BioResource now !

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## BioResource now ! Vo2.No.10 is here

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    Hironori Niki, Professor, Microbial Genetics Laboratory
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Download the PDF version of this newsletter at
http://www.shigen.nig.ac.jp/shigen/news/news.jsp

Other information on bioresources is available at

| | |
|---|---|
| NBRP | http://www.nbrp.jp/index.jsp |
| 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 |

## Information on Resource-related Events

- December 6 - 8: "Molecular Biology Society of Japan: Forum 2006" at Nagoya Congress Center
  NBRP Panel Exhibition: http://www.aeplan.co.jp/mbsj2006forum/

Detailed information is available at http://www.nbrp.jp/index.jsp

## Introduction to Resource Center No.12

### Genetic Resources for *Escherichia coli* and its Plasmid Vector

Hironori Niki, Professor, Microbial Genetics Laboratory
Genetic Strains Research Center, National Institute of Genetics

### 【1】The *Escherichia coli* genetic resource project has been in operation for 30 years.

The National Institute of Genetics (NIG) founded the Microbial Genetics Laboratory in 1976 to conduct the property development and preservation project for *E. coli*, Bacillus subtilis, and Salmonella spp. and phages and plasmids that infect these microorganisms. The preservation and provision projects undertaken for approximately 15,000 mutant strains have received wide appreciation from researchers worldwide. In 1997, the laboratory was redesignated as the current Microbial Genetics Laboratory, Genetic Strains Research Center. Since July 2002, it has continued to expand its activities as the core institute for *E. coli* research under the National BioResource Project (NBRP). Currently, 30 years since the redesignation, carefully selected genetic resources of over 23,000 *E. coli* strains are available. The development and maintenance of the laboratory to date can be largely attributed to the endeavors of Dr. Akiko Nishimura, who has been involved in the project from the outset. Her contributions are much appreciated not only by researchers dealing with *E. coli* but also by numerous other researchers who have benefited from the available resources. Even after Dr. Nishimura retired in March 2005, the project continues to date. Starting from this fiscal year, the cloning vector collection project conducted by Dr. Seiichi Yasuda has been included under the NBRP E. coli project upon his retirement. Thus, the *E. coli* project is developing further, and its contribution to other research activities is increasing.

(A brochure with a list of the preserved and provided strains was published in 1994)

### 【2】Abundant resources are preserved and available.

All the published resources provided here are nonpathogenic strains derived from *E. coli* K12 strains. Thus, any of these strains can be used in recombinant DNA experiments. In addition, most of these strains are nonrecombinant. The resources are broadly categorized into the following three groups.

- Mutant E. coli Strain Resources
- Cloned Genetic Resources
- Cloning Vector and Host Resources

NBRP *E. coli*
http://shigen.lab.nig.ac.jp/ecoli/strain/

The mutant *E. coli* strain resources include mutant strains constructed by numerous researchers in the past for genes related to metabolism, DNA replication, or protein synthesis. In addition, an exhaustive list of gene-knockout mutant strains that were systematically constructed after the *E. coli* genome was sequenced has been included under these resources. The following three types of gene-knockout mutant strains are available.

**Transposon-insertion mutant strains:** These comprise gene-knockout strains that are constructed by transposon insertion into their genome and continue to grow after the insertion. A total of 6,492 strains in which transposon insertion sites were confirmed by genomic sequencing are available.

**Extensive chromosome-deletion mutant strains:** These comprise mutant strains in which wide regions of the *E. coli* chromosome are deleted. A total of 124 strains are available, including mutant strains lacking 1.4 Mbp, which corresponds to 29.7% of their original chromosome length.

**KEIO collection:** This includes strains in which a gene is knocked out and replaced by a kanamycin-resistance gene. A total of 3,840 E. coli mutant strains that are able to grow despite the replacement are available.

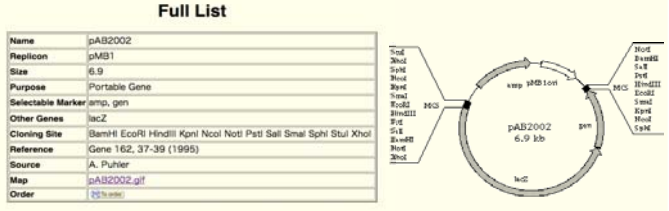
The cloned genetic resources comprise the following two exhaustive clone libraries of plasmid vectors with different properties.

**ASKA clones:** This library comprises genetic resources for individual genes cloned by using high-copy-number vectors; these are expressed as His-tagged gene products.

**Mobile Plasmid Clones:** This library comprises individual genes cloned by using low-copy-number vectors; the plasmids used in this case can be transferred to target cells by merely mixing them with the cells because the plasmids contain mob gene which enables the plasmids to transfer from $F^+$ to $F^-$ by F-mediated conjunction.

Finally, the cloning vector and host resources include 465 cloning vectors and 83 host *E. coli* strains. The vectors are available only for use with *E. coli*. With regard to the vectors, in addition to information pertaining to their lineage and selective markers, plasmid maps can also be referenced. This information is also available in a brochure, which can be ordered from the website for cloning vectors.

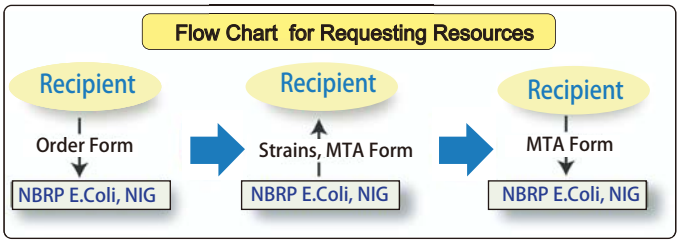
Further information is available on the NBRP *E. coli* website. Please make use of these resources for your research considering the property of each resource.



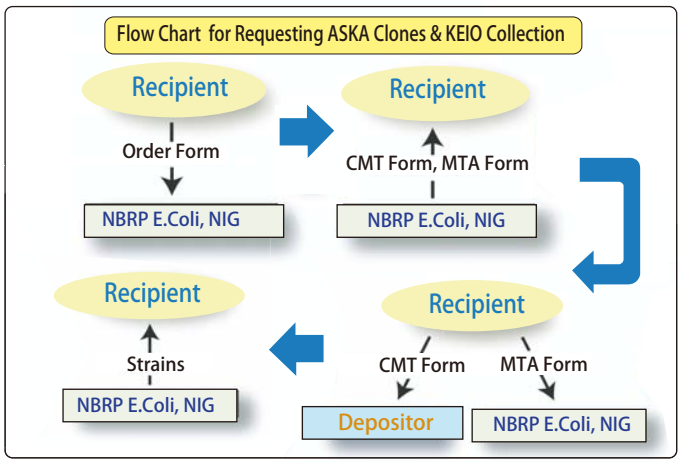

(Information posted on the website for cloning vectors)

## 【3】Resources are available for basic research worldwide.

The *E. coli*-related resources introduced here are widely available for basic science research worldwide. Although, as described later, availing of certain resources requires the permission of the institute that deposited that particular resource (developers), other resources are immediately provided on request. After confirming the receipt of the *E. coli* strains provided, users are expected to fill out the material transfer agreement (MTA) documents and mail them back to the NIG. Further, it is mandatory that the MTA be signed or sealed. The term "center president" on the document refers to the academic dean in the case of undergraduate or graduate schools and the director in the case of research institutes. An official in charge of intellectual property rights, if present, is expected to sign and seal the documents. Currently, resources are provided free of cost since the center is aided by the NBRP project; the users generally bear only the shipping cost, and the resources are shipped and paid for on arrival.




Of the resources available, availing of the KEIO collection and ASKA clones requires preliminary permission from the depositor—the Nara Institute of Science and Technology (NAIST)—to protect its intellectual property rights. The request for these resources is accepted on the website, and the mail confirming acceptance, deposit agreement form, and MTA are mailed. The completed and signed deposit agreement form and the MTA should be mailed to an officer in charge of intellectual property rights at the NAIST and NIG, respectively. The requested resources are provided on submission of these two documents. We request user cooperation although the process is slightly complicated and time-consuming. A confirmation system for tracking the request status is being consolidated on the website, with the aid of Dr. Yamazaki at the Information Center, to enable users to check the status of their deposit agreement form and MTA after making a resource request.




## 【4】Please cite NBRP *E. coli* if our resources prove fruitful for your research.

NBRP *E. coli* aims to function as a resource center meeting the highest level of international standards. Our task is to provide resources to researchers who need them. Thus, if our project contributes to your research, we consider our activities rewarded.

We would, therefore, be very grateful if National BioResource Project (NIG, Japan): *E. coli* or NBRP (NIG, Japan): *E. coli* received mention in the acknowledgements section of published articles or research presentations.

## Information Technology Vol.18

### 10分 "Notification of Updates on Weblog Sites"

Google

As of September 2006, the number of active users who post an article on a weblog site at least once a month exceeded 1.7 million (*). Thus, some readers of this newsletter may be transmitting information via weblog sites. Most weblog sites provide an "RSS field" that records information updated on the sites; however, does anyone really make use of this feature? Presently, updated information on a site can be immediately reflected in the search results of search engines such as Ask.jp, Google, or Yahoo! by notifying them using the RSS.

For instance, in the case of Ask.jp, the address of the PING (update acceptance) server (http://ping.ask.jp/xmlrpc.m) is displayed. Most weblog services contain PING transmitting functions, and the updated information can be reflected in the Ask.jp search results within 5 min by notifying the PING server of the updates.

Ask.jp

Similarly, Google provides a service by which it can be notified of updates on weblog sites either manually or via API. Manual notification can be done by visiting the website http://blogsearch.google.co.jp/ping, typing the address of the concerned weblog site or the field address, and clicking the "Submit Blog" button. Subsequently, Google will display the information on the update of the weblog in searches conducted worldwide.

Google

Finally, Yahoo! provides a service called "Site Explorer" (http://siteexplorer.search.yahoo.com/) . Since this service is provided by Yahoo! US, it requires a Yahoo! US ID. First, the concerned weblog address should be entered. Next, a specified file should be uploaded for Yahoo! to confirm whether the account owner is an authorized administrator of the site. Subsequently, the field address should be typed and the "Add Feed" button should be clicked on to complete the process.

Yahoo!

These are useful services for weblog users hopeful of their weblogs becoming known to as many users as possible.

*Referenced URL: https://www.google.com/webmasters/sitemaps/

(Gaku Kimura)

**Editor's Note:** The *E. coli* resource project was handed over to the enthusiastic Dr. Niki by Dr. Akiko Nishimura who previously headed it. Since the provision of an exhaustive collection of genome-wide mutant strains was initiated, the number of resources provided has increased dramatically, and it brings squeals of delight to downstairs of my office. I appreciate the contribution of the introductory article. The *E. coli* resource database together with the Profiling of *E. coli* Chromosome (PEC) database, another database that mainly contains essential gene information, is used by numerous researchers worldwide. (Y.Y.)

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