

BioResource now !

Our monthly newsletter features a variety of information, highlighting current domestic and international issues concerning bioresources.

Introduction to Resource Center No.21

National BioResource Project "General Microbes"

Yoshimi BENNO RIKEN BioResource Center
Microbe Division / Japan Collection of Microorganisms

Hot News from Abroad No.20

The 2nd International Biocuration Meeting (IBC2007)

Victoria Petri, Ph.D.
Research Scientist, Rat Genome Database, Medical College of Wisconsin

Ongoing Column No.27

Let's make a Google gadget!



Download the PDF version of this newsletter at
<http://www.shigen.nig.ac.jp/shigen/news/>

Other information on bioresources is available at

- NBRP <http://www.nbrp.jp/>
- SHIGEN <http://www.shigen.nig.ac.jp/indexja.htm>
- WGR <http://www.shigen.nig.ac.jp/wgr/>
- JGR <http://www.shigen.nig.ac.jp/wgr/jgr/jgrUrlList.jsp>

- "BMB 2007" Biochemistry and Molecular Biology (The 30th Annual Meeting of the Molecular Biology Society of Japan & The 80th Annual Meeting of the Japanese Biochemical Society)
Panel exhibitions of NBRP : December 11-14, 2007 10:00 - 18:00
- "The 1st Research Seminar on Rat Resources"
Date : January 18, 2008 (Fri.) 13:00 - 17:30
Place: The 2nd Hall at the Shogoin-Gotenso (Kyoto city)

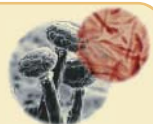
Introduction to Resource Center No.21

National BioResource Project "General Microbes"

Yoshimi BENNO, Section Head
RIKEN BioResource Center, Microbe Division / Japan Collection of Microorganisms

<http://www.jcm.riken.jp/>

Since 1981, the Japan Collection of Microorganisms at RIKEN BioResource Center (BRC-JCM) has been collecting, preserving, and distributing microorganism strains for academic research. Originally, it was known simply as the JCM. After the JCM was transferred to RIKEN BRC in 2004 in response to industry-government-academia research communities, we have focused on microorganisms that are used as fundamental resources in health and environment research. Considering the trend of research and development in and out of the country, we, as a core institute in the country, aim to construct resource foundations of the highest quality in the world.



Until now, we have been supporting users by actively distributing microbial strains with biosafety level (BSL) 2 and issuing the "Certificate of Deposition and Distribution," which is submitted to the International Journal of Systematic and Evolutionary Microbiology. Following the integration with BRC, our project contents have been changing considerably to enhance the deposition of new microbial strains and the distribution business. In particular, with the introduction of material transfer agreement (MTA), we endeavor to promote and establish the intellectual property right of microbial strains, which has never been well-recognized.

In addition, regarding preservation and distribution, we have already obtained ISO 9001:2000, the international management standards, and we conduct quality control tests based on their recommendations. Moreover, in order to actively publicize microbial strains and other useful information, we issue mail news monthly, JCM newsletters annually, and BRC-JCM catalogs triennially and introduce our projects actively at conferences, which we consider opportunities for listening to the demands of microbial strain users. Furthermore, we also initiate training sessions regarding preservation and culturing methods to promote further uses of microbial strains.

The BRC-JCM has been appointed as a core institute for the treatment of whole microorganisms and aims at strategically covering microbial resources that are necessary for research and development in the country. Besides, we also aim to establish an international initiative by strengthening the collaboration with facilities preserving microorganisms in the country and forming a cooperative relationship with similar facilities in Asian countries.

The BRC-JCM, which has diverse microbial resources, targets microorganisms for fundamental research. Thus, we collect, identify, quality control, preserve, and distribute microorganisms by focusing on the "standard strains" that are indispensable for research and development or those that are used in health and environmental research (Fig. 1). Specifically, the microorganisms include lactobacillus, anaerobic and aerobic bacteria, streptomyces, archaea, extremophiles, yeast, and filamentous bacteria.



1 Microorganisms in health research:

Lactobacillus, *Bifidobacterium*, and *Clostridium* are microorganisms that are closely related to health maintenance and promotion; however, many unknown bacterial species and strains still exist, and the collection of standard strains does not completely meet the diverse needs of users. In order to collect a wide variety of bacterial strains, including reference strains, we are striving to cooperate with research communities and develop resources independently.

Microorganisms in environment conservation research:

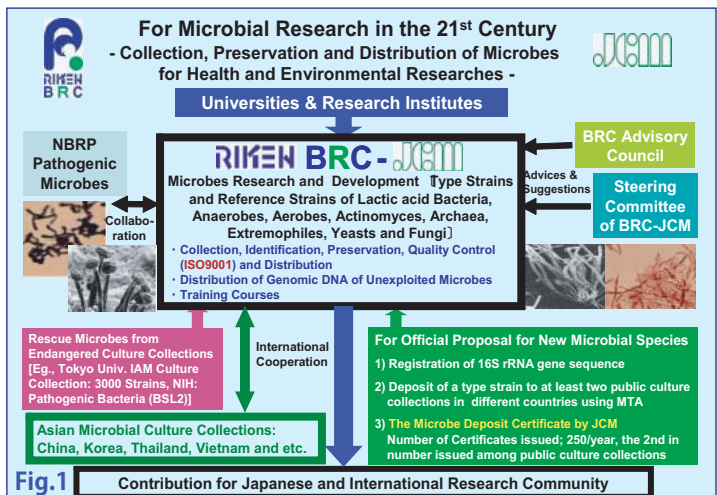
Research regarding microorganisms related to environment conservation is still in its early stages, and numerous research laboratories have identified and isolated microbial strains related to environment conservation. Microorganisms related to this field include streptomyces, archaea, and mycophyta (yeast and filamentous bacteria). Based on the previous achievements of the strain preservation project, we collaborate with research communities to identify, collect, preserve, and distribute microorganisms that may be used to conserve environments.

Microorganisms in extreme environment research:

Searching and culturing technologies of archaea and extremophiles are still under development, and we endeavor to further increase the number of strains and species. In addition, foreseeing the increase in the number of endangered species as a result of global warming, we have collected bacteria in the north and plan to preserve bacterial species and efficiently use the isolated strains.

4 Consolidation and distribution of genome DNA of microbial strains:

Since anaerobic bacteria are difficult to culture in general laboratories, their genomic DNA is frequently used instead. Thus, we collaborated with the Gene Engineering Division at RIKEN BioResource Center and initiated the distribution of genomic DNA of microorganisms that are difficult to culture such as obligatory anaerobic bacteria and BSL2 strains and whose distribution is restricted by the plant protection law.



5 Microbial strain transfer from microorganism preservation facilities in critical situations:

The Institute of Applied Microbiology (IAM) collection at the Institute of Molecular and Cellular Biosciences, the University of Tokyo has been transferred to our institute by the Department of Life Science at the Ministry of Education, Culture, Sports, Science and Technology (MEXT). There are many collection centers in the country that are operationally in a critical condition. Thus, the transfer, preservation, and distribution of these precious microbial strains are also our responsibility as a core institute.

The utilization of microbial strains distributed by BRC-JCM during 1997–2006 was investigated by searching journal articles, and the number of articles that used and distributed the strains increased annually. The numbers expressed as research achievements indicate that JCM strains have been used by many researchers and reflect the success of our preservation project of microbial strains. We, the BRC-JCM, are proud of being trusted by numerous researchers and research institutes.

Hot News from Abroad No. 20

The 2nd International Biocuration Meeting (IBC2007)

Victoria Petri, Ph.D.
Research Scientist, Rat Genome Database
Medical College of Wisconsin

Dolce Hayes Mediterranean style mansion sprawling over 40,000 acres on the south side of San Jose and amid a picturesque setting with lavish houses and flower scented streets, housed the 2nd International Biocuration Meeting from the 25th to the 28th of October 2007. Two and a half days of oral presentations in the morning, concurrent workshops in the afternoon and poster presentation in the evening gathered together more than 150 participants from U.S. and abroad. Mostly from the academic sector but also from the industry, government and others the participants represented curators, scientists, PIs, students and post-docs, programmers and group leaders. As a whole, this was a group of people passionate about what and how they are doing, concerned with doing it better, curious and eager to explore new venues.

The talks, posters and some of the workshops were grouped by topics; the posters and workshops had a few more. The common topics were: (1) literature collection and curation; (2) genome sequence annotation and comparative genomics; (3) ontology development; (4) functional genomics data curation; (5) community curation. The posters also addressed training/professional development and database tools while the additional topics addressed by workshops were curation standards and practice and collaboration between publishers and database curators.

In a few words I will summarize the things that mostly caught my attention and/or left an enduring impression and that are not necessarily big names or players like Amos Bairoch or KEGG. Placing curation in a broader context as it did originate with the first attempt to make indexes or create databases that deal with biological information – for instance, the Enzyme Commission, MeSH, National Library of Medicine, the Protein Databank. A number of interesting databases like the Comparative Toxicogenomics database at the Mount Desert Island Biological Laboratory where one can search for genes that interact with a particular chemical or all chemicals a gene interacts with, also disease-chemicals, disease-gene interactions; the PLEXdb at the University of Iowa which is dedicated to gene expression data for a number of plants but has very interesting visualization tools such as seeing the plot of a gene expression pattern across conditions or viewing all other genes that have a similar pattern; the image database for the mouse brain atlas at BIRN which for those in the field must be quite impressive. Tutorials developed at OpenHelix – powerpoint, flash movies or webinars to train scientists in how to use tools such as the genome browsers; community outreach such as the TAIR's where experts and curators got together to improve the quality of metabolic pathway curation or the wiki-based E.coli approach to annotation; the interest in developing natural language processing tools for text mining to aid in literature searches which continues to be a big and challenging issue; the possibility of curators-publishers interactions via curators mediated peer reviewing and also the many resources for networking, pre-publishing, text-mining developments Nature is trying to offer. Finally, all presentations and posters are available on line at

<http://genome-www.stanford.edu/biocurator/IBC2007/abshtml/abstract-table.html>

The atmosphere was vivid and friendly with people happy to see each other again or make new acquaintances, to talk about what they're doing or would like to do, about what things are or should be. The food was flowing and the three-hour free bar busy. While going from one building to another, or just enjoying a few moments between events, we basked in the Californian sun.

Pictures taken at the meeting can be seen at:

<http://picasaweb.google.co.kr/seungyonhee/Biocuration200702?authkey=s7A03UL525k>

Official site of the meeting is at:

<http://www.biocurator.org/Mtg2007/index.html>

10 minutes

Information Technology - 27-

Let's make a Google gadget!

For those who do not know what a gadget is, please try to recall the weather forecast or calendar tools that you often see. There are many types of gadgets available on the internet and basically, anything can be turned into a gadget. Gadgets are very popular and conveniently used by a lot of people because it is light-weight and a great variety of gadgets are available.

This time, we will make a **Google gadget** and use it with our Google Desktop.

Writing a Google gadget

(1) You can use any text editor to write the gadget but I would like to use an online editor called Google Gadgets Editor. It has a preview function that allows you to preview the results while you write your gadget.

● Google Gadgets Editor:

<http://www.google.co.jp/intl/ja/apis/gadgets/gs.html#Scratchpad>

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <Module>
3 <ModulePrefs title="Bio Resource World Quick Search" />
4 <Content type="html"><![CDATA[
5 <form method="post" action="http://resourcedb.nbrp.jp/searchAction.do" target="_blank">
6 <input type="text" name="searchString" value="" />
7 <input type="submit" value="GO" />
8 </Content>
9 </Module>

```

Fig. 1: Screenshot of the Google Gadgets Editor

Gadgets are specified in XML. The <ModulePrefs> tag in line 3 has a title attribute that indicates the title of the gadget.

The actual content of the gadget is written in between <![CDATA[in line 4 and "]]>" in line 9. Contents can be written in HTML, javascript and stylesheet. Therefore, you can write gadgets if you have a basic understanding in HTML.

Line 5-8 contains the HTML for a simple Bio Resource World search form. Click on the "Preview" tab to view the result.

If you type a keyword into the textbox and click Search, the search results of Bio Resource World will be displayed in a separate window.

Fig. 2 shows a gadget which makes use of stylesheet to look more presentable. This example is available at

http://www.shigen.nig.ac.jp/newsletter/brw_samplegadget.xml and you can use Google Gadgets Editor to view it. From the "File" menu, select "Open from URL". In the "Open Gadget by URL" window, type the URL and click Open. Click on the Preview tab to view this example. When you are finished, save the codes in the editor to a file.

Fig. 2: Bio Resource World Quick search gadget

(2) You can distribute your gadget to the public. Next, let's try to publish your gadget. We will use Google Page Creator to do so. (You need to have a Gmail account in order to use Google Page Creator.)

● Google Page Creator: <http://pages.google.com/>

Login to Google Page Creator and select [upload] from the "Uploaded stuff" box located on the right of the Site Manager page. Upload your gadget which you have saved as a file. Type the URL for your gadget is <http://<user name>.googlepages.com/<gadget name>>.

Fig. 3 Google Page Creator

(3) Lastly, add your gadget to Google Desktop. Start Google Desktop and open the side bar. Click the "+" located on the top right of Google Desktop and the Add gadgets window will appear. Next, type the URL of your gadget which you have published with Google Page Creator into the textbox and click the search icon on the right. Your gadget should appear as a search result. Place your cursor over your gadget and click the "Add" button. If your gadget shows up on your Google Desktop, then you have successfully added your gadget.

If you wish to distribute your gadget to the public as an iGoogle gadget, you will have to submit your gadget to Google.

Submit Google Gadgets: <http://www.google.com/ig/submit?hl=ja>

Although this is a very simple example, you can continue on to creating your original gadget to customize your iGoogle or other start up pages.

Tohru WATANABE
(translated by Sharoh Yip)

Editor's Note: Dr. Bennno, who is a famous scientist for intestinal bacteria, appears on TV quite often these days. He is also leading the Bacteria section of the RIKEN BioResource Center. Dr. Victoria kindly volunteered to report the IBC2007. I deeply appreciate their contributions. (Y.Y.)

Contact Address:

1111 Yata, Mishima-shi, Shizuoka 411-8540, Japan
Center for Genetic Resource Information, National Institute of Genetics
Tel: 055-981-6885 (Yamazaki)
E-mail: BRnews@chanko.lab.nig.ac.jp

Reprinting and reduplication of any content of this newsletter is prohibited.

All the contents are protected by the Japanese copyright law and international regulations.