

Data NOT in caArray—1.

1. Click **Microarrays** from the list of Submit and Edit Models menu options on the left sidebar of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Microarray Data** red hypertext link.

3. In the dialog box that opens, enter the **Experiment Name** and the **URL** for the location where the data is stored. Both fields are required.

Data in caArray—1.

1. Click **Microarrays** from the list of Submit and Edit Models menu options on the left sidebar of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click the **Enter Microarray Data** red hypertext link.

The page describes the required steps for uploading array data into caArray. (http://caarray.nci.nih.gov/) You must log into caArray and work with the data there. You must have a user account in caArray that is separate from your caMOD user account. Refer to: http://caarray.nci.nih.gov/

Note: You can submit array data to caArray only in the Affymetrix format, in GenePix formats or in the Gene Array List.

For more information, refer to the caArray x.x online help or the caArray x.x User's Guide, downloadable from: http://ncicb.nci.nih.gov/download/downloadcaarray.jsp.

Model Availability

Model Availability lists sources where one can obtain or purchase animal models. Model Availability displays in caMOD under two conditions, model search and model submission:

- **Search:** After you have launched a search, in the Search Results list, click on the model link. This opens the corresponding Model Characteristics page, the bottom of which displays Model Availability details.

    ᵒ The **Strain** of the model displays, as well as the name of the **Distributor** (Investigator). If an email address for the Investigator exists in the caMOD database, click the name which is a hypertext link to the email information.

- **Submission**: When submitting a new model or editing an existing model, you can open the Model Availability page where you can provide or edit information about the availability of your model.

To enter model availability information for an animal model:

1. Click **Model Availability** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) **Submit** button in other caMOD viewers.

2. Click any of the **Model Availability** options applicable to your animal model. They are listed as red hypertext links. When you click the links, the corresponding pages open in new browser windows.

3. In the relevant page, enter the **Strain Name** and **Stock #** for your animal model. Click the **Find Info** button to link you to the appropriate resource for that page (such as the Jackson Laboratory website) where you can look up the appropriate stock number for the model. Items with an asterisk are required fields.

    Model Availability sources are summarized as follows:

Sources for animal models	*Description*
Jackson Lab	Jackson Lab is a large international animal models distributor. If the model is available from the Jackson Laboratory, enter the ***Strain Name** and **Stock Number** of the model in the appropriate text field. Click the **Find Info** button to open the Jackson Lab website (http://jaxmice.jax.org) where you can find the appropriate information for your model.
MMHCC Repository	The Mouse Models of Human Cancers Consortium (MMHCC) Repository is an NCI-funded resource for mouse cancer models and associated strains. The repository makes strains available to all members of the scientific community. Enter the **Strain Name** and **Strain Number** to inquire about the availability of the model at this site. Click the **Find Info** button to open the MMHCC Repository website (http://mopuse.ncifcrf.gov) to find further information.
Investigator	If the Investigator is willing to send the mice to other laboratories, enter the **Strain Name**. Additionally, select the name of the **[Principal Investigator]** from the drop-down list. Scientists who would like to request the mice from the lab can directly contact the PI.
ZFIN	Enter the **Strain Name** (required) and ZFIN Identifier. Click the **Find Info** button to open the ZFIN website (http://zebrafish.org) where you can find the appropriate information for your model. Models can be purchased from Zirc, which is the commercial arm of ZFIN (http://zebrafish.org/zirc/home/guide/php). **Note:** You must enter the stock number as shown here: ***ZDB-GENO-070209-223***.

Table 3.27 Animal model source fields and their descriptions

4. Click the **Submit** button to execute the submission of the model information.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Note: If a model is a product of a crossing of multiple models, and these models are available from one or more of these sources, enter the appropriate information about these models.

For example: A model that is entered in the database is a conditional Brca1 knockout. To generate this knockout, two different strains were crossed: the mouse strain that carried the floxed Brca1 gene and the cre-expressing mouse strain. If the mouse strain

with the floxed Brca1 gene and/or the cre-expression mouse strain are available from one or more sources, this information would be entered.

Transplant

To enter transplant information to a submitted model,

1. Click **Transplant** from the list of Submit and Edit Models menu options on the left side of the caMOD viewing window. These menu options only display after you have clicked the (model) Submit button in other caMOD viewers.

2. Click the **Enter Transplant** heading.

3. In the Transplant dialog box, enter or select the appropriate information about your animal model in the text entry fields. Items with an asterisk are required fields.

Transplant Fields	*Description*
*Name of Transplant	Enter the name of the Transplant or Cell Line. In some cases, this is the name of the cell line that is being inserted.
*Donor Species	Select the **Donor Species** from the drop-down list. The text entry fields on this page correspond to your selection in this field.
If Other Species	Enter **Donor Species** that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Donor Strain	A specific breeding population of mice, including inbred strains, progeny of specific genetic crosses, or a mixed population of mice with partially known or unknown genetic background. (Source: Jackson Laboratory MGI Glossary) If applicable, select the **Donor Species** from the drop-down list. If the appropriate species is not listed, select **Other** and enter the **Other Donor Species** in the text field under the list.
Other Strain	Enter **Donor Strain** that is not listed in the drop-down list. Note: This field is only writable after you select Other in the previous field.
Organ/Tissue	The available options correspond to the donor species you specified on this Transplant page. • If the **Select** button displays (**Mouse**, **Rat, Zebrafish** or **Human**), click it to open an Organ/Tissue data tree that corresponds to the donor species. Select from the vocabulary tree the organ or tissue type indicated for this Transplant specimen. • If no **Select** button displays, enter the **Organ** or **Tissue** type in the text field.
*Source Type	Select appropriate **Source Type** from the drop-down list. If the appropriate Source Type is not listed, select **Other** from the drop-down list and enter the **Other Source Type** in the following text box.

Table 3.28 Transplant fields and their descriptions

Transplant Fields	Description
If Other Source Type	Enter **Source Type** that is not listed in the drop-down list. Note: This field is only writable after you select **Other** in the previous field.
Parental Cell Line	Enter the name or designator of the **Parental Cell Line** to be used in the experiment.
ATTC Number (if available)	Enter the unique identifier of the cell line in the American Type Culture Collection (ATCC). If you don't know the number, click the **Find ATCC #** button. Once you have found the number, copy the number and paste it onto the field on the Transplant page.
Conditioning Regimen	Conditioning regimen refers to treatments that models can receive before the transplantation. Select the appropriate **Conditioning Regimen** from the drop-down list. If the appropriate **Conditioning Regimen** is not listed, select **Other** from the drop-down list and enter the **Other Conditioning Regimen** in the following text box.
Other Conditioning Regiment	Enter **Conditioning Regimen** that is not listed in the drop-down list. **Note:** This field is only writable after you select **Other** in the previous field.
Genetic Alteration	Describe the genetic manipulations used in the Transplant.
Method of Modification	Describe the modification method(s) used for the cell line or transplant. **Note:** This field becomes writable only after you have entered information in the **Genetic Alteration** field.
Amount of Cells	Enter the number or amount of cells transplanted into the animal.
Growth Period	Enter the period of time the Transplant was allowed to grow.
Site of Administration	Select from the drop-down list the body part in which the Transplant was placed (intraperitoneal, subcutaneous). If the appropriate site is not listed, select **Other**, and enter the **Other Site of Administration** in the text field under the list.
Other Site of Administration	Enter **Site of Administration** that is not listed in the drop-down list. **Note:** This field is only writable after you select Other in the previous field.
Host Species/Strain	The non-editable text in this field are copies of the species and strain information you entered on the Model Characteristics page.
Comment	Comment on the contents of this page or use this field to add data for this model. You can also enter information that you would like to share but that did not fit in any other field.

Table 3.28 Transplant fields and their descriptions

4. Click the **Submit** button to add the information to your model.

5. Click **Reset** to return the form to default settings: If you are entering data for the first time, **Reset** clears the form (resets it to its defaults). If you are changing data for an existing model, **Reset** returns the form back to the unmodified state (the default).

Grid Availability

Programmatic access to caMOD is available through a caGRID data service (API). A data service allows data owners to share the data from a source (e.g. Oracle or MySQL relational databases) with their collaborators. caGRID is an infrastructure that connects data, research tools, scientists, and organizations to leverage their combined strengths and expertise in an open federated environment with widely accepted standards and shared tools.

For more information about caGrid, see

https://cabig.nci.nih.gov/workspaces/Architecture/caGrid.

CAMOD ADMINISTRATION

This chapter introduces you to the procedures for searching the caMOD database.

Topics in this chapter include:

- *Administration Functions Overview* on this page
- *Administration Roles* on page 88
- *User Management* on page 90
- *Roles Management* on page 93

Administration Functions Overview

To enter the administration mode of caMOD, click the **Admin** title in the gray bar at the top of the browser window.

Note: This option is visible only to users who have been assigned administration roles.

This opens the Administration Roles page which initially displays News and Notes and where you are assigned a role, a "To Do" list. Additionally, administration options display at the upper-left of the browser window..

- **Admin Roles**
- **View Comment Assignment**
- **View Models Assignment**

- **Role Management**
- **User Management**
- **Help**

caMOD Admin functions include responsibilities for three assignees: *Coordinator*, *Screener*, and *Editor*

Coordinator

The coordinator can perform the following tasks:

- Add new users

- Appoint screeners

- Appoint editors

- Assign models to a screener

- Assign models to an editor

- Assign comments to a screener

Screener

The screener can perform the following tasks:

- Scan submitted, completed records for appropriateness.

- Approve or reject a record.

- Scan comments for appropriateness.

- Approve or reject a comment.

Editor

The editor can perform the following tasks:

- Check the record for completeness and correctness.

- Approve the record for display or asks the submitter for more information.

Administration Roles

Note: The Administration Roles page is accessible only if you have Coordinator/Editor/ Screener privileges.

The Administration Roles viewer opens when you click on the **Admin** tab in the caMOD viewer (*Figure 4.1*).
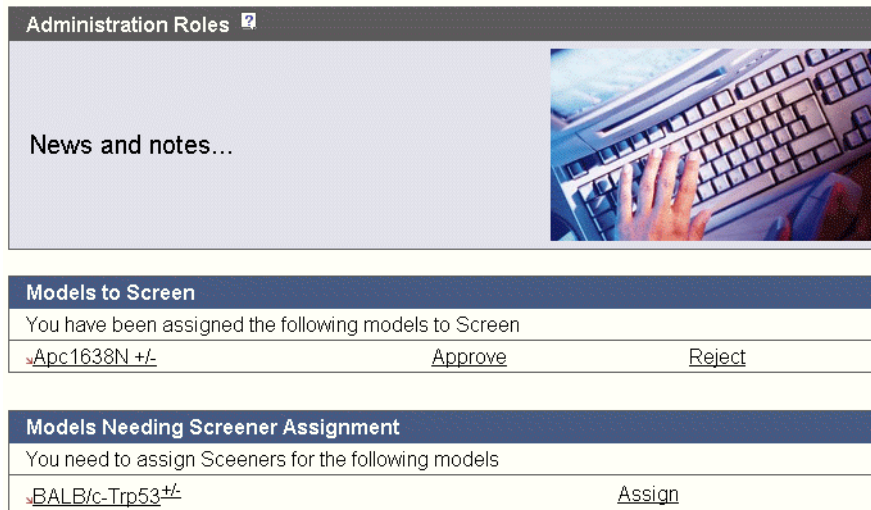
Figure 4.1 The Administration Roles page displays a task list, based on permissions assigned to the user

The Admin viewer lists tasks that need to be performed by you when you are assigned an Admin Role. The task list changes, depending on the roles the user must perform and the tasks the user must complete. All available links for the Admin section display in the upper left sidebar of the viewer.

Features that display on this page differ for each role the user may been assigned.

Coordinator

A Coordinator will see:

- **Models Needing Screener Assignment**

- **Comments Needing Screener Assignment**

- **Models Needing Editor Assignment**

If you are the Coordinator, click on the associated **Assign** button(s) to open the dialog box where you can make the assignments.

Screener

A Screener will see

- **Models to Screen**--the list displays model assignments.

- **Comments to Screen**--the list displays comment assignments.

If you are the Screener, click on any model or comment link to review the corresponding pages and/or fields. For a model, review all of the pages containing information submitted for the model. Click on any underlined category links in the Model Details section in the upper left sidebar of the viewer. (Any underlined segment indicates a category that contains data about the model.)

Editor

An Editor will see:

- **Models to Edit**--the list displays model assignments

If you are the Editor, click on any model or comment link to review the corresponding pages and/or fields.

After the Editor and Screener have reviewed all pages belonging to a model, they must click the **Admin** button in the dark gray toolbar again to return to the Admin Roles screen or they can use the browser's **Back** button to return to this page.

Back on the Admin Roles page, they indicate their decisions by selecting the appropriate term next to the model name.

- An Editor can reject or approve a model. The Editor has the opportunity to comment on his/her decision, but commenting is optional.

- An Editor can approve or request more information. The Editor can also comment on his/her decision, but commenting is optional.

User Management

Note: The User Management page is used by the Coordinator to edit information. The page is accessible only if you have Coordinator privileges.

From the Administration Roles page, you can edit information for current caMOD registered users. The Coordinator can also add new users to caMOD from this page. As an alternative, new users can register themselves from the caMOD login page.

To edit current users:

1. Click the **User Management** option at the upper left of the browser window. The drop-down list on the User Management page contains names of all current caMOD users.

2. To edit user information, with a current user selected in the drop-down list, click the **Edit** button.

3. In the Edit User dialog box, modify the user information. Click **Submit**.

Adding a New User

When, as the Coordinator, you want to add a new user to caMOD, follow these steps:

1. Click the **Admin** tab in the caMOD viewer.

2. Select the **User Management** option in the menu on the upper left sidebar of the viewer.

    The drop-down list contains names of current caMOD users.

3. To add a new user, click the **Add** button.

4. In the Add User form, enter the appropriate information. Fields are described *Table 4.1*. Items with an asterisk are required fields.

User Fields	Description
*Institute / Organization	Self-explanatory
*First Name	Self-explanatory
*Last Name	Self-explanatory
Username	Enter the username of the new user.
Principal Investigator	Check the box if the new user is the project PI. After doing this, the PI's name will appear in any PI drop-down list in the application.

Table 4.1 User fields and descriptions

5. Click the **Submit** button to execute the submission of the new user information. Click the **Cancel** button to abort the action.

Roles Assignment

Besides being simply a Registered User in caMOD, a user can be assigned other roles by a caMOD Coordinator. For more information, see *Administration Roles* on page 88, and *Roles Management* on page 93.

Assigning a Screener

The task of assigning a Screener to screen submitted models is performed on the Administration Roles page in caMOD.

Only a Coordinator can assign a screener. If you are a Coordinator, to assign a Screener:

1. When you enter the **Admin** mode of caMOD, the Administration Roles page displays your "To Do" list: **Models Needing Screener Assignment**, **Models needing Editor Assignment** and **Comments Needing Assignment**.

2. For the Models Needing Screener Assignment or Comments Needing Assignment, click the **Assign** button corresponding to the listed model. This opens the Assigning a Screener dialog box (*Figure 4.2*).

Figure 4.2 Assign Screener dialog box

3. In the Assigning Screener page, select a Screener by name from the **Assigned to** drop-down list.

4. Enter appropriate notes in the **Note** text box.

5. Click the **Submit** button to execute the assignment. Click the **Cancel** button to abort the action.

When you click the **Submit** button, the application returns you to the Administration Roles page. When the Screener to whom you have assigned the model logs in and goes to the Admin section, the model you have assigned will display on his/her "To Do" list**.**

Screener Responsibilities

A Screener is assigned the role by the Coordinator.

Responsibilities of a Screener:

*   The assigned Screener performs the initial review of submitted models. This review is a quick check that the model is appropriately entered and that it does not contain junk or grossly inappropriate material.

*   The Screener makes a preliminary assessment for clarity, typographic errors and other issues that would make the model less than fully comprehensible. The screening process should be complete within 24 hours.

*   The Screener does not contact the Submitter about the submission. Any deficiencies found are described in an email to the Coordinator.

*   Each email deals with only one submission, so that the emails can be independently routed for vetting.

Assigning an Editor

The task of assigning an Editor to edit a screened model is performed on the Administration Roles page in caMOD.

Only a Coordinator can assign a screener. If you are a Coordinator, to assign an Editor:

1. Click **Admin** from among the caMOD titles on the gray bar at the top of the viewer window.

    When you enter the Admin mode of caMOD, the Administration Roles page displays your "To Do" list: Models Needing Screener Assignment, Models needing Editor Assignment and Comments Needing Assignment.

2. For the Models Needing Editor Assignment, click the **Assign** button corresponding to the listed model to be assigned.

3. In the Assigning Editor page, select an Editor by name from the Assigned to drop-down list.

4. Enter appropriate notes in the **Note** text box.

5. Click the **Submit** button to execute the assignment. Click the **Cancel** button to abort the action.

When you click the **Submit** button, the application returns you to the Administration Roles page. When the Editor to whom you have assigned the model logs in and goes to the Admin section, the model you have assigned will display on his/her "To Do" list.

Editor Responsibilities

An Editor is assigned the role by the Coordinator.

Responsibilities of an Editor:

- When notified that a model is ready for editing/reviewing, the assigned Editor examines the model to see if it satisfies criteria to be made available to the public.

- The Editor considers any comments made by the Screener, which are passed along in the email from the Coordinator.

- The Editor may determine that the model cannot be made acceptable for publication in the database. For example, the model may be a prank.

- If the model has correctable defects, it may be necessary to communicate by email with the submitter to make the model acceptable. Correspondence and telephone contact with the submitters are conducted through the Coordinator.

- Editors are responsible for maintaining a paper trail or log of email exchanges regarding the models they review.

- The Editor may elect to review a model without assistance, or he or she can request assistance from other subject matter experts.

- Only the Editor has the authority to release the model to the intended audience.

caMOD Permissions

The following categories and their associated authorizations are found in caMOD:

- **User**--Includes every user without an account. These users can query the database without restrictions, but they cannot submit models or comment on models.

- **Registered User**--Can submit models to the database and can comment on models submitted by other researchers.

- **Super User**--Has access to all model entries to update them. This is to facilitate minor text corrections in an entry without having to bother the submitter.

- **Screener**--Registered user who performs the functions of a Screener.

- **Editor**--Registered user who performs the functions of an Editor.

- **Coordinator**--Registered user who performs the functions of a Coordinator.

Roles Management

Note: The Roles Management page is accessible only if you have Coordinator privileges.

For more information about using the Roles Management page, see Administration Roles and Coordinating the Review Process.

The Roles Management page allows you, the Coordinator, to review and modify Admin assignments.

To modify current user assignments:

1. Click on the **Role Management** option at the upper left sidebar of the browser window. The drop-down list on the Role Management page contains names of all users currently assigned Admin roles in caMOD.

2. In the Roles Management drop-down menu, select any of the listed roles and click the **Submit** button.

3. The list that displays shows the assignee, their member assignment status and their email contact information. Click on the members name to open the Edit User Roles dialog box (*Figure 4.3*).

Figure 4.3 Edit User Roles dialog box

4. In the Edit User Roles dialog box, check or clear boxes to modify the user information.

5. Click **Submit** to execute the action. Click **Cancel** to abort the action.

Coordinating the Review Process

In caMOD, the Coordinator manages the model review process. The responsibilities in this process include:

Assigning Functions/Grant Privileges for Screeners and Editors

Appointing Screeners and Editors

1. Click the **Role Management** option on the left sidebar toolbar.

2. In the drop-down menu of the page, make sure All is selected. Click the **Submit** button.

3. On the list of all users, current member assignment display in the Member Status column. Click the name of the user you select to become a Screener, Editor or another Coordinator.

4. On the Edit User Roles page that opens, check the role this user is to perform.

Editing or Removing Roles

1. Click the **Role Management** option on the left sidebar toolbar.

2. In the drop-down menu of the page, click the name of the user you want to remove from a role.

3. In the Edit User Roles page, clear the checkbox for the role this user should no longer perform.

Reviewing Models

Assigning Models to Screeners

Only completed models can be screened.

1. To see models that need to be assigned for screening, the Coordinator clicks the **View Model Assignment** option in the left sidebar.

2. In the Models Assignment dialog box, select **Completed - Not Screened** models from the drop-down list.

3. The Coordinator marks the models by clicking the check box in front of the model name.

4. The Coordinator selects a Screener from the drop-down list for the selected models.

Assigning Models to Editors

Only models that were approved by the Screener can be send to the Editor.

1. To see models that need to be reviewed, the Coordinator clicks the **View Model Assignment** option in the left sidebar.

2. In the Models Assignment dialog box, the Coordinator selects **Screened - Approved** models from the drop-down list.

3. The Coordinator marks the models by clicking the check box in front of the model name.

4. The Coordinator selects an Editor from the drop down list for the selected models.

Review Follow-Up

Note: After a Screener or an Editor has finished reviewing an assigned model, there may be a need to communicate with the model submitter to obtain more information about the model, for example. All communications of this nature are carried out by the Coordinator. For more information, see *Screening a Model* on page 96 and *Editing a Model* on page 98.

Requesting More Information

At any point in the screening process for a model, the Screener or Editor can request more information from the submitter about the model. To request more information, click the **Need More Info** button corresponding to the model. In the dialog box that opens, enter your notes describing the information you need. Click **Submit**.

Models Assignment

Note: The Models Assignment page is accessible only if you have Coordinator privileges. This page is for informational purposes only. To initiate model or comment reviews, you must do so from the Administration Roles page. See *Administration Roles* on page 88 for more information.

From the Models Assignment page, you can select from the drop-down menu list of current model assignments:

- **Incomplete**
- **Complete - not screened**
- **Screened - assigned**
- **Screened - approved**

- **Screened - rejected**
- **Editor - assigned**
- **Edited - approved**
- **Edited - request more info**

Select any of these options and click the **Submit** button. The corresponding list displays in table format in the browser. The table shows the **Model Descriptor**, the **Model Submitter**, and the **Date of Submission**. Click on the **Model Descriptor** for any model. This opens the model information for your perusal.

Screening a Model

A Screener checks to see if a model entry is appropriate for caMOD. (For example, a Screener might reject a model when inappropriate images are associated with the model entry.) A Screener is appointed by the Coordinator. See *Coordinating the Review Process* on page 94,for more information.

Screening Work flow

1. You, as the Screener, receive an email with the information that a model has been assigned to you for screening.

2. Log into caMOD. As an assigned Screener, when you log in, you have access to the Admin mode of caMOD, where you can review assignments and launch model reviews.

3. Select **Admin** from the top of the viewer.

4. The Administration Roles page that opens displays Models to Screen. Click a Model Descriptor.

5. The Model Characteristics page opens for the selected model. Review that page.

6. Open the model detail pages and review all detail pages. The categories at the left with either underlined or in red text have information submitted with the model that needs reviewing.

   o   * **Model Characteristics**

   o   * **Genetic Description**

   o   * **Carcinogenic Interventions**

   o   * **Publications**

   o   * **Histopathology**

   o   * **Therapeutic Approaches**

   o   * **Cell Lines**

   o   * **Images**

- º   * **Microarray**

- º   * **Model Availability**

- º   * **Transplant**

7. Click on the appropriate categories to open the corresponding page(s).

8. Once you have finished the review, use the browser **Back** button to return to the Administration Roles page.

9. Indicate your decision about the model by clicking the appropriate button to the right of the model on the Models to Screen list (*Figure 4.4*).

Models to Screen		
You have been assigned the following models to Screen		
₊BALB/c-Trp53⁺/⁻	Approve	Reject

Figure 4.4 In the Models to Screen section, indicate your decision about the model.

You as the Screener, can do the following:

a. *Approve a model*--If you click **Approve**, in the Approving Animal Model dialog box, enter any comments in the **Note** text box. Click **Submit**. Accepting a model results in an email informing the Coordinator that the screening process was completed. The Coordinator then assigns an Editor for finalizing the review process.

b. *Reject a model*--If you click **Reject**, in the Rejecting Animal Model dialog box, enter any comments in the **Note** text box. Click **Submit**. This model will stay in the database but will not be visible.

Note: The Screener does not contact the submitter about the submission. Any deficiencies found are described in an automatically-generated email to the Coordinator. Each email deals with only one submission, so that the emails can be independently routed for vetting.

Comments Assignment

Note: The Comments Assignment page, associated with the caMOD Admin page, is accessible only if you have Coordinator/Editor/Screener privileges. This page is for information purposes only. To initiate model or comments reviews, you must do so from the Administration Roles page.

All Comments entered into any model information must be screened and accepted. The Coordinator assigns a Screener to screen comments.

From this page, you can select from the drop-down menu list of current comment assignments:

- **Screened - rejected**

- **Screened - approved**

- **Screener - assigned**

- **Complete - not screened**

Select any of these options and click the **Submit** button. The corresponding list displays in table format in the browser. The table shows the Model Descriptor, the Model Submitter, and the Date of Submission. Click on the Model Descriptor for any model. This opens the model information, including comments, for your perusal.

Editing a Model

An Editor is a registered user, usually scientifically trained, who evaluates the model entry for scientific correctness. An Editor is appointed by the Coordinator. See *Coordinating the Review Process* on page 94 for more information.

Editing Work flow

1. You, as the Editor, receive an email with the information that a model has been assigned to you for editing. This occurs after the Screener has approved the model.

2. Log into caMOD. As an assigned Editor, when you log in, you have access to the Admin mode of caMOD, where you can review assignments and launch model reviews.

3. Select **Admin** from the top of the viewer.

4. On the Admin page, the models assigned to you for editing display. Click on a Model Descriptor. A new page opens, displaying links to the assigned models.

5. The Model Characteristics page opens for the selected model. Review that page.

6. Open the model detail pages and review all detail pages. An underlined format or red text indicates the categories that have information submitted with the model.

●	*** Model Characteristics**	●	*** Therapeutic Approaches**
●	*** Genetic Description**	●	*** Cell Lines**
●	*** Carcinogenic Interventions**	●	*** Images**
●	*** Transient Interference**	●	*** Microarrays**
●	*** Publications**	●	*** Model Availability**
●	*** Histopathology**	●	*** Transplant**

Table 4.2

7. Once you have finished the review, use the browser **Back** button to return to the Administration Roles page.

8. Indicate your decision about the model by clicking the appropriate button to the right of the model on the **Models to Edit** list (*Figure 4.5*)

Figure 4.5 In the Models to Edit section, you can indicate your decision about the model.

You, as the Editor, can:

- º *Approve a model*--If you click Approve, in the Approving Animal Model dialog box, enter any comments in the Note text box. Click **Submit**. Accepting a model results in an email informing the Coordinator that the editing process was completed. By approving the model, you release the model to the intended audience.

- º *Request more information about the model*--You may determine that the model cannot be made acceptable for publication in the database. Once you submit your evaluation, comments and questions, the Coordinator is notified and communicates by email with the submitter to make the model acceptable.

Note: The Editor does not contact the submitter about the submission. Any deficiencies found are described in an automatically-generated email to the Coordinator. Each email deals with only one submission, so that the emails can be independently routed for vetting.

GLOSSARY

This glossary defines acronyms, abbreviations, and terminology used in this guide.

Term	Definition
caBIG	cancer Biomedical Informatics Grid
caBIO	Cancer Bioinformatics Infrastructure Objects
caCORE	cancer Common Ontologic Representation Environment
caDSR	Cancer Data Standards Repository
caMOD	Cancer Models Database
CGH	Comparative Genomic Hybridization
EBI	European Bioinformatics Institute
EVS	Enterprise Vocabulary Services
genomic segment designator	also called clone designator
MAGE 1.1	MAGE 1.1 is a widely-used microarray data standard or guideline
MAGE-ML software format	XML-based standard for representation of microarray data
MIAME 1.1	MIAME1.1. is a standard or guideline for the minimum amount of information required to make a microarray record useful to others.
MGED Ontology	MGED Ontology is a controlled vocabulary standard that concisely defines terms as they relate to Microarrays and caArray as a whole
MGED	Microarray Gene Expression Data Society
MMHCC	Mouse Models of Human Cancers Consortium
NCI	National Cancer Institute
NCICB	National Cancer Institute Center for Bioinformatics
targeted modification	Gene was knocked out
transgene	gene was used as the transgene
URI	Uniform Resource Identifier
URL	Uniform Resource Locators

Term	*Definition*
XML	Extensible Markup Language (http://www.w3.org/TR/REC-xml/) - XML is a subset of Standard Generalized Markup Language (SGML). Its goal is to enable generic SGML to be served, received, and processed on the Web in the way that is now possible with HTML. XML has been designed for ease of implementation and for interoperability with both SGML and HTML

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