

Immune Epitope Database

NEWSLETTER

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<http://www.immuneEPITOPE.org>

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New and Upcoming IEDB Features

Two new features will be available shortly on the IEDB website. Firstly, the Curation Manual, which documents the curation rules and procedures used by the IEDB curation staff and is currently available in pdf format from the Download section of the website, will be replaced by a Curation Manual wiki. This will simplify the process of keeping it current and available to the curation team and to external users. Secondly, a list of approximately 800 potentially relevant patent items will become available for the first time. As part of the IEDB curation effort, the Derwent World Patent Index has been searched for potentially relevant patent items. The enhanced abstracts of all the patent items in the list have been reviewed, but the actual patents have not been read or curated. This information is presented for those users who wish to explore these patent items further. The list includes patents related to Category A-C priority pathogens, emerging and re-emerging infec-

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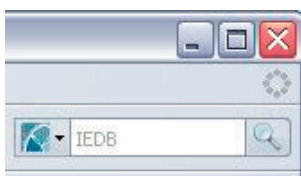
BepiPred - a new prediction tool for linear antibody epitopes

A new antibody epitope prediction tool is now available on the Analysis Resource of the IEDB (http://tools.immuneepitope.org/tools/bcell/iedb_input). BepiPred was developed by Jens Erik Pontoppidan Larsen, Ole Lund, and Morten Nielsen of the Center for Biological Sequence Analysis at the Technical University of Denmark. BepiPred predicts the location of linear B-cell epitopes using a combination of a hidden Markov model and a propensity scale method. A fuller description of the method can be found in their April 2006 article in *Immune Research* titled "Improved method for Predicting Linear B-cell Epitopes," which is available for free via *Immune Research* and *PubMed Central* (PubMed ID 16635264). A tutorial on how to use the B-cell prediction tools is available on the IEDB website at the previously cited url.

Add IEDB Search to Your Browser

Now you can access the IEDB search engine directly from your browser without visiting IEDB's website after installation! Follow the installation instructions below that match the browser you are using. First, go to the "Browser IEDB Search Provide Installation" page at: <http://immunepitope.org/searchProviderInstall.do>, then go to the instructions for the browser you are using.

Firefox 2.0



Click on the "Click here" button to add the IEDB search provider to your Firefox 2.0 browser on the homepage. After you click the link, a prompt will appear to confirm. In the prompt, select the 'Start using right away' check box then click the 'Add' button.

Internet Explorer 7.0



Click on the "Click here" button to to add the IEDB search provider to your Internet Explorer 7.0 browser. After you click the link, a prompt will appear to confirm. In the prompt, select the 'Start using right away' check box and then click the 'Add Provider' button.

Opera



Right click on the IEDB Search Field (screen shot above) and select "Create search" from the menu options. Please note, Opera is not officially supported by the IEDB project.

Camino

Please note, Camino is not officially supported by the IEDB Project. To install a search provider in your Camino Browser follow the instructions here. Our search string is: <http://www.immunepitope.org/httpQuery.do?dispatch=runquery&searchValue=%s>

IEDB Usage in its first year grows significantly

Usage metrics started being collected soon after the beta version of the IEDB was released in February 2006. The chart below presents 13 four-week periods, and shows a general trend of increased use over the first year of operation. Figure 1 shows the number of visits to the site, starting 1 April 2006 through 30 March 2007. A visit denotes a sequence of a visitor's hits up until the point in which the gap between two successive hits is greater than the defined session timeout length. Metrics have been adjusted to exclude IEDB team members and known robots/spiders.

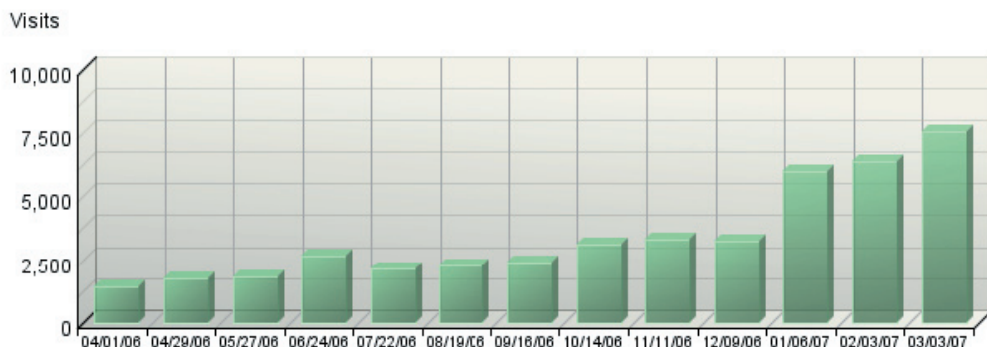


Figure 1. Number of visits to the IEDB website per four week period from 1 April 2006 through 30 March 2007

A number of noteworthy trends and events can be seen in the graph. The first is an upward trend in the website usage. For the four-week period starting 1 April 2006, there was an average of 50 visits a day. In the last four-week period, the average number of daily visits had risen to 269. One can also see certain events reflected in the numbers. An email invitation to authors whose papers had been curated in the IEDB went out on July 13, 2006, which caused a surge in visits as seen in the 6/24/06 bin. A period of relative modest usage can also be seen during the December holiday period.

A significant increase in the metrics can be seen for the first quarter of 2007. This jump in activity can be explained by looking at Figure 2, which shows a rapid rise in the number of http queries over the past three months. In fact, the IEDB received more http queries than all others combined, thus demonstrating the importance of this machine- query interface.

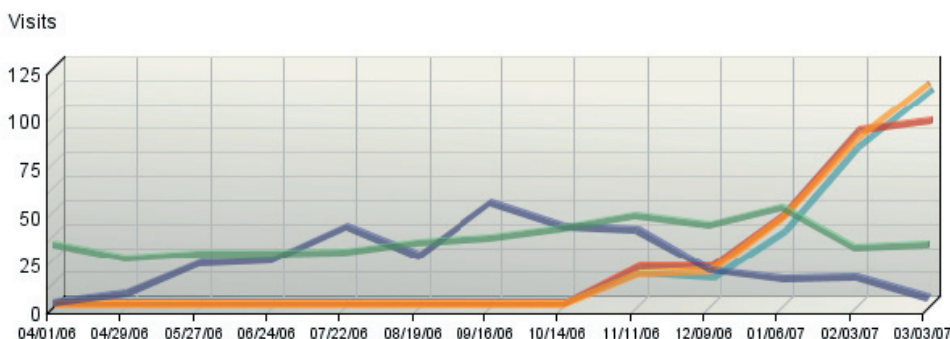


Figure 2. Number of visits by query type on the IEDB website per four week period from 1 April 2006 through 30 March 2007. Five different query types are displayed – HTTP query (green), Browse (dark blue), Simple Search (yellow), Quick Search (red), and Advanced Search (light blue).

Exhibits & Workshops

AAI 2007

American Association of Immunologists
Miami Beach, Florida
May 18-22, 2007

The AAI is a professional association of immunologists with over 6,500 scientists conducting immunology research work together on common interests and issues. This year, the IEDB staff held an exhibit booth as well as a two hour workshop to give patrons and users a chance to ask questions and work directly with the staff. At the workshop, Dr. Bjoern Peters gave demonstrations on how to use the IEDB, such as running queries, and discussed the various available tools. Drs. Steve Wilson, Kerrie Vaughan and Nima Salimi were also on site to answer questions and help users with laptops get a hands on training.

FOCIS 2007

Federation of Clinical Immunology Societies
San Diego, California
June 7-11, 2007

FOCIS has 20 Member Societies and 14 Affiliate Societies, representing roughly 40,000 clinician scientists. Its goal is to improve human health through immunology by fostering interdisciplinary approaches to understand and treat immune-based diseases. The meeting focused on clinical immunology, allergy, autoimmune diseases, transplantation, tumor immunotherapy and some infectious diseases related to autoimmunity. This year, the IEDB staff held an exhibit to inform the FOCIS community of our free and publicly available website. Dr. Alex Sette held a presentation about the IEDB and about 20-30% of booth visitors informed the staff of their interest due to his talk. Visitors praised the high level of detail in the data and the flexible searching capability.

If you have missed us this year, be sure to look out for us next year. We would love to meet you, hear your comments and feedback. Again, a “thank you” for those who dropped by for a visit.

Recent Publication

Nature Reviews Immunology 7, 485-490 (June 2007)
| doi:10.1038/nri2092 | PMID: 17479127

Integrating epitope data into the emerging web of biomedical knowledge resources.

Bjoern Peters, Alessandro Sette
La Jolla Institute for Allergy and Immunology

The recognition of immune epitopes is an important molecular mechanism of the vertebrate immune system to discriminate between self and non-self. Increasing amounts of data on immune epitopes are becoming available due to technological advances in epitope-mapping techniques and the availability of genomic information for pathogens. Organizing this data poses a challenge that is similar to the successful effort that was required to organize genomic data, which needed the establishment of centralized databases that complement the primary literature to make the data readily accessible and searchable by researchers. As described in this Innovation article, the Immune Epitope Database and Analysis Resource aims to achieve the same for the more complex and context-dependent information on immune epitopes, and to integrate this data with existing and emerging knowledge resources.

Curation Update

Curation of data relating to NIAID Category A, B, and C priority pathogens, NIAID emerging and re-emerging infectious diseases (<http://www3.niaid.nih.gov/research/topics/emerging/list.htm>), Malaria, Hepatitis B, Clostridium tetani, Leishmania, and Candida albicans is current for articles appearing in PubMed as of the end of March 2007. These will be updated in July to cover newer published articles and pertinent references recently brought to our attention. The curation of mycobacterial diseases, especially Tuberculosis, is current through June 2007. The IEDB curation team has started curating herpesvirus references and will start on allergen references later this year, followed by autoimmune diseases in 2008.

Science In the News

Recommended Reading

Rice-based mucosal vaccine as a global strategy for cold-chain- and needle-free vaccination

Published online before print June 15, 2007, 10.1073/pnas.0703766104

PNAS | June 26, 2007 | vol. 104 | no. 26 | 10986-10991

Nochi T, Takagi H, Yuki Y, Yang L, Masumura T, Mejima M, Nakanishi U, Matsumura A, Uozumi A, Hiroi T, Morita S, Tanaka K, Takaiwa F, Kiyono H

PMID: 17573530

Debbie's review: Japanese researchers developed the first rice-based oral vaccine expressing cholera toxin B subunit (CTB). One rice strain produced 30 µg CTB per seed in a functionally native form that was resistant to digestion in the gastrointestinal tract. Mice orally vaccinated with the CTB-expressing rice seed powder induced CTB-specific serum IgG and fecal IgA antibodies and no rice storage protein-specific immune response. Furthermore, when challenged orally with cholera toxin, vaccinated mice showed no clinical signs of diarrhea. This type of mucosal vaccine has the advantages of being 1) inexpensive to produce, 2) stable for extended storage at room temperature, 3) effectively administered orally or nasally without requiring needles and syringes. This type of vaccine design provides effective induction of mucosal and systemic immunity against emerging and re-emerging infectious pathogens that invade the host via mucosal surfaces of the gastrointestinal, respiratory, and/or genitourinary tracts.

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tious diseases, Malaria, Hepatitis B, Clostridium tetani, Leishmania, Candida albicans, and other diseases. Users can search the list by using the "find" feature of their browser.

Contact Information

The Immune Epitope Database & Analysis Resource is supported by a contract from the National Institute of Allergy & Infectious Disease, NIH, DHHS (Contract HHSN266200400006C). The newsletter is distributed four times a year. We welcome communication from the users of the IEDB database and invite suggestions for articles in future issues. To subscribe to the IEDB newsletter or to contact project staff, send your email information to the email address below.

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