



August 20, 2007

## **How to operate the Database**

As of August 20, 2007, the information about 140 epitopes and 360 antibodies are compiled in the GlycoEpitope database. In this database, records are cross-linked, i.e. each epitope record is linked to records of its corresponding antibodies. Since these data are based on published literature, there are also links to some external database and online journals, if available, so you can look into original manuscripts. You can find epitopes and antibodies you are looking for by their names or by using search functions in this database.

### **1. To find a Epitope record from “List all epitopes”**

First, you will see the list of epitopes by clicking the “List all epitopes” button at the top page. Epitopes are listed in alphabetical order except those names start with numbers that are listed at the beginning of the list. You can change the order by choosing “Epitope ID” in the box top-left of the list and click “sort,” then the list will be arranged in order of Epitope ID. You can also change the number of epitopes listed in one page by entering any number in the box next to the sort box and click “show.” Each epitope ID links to its General page. General page consists of following information wherever possible: epitope’s structure, sequence, aliases, history, 3D structure, molecular weight, composition, species, tissue and cellular distribution, subcellular distribution, developmental change, cell line, receptor, function, diseases, and application. You can also look at related information listed under each tab as follows: “Antibody,” “Glycoprotein,” “Glycolipid,” “Enzyme,” and “References”.

### **2. To find an Antibody record from “List all antibodies”**

All antibodies that are already released in this database are listed in “List all antibodies” in alphabetical order except those names start with numbers that are listed at the beginning of the list. You can change the order by choosing “Antibody ID” in the box top-left of the list and click “sort,” then the list will be arranged in order of Antibody ID. You can also change the number of antibodies listed in one page by entering any number in the box next to the sort box and click “show.” An antibody record consists of information about its recognizing epitopes as well as information like immunized animals/systems (species), its category (polyclonal, monoclonal, or scFv), its isotype, and its supplier and application.

### 3. Using search functions

#### 3-1. Epitope Search

You can conduct search by selecting an item from pull-down menu or entering keywords in any column. The keyword search is case insensitive and partial matching except for Epitope ID, whose search is exact matching. No Boolean operators (e.g. AND, OR, NOT, &...) can be used. If several keywords are entered, entries containing all the keywords will be listed (i.e. 'AND' search).

Keyword(s) entered in “All field” will be highlighted in search result.

#### Rules specific to individual fields

##### Epitope ID:

\*Epitope ID is the database-specific ID, and an entry for this search has to be exact match.

##### Composition:

\* Put the name of monosaccharide residues in parentheses and specify the number of monosaccharide residues after parentheses.

Examples: entries containing more than one GlcA: **(GlcA)**,

entries containing one GlcA: **(GlcA)1**,

entries containing two GlcA and one Gal: **(GlcA)2 (Gal)1**

**Note:** Leave a space after the number of monosaccharide residues.

**Correct** (Glc)1 (Gal)1 (GlcNAc)1

**Incorrect** (Glc)1(Gal)1(GlcNAc)1

##### Molecular weight:

You can set lower and/or upper limit of molecular weight.

Examples: specifying lower limit only: 1234.5 -

specifying upper limit only: - 2345.6

specifying both lower and upper limit: 1234.5 – 2345.6

##### Tissue & Cell:

\*Select a name of tissue or a keyword from pull down menu.

##### Author:

\*Enter authors' last names.

##### Year:

\*Enter the publication year of an article (e.g. 2004).

\*Only one keyword (year) can be specified in this field.

Search by publication year is available only in Reference section.

Each Epitope record consists of 6 sections: General, Antibody, Glycoprotein, Glycolipid, Enzyme, and Reference. You can access to these sections by clicking each tag. There are also hyperlinks for external database if available.

## 3-2. Antibody Search

### General rules

The keyword search is case insensitive and partial matching, except for Antibody ID, whose search is exact matching. No Boolean operators (e.g. AND, OR, NOT, &,...) can be used. If several keywords are entered, only entries containing all the keywords will be listed (i.e. 'AND' search). Keyword(s) entered in “All field” will be highlighted in search result.

### Rules specific to individual fields

#### Antibody ID:

\*Antibody ID is database-specific ID and the search for this field is exact matching.

#### Antibody name:

\*Input an antibody name or select an antibody from pull down menu.

When Antibody Search result is shown, click an Antibody ID, and detailed antibody record will be displayed. Clicking Epitope IDs also shows Epitope records. There are hyperlinks for external database if available.

## 3-3. Example of how to search

### 3-3-1. To find antibodies correspond to specific epitope

**Knowing the epitope name:** go to “Epitope Search,” enter epitope name in “Epitope” column and press “search” button. The search result will be shown, and you can click the Epitope ID of the epitope that you were looking for. The general page of the epitope record will be shown first. Choose “Antibody” tag on the top, and information of corresponding antibodies will be shown. If no entry was found, try to enter the epitope name in “All field” and conduct search since there are some alias for some epitopes.

**Not knowing the epitope name:** go to “Epitope Search,” enter known information in any of these column “Composition,” “Molecular Weight,” “Species,” “Tissue & Cell,” “Receptor,” “Diseases,” “Enzyme,” and/or “Reference.”

Example: if you want to know the corresponding antibodies of epitope which is expressed in human brain and whose receptor is L-selectin.

Choose “Homo sapience” in Species column.

Choose “brain” in Tissue & Cell column.

Enter “L-selectin” in Receptor column.

### 3-3-2. To find epitope recognizes specific antibody

You can find this information from both “Antibody Search” and “Epitope Search”. Enter name of antibody in “Antibody name” or choose name from pull-down menu in “Antibody search”. Click Epitope ID, and General page of the epitope will be shown.

### 3-3-3. To find information about function of carbohydrate whose molecular weight or composition is known

Go to “Epitope Search” page, and enter the known information in “Molecular weight” column or “Composition” column. **Note:** leave a space after the number of monosaccharide residues.

**Correct** (Glc)1 (Gal)1 (GlcNAc)1

**Incorrect** (Glc)1(Gal)1(GlcNAc)1

The search result will be shown. Clicking an Epitope ID, you can find information about the epitope's function in General page.

**3-3-4. To find epitope that is specifically expressed in particular tissue**

Go to "Epitope Search", and choose the tissue name from pull-down menu. The search result will be shown. If you cannot find proper tissue name, try to enter the tissue name in "All field" and conduct the search.

**3-3-5. To find epitopes whose structure is similar to certain epitope**

Go to "Epitope Search", enter the epitope's structure, and conduct the search. (**Note:** leave a space after the number of monosaccharide residues.) The search result will be shown. Clicking an Epitope ID, you can find the epitope's General page and all related information listed under each tab on the top of the General page.