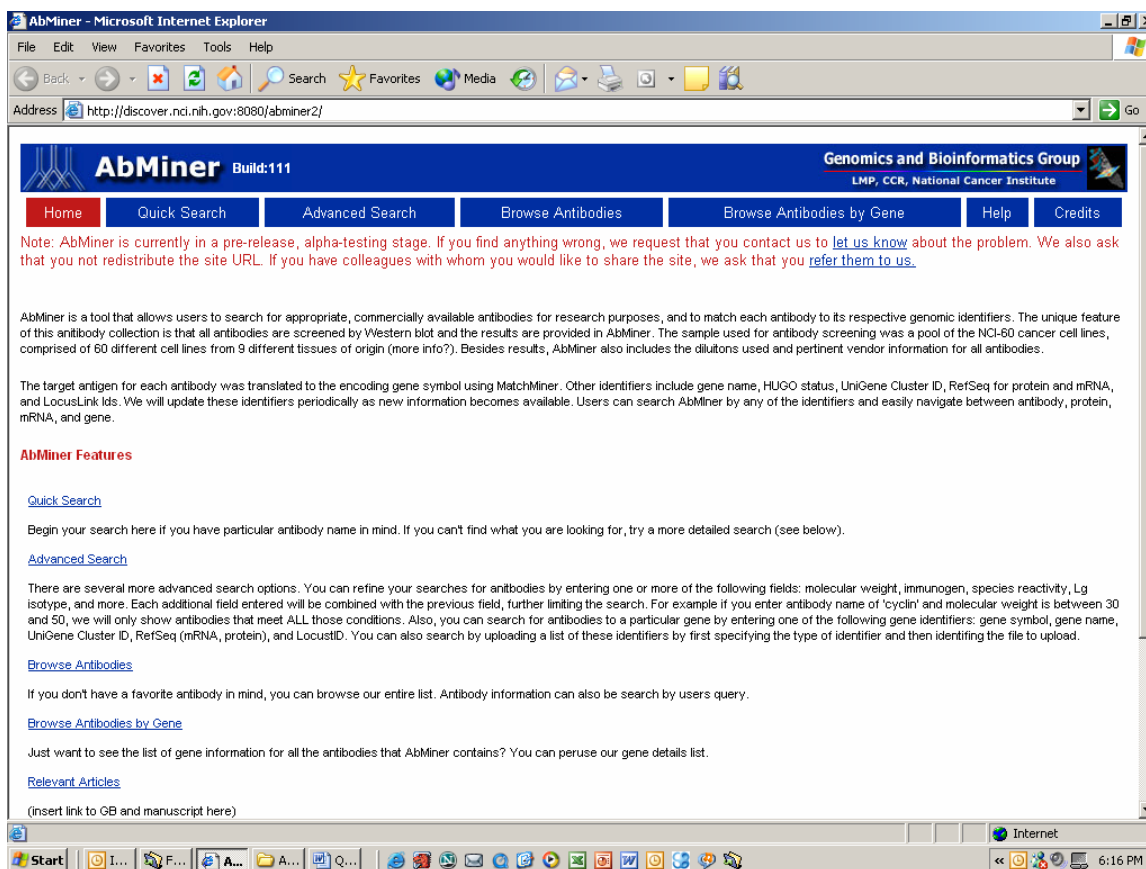# Quick Start and Tutorial for AbMiner

Overview

AbMiner is a tool that allows users to search for appropriate, commercially available antibodies for research purposes, and to match each antibody to its respective genomic identifiers. The unique feature of this anitibody collection is that all antibodies are screened by Western blot and the results are provided in terms of the band pattern across the pool of the NCI-60 cancer cell lines, comprised of 60 different cell lines from 9 different tissues of origin. Besides results, AbMiner also includes recommended dilutions and pertinent vendor information for all antibodies.

The target antigen for each antibody was translated to the encoding gene symbol using MatchMiner. Other identifiers include gene name, HUGO status, UniGene Cluster ID, RefSeq for protein and mRNA, and LocusLink Ids. We will update these identifiers periodically as new information becomes available. Users can search antibodies by any of these identifiers.

Using AbMiner

The homepage for AbMiner looks like the following:
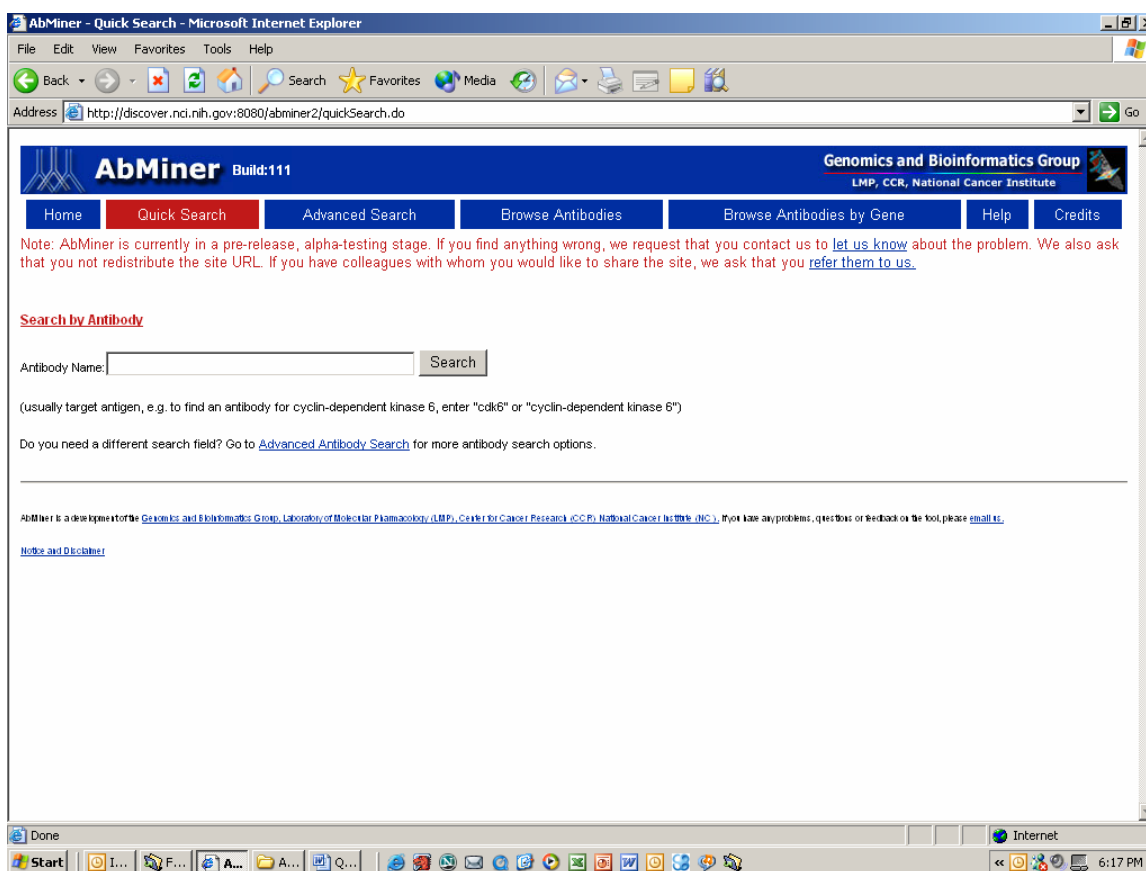
Figure 1: AbMiner Home Page

By clicking on the buttons on the top, the user can choose the appropriate searches described in detail below. Examples are provided as well. Before proceeding, please download the example files located under Help to your home machine. Keep track of where you save them.

Quick Search

The Quick Search permits the input of a single identifier for quick querying.

Figure 2: Quick Search

1. With this function, AbMiner searches antibody by an "Antibody Name". An Antibody Name refers to the product name provided by vendors. In general, the Antibody Name is equal to the target protein of the antibody. If you are not sure what the Antibody Name of your gene of interest is, you may need to translate the identifier using MatchMiner.

2. Here is an example: "p53" is the protein encoded by a gene called "TP53". To find antibodies that recognize p53, you need to type a "common" antibody name for the TP53 protein - "p53".

3. Type "p53" in Antibody Name.

Figure 3: Data entry in the Quick Search page

4. Click "Search" button.

Figure 4: Antibody search results

AbMiner Quick Start   http://discover.nci.nih.gov/abminer

5. You will find a series of antibodies whose target (the antigen) is the p53 protein along with detailed information. On the header row, hypertext in each column provides the definition of terminology.

Advanced Search

The Advanced Search allows you to choose antibodies by details provided in Antibody Information.

Figure 5: Advanced Search page

1. In this view, you can search antibodies using more detailed information or gene identifiers.

2. In "Search Antibodies by Antibody Information", you can choose 6 categories of detailed antibody information. The search results will be a list of antibodies with detailed antibody information.

Figure 6: Antibody search results page

3. In "Search Antibodies by Single Gene Identifier", you can search antibodies from gene identifiers. The results will be a list of antibodies (shown in hypertext) with detailed information of the gene. By clicking the hypertext, more information of each antibody or gene will be provided by links in AbMiner or other databases.

AbMiner Quick Start   http://discover.nci.nih.gov/abminer
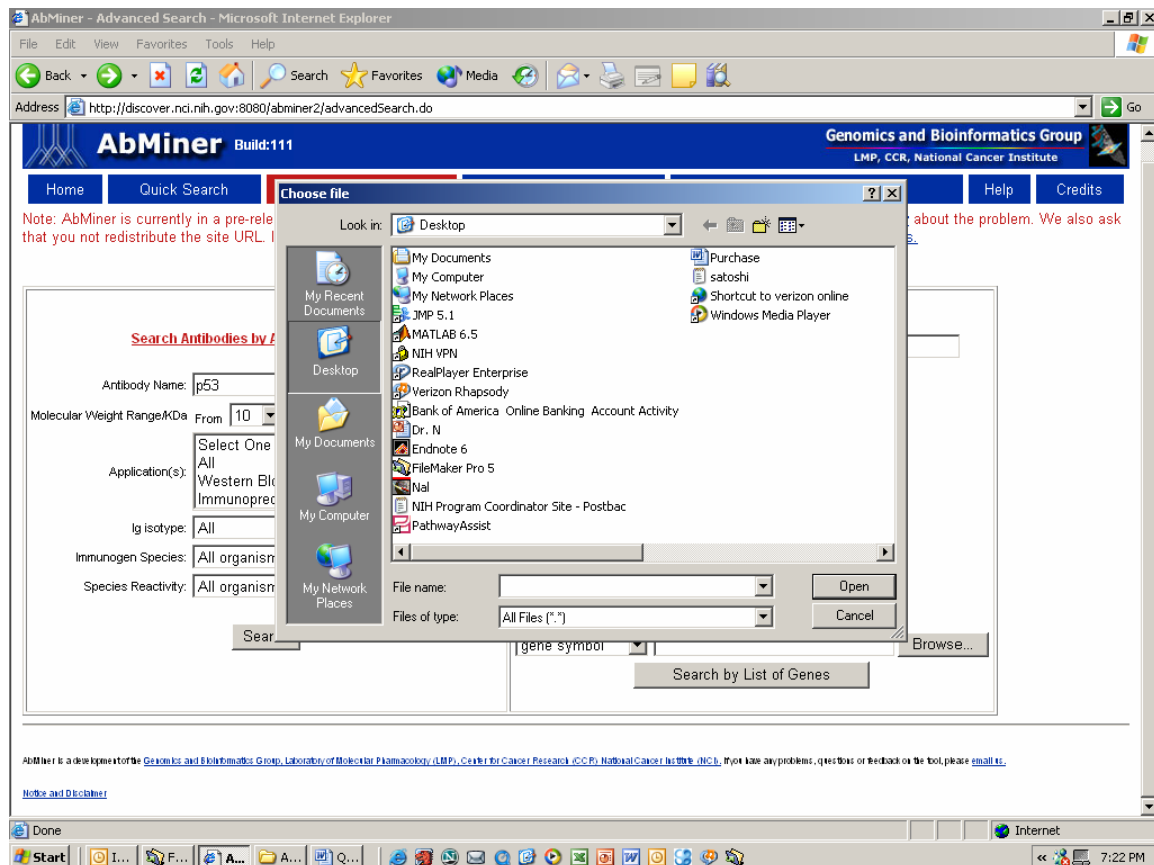
Figure 7: Gene search results page

4. To search antibodies by batch, you need to prepare a list of identifiers. Here is an example using symbol.txt which you can download from the Help menu. The symbol.txt file is a simple 1-column gene list.

ACVR2
ADPRT
AKAP5
AKAP8
BCAR1
CASP2
CASP7
CASP7
CCNA2
CCNB1
CCNE
CD45RB
CD74
CDC2
CDC6
CDH1
CDH1
CDH2

AbMiner Quick Start   http://discover.nci.nih.gov/abminer

CDK4
Click Browse button to set the path. Then click "Search by List of Genes".

Figure 8: Batch searching

The results will be a list of antibodies from many genes. Each hyperlink in the result table lets you access additional detailed information for an antibody or gene.

Figure 9: Gene search results page

Browse Antibodies

All antibodies in AbMiner will be displayed in alphabetical order. Details are provided by clicking the icon in Product Details.

Figure 10: Antibody search results page

Browse Antibodies by Gene

You can browse antibodies sorted by their gene identifiers. If you click Browse Genes button, it will show you a list of antibodies in the database in alphabetical order by Gene Symbol. In addition to the antibody details, information for each gene, such as Unigene cluster, is accessible by clicking the hypertext. Please note that the number of antibodies found does not match with the number of antibodies found in "Browse Antibodies" due to many-to-many relationships between antibodies and genes.

Figure 11: Gene search results page

Relevant Articles

Nishizuka, et al. Cancer Res., 63, 5243-5250, 2003

Nishizuka, et al. PNAS 100, 14229-14234, 2003

Additional Help and Information

You can also review the protocol for antibody screening by Western blotting. You can also get to this document by clicking "Validation Status" in the header row in antibody search results.