

BioResource now!

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

Hot News from Abroad No.27

Avoidance of Complexity in MTA and MTA Survey

Mutsuaki Suzuki, Director
Intellectual Property Unit, Natl. Inst. of Genet.



Erudite Lecture Series by Dr. Benno: No. 4

How are enteric bacterial flora formed in children?

Hot News from Abroad No.28

3rd International Biocuration Conference Report

Coming up in the next issue!
The next month's issue will be "Quails."

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/>
- ◆ WGR <http://www.shigen.nig.ac.jp/wgr/>
- ◆ JGR <http://www.shigen.nig.ac.jp/wgr/jgr/jgrUrlList.jsp>

Announcements (Details are available at <http://www.nbrp.jp/>)

- **Human induced pluripotent stem (iPS) cell and embryonic stem (ES) cell bank project was initiated.**
- **Technical training on simple vitrification methods is organized.**
Dates: April 10, 24(Fri.), May 8, 15, 22, 29(Fri.), June 5, 19 (Fri.)
Time: 13:00-16:00
Place: Cell Engineering Division, RIKEN BioResource Center
- **Lecture Series for the Standardization of Culturing and Analyzing Human Pluripotent Stem Cells: No. 1 "Xeno-free Culturing"—Possibilities, Issues, and Validations for the Applications of Pluripotent Stem Cells**
Date and Time: 11:00-17:30 on Thursday, June 25, 2009.
Place: Auditorium on the first floor of Building C, Center for Developmental Biology, RIKEN

Japanese Association for Laboratory Animal Science will launch a serial article on NBRP animal resources in "Experimental Animals"—the in-house journal—in the second issue of Vol. 58 (published in the beginning of April 2009).

Hot News from Abroad No.27

Avoidance of Complexity in MTA and MTA Survey

- MTA section meeting at the annual meeting of AUTM 2009 -

Mutsuaki Suzuki, Director
Intellectual Property Unit, National Institute of Genetics

The Association of University Technology Managers (AUTM) Annual Meeting 2009 was organized in Orlando, FL, USA, from February 11 to 14, 2009. We will report the issues discussed in a special interest group regarding material transfer agreements (MTA-SIG) at the meeting.



Photo: Conference Hall in the Orlando World Center, Marriott Resort & Convention Center, Orlando, FL.

The meeting was initiated with a sentence from Brian Clark, City of Hope, "I found our enemies, which are us." He pointed out that we, university affiliates, are complicating MTAs after all. Since MTAs have currently become much more complicated even among academic institutions, the necessity of developing new frameworks for MTAs was postulated. In order to find a key for resolving the issue, MTAs of academic institutions were investigated and the results of the MTA survey were reported.

Jodi Hecht of Beth Israel Deaconess Medical Center, processes 300 MTAs in a year. Recent trends in MTAs among academic institutions include nonexclusive commercial use of licenses. Hecht pointed out that this trend was strengthened owing not only to the patented or licensed materials but also to the fact that officers at legal departments in universities persistently care about the wordings of MTAs so that the materials will be more broadly protected. In addition, Hecht raised the issue of MTAs in academia by citing a term regarding intellectual property as an example: "The providers of a material will have the right to receive a global exclusive license including a sublicense for any invention invented with the material regardless of the patentability of the invention." Hecht claimed that this statement obligates the receivers of the materials to waive many rights regarding the invention.



↓

Presenters and audience actively discussed the issues regarding NIH funds, uses of UBMTA/SLA[✳], and discrimination of research contents.

Moreover, Ester Ally, St. Jude Children's Hospital, reported on the annual case load of MTAs in this hospital, which was 200 in 1995 and increased to 800 in 2007 while working alone. Ally suggested the necessity of the so-called click-through agreements as a new framework of MTA in future; in such agreements, the MTAs are contracted on the website without hardcopy documents or signatures, such as the ones employed by Addgene, NCI, and MMRRC. Participants also discussed the possibility of MTA violations and the use of UBMTA/SLA[✳].



Next, Laurie Tzodikov, Princeton University; Steve Harsey, University of Wisconsin; Allyson Best, University of Mississippi; et al. reported on their ongoing MTA survey. This survey aims at clarifying the case load and processing time of all the MTAs in order to understand the important items and conditions of MTAs through the investigation of the throughput of MTAs, number of workers, relevant departments, complexity of processes, and administration methods at each institution. Hearing investigations have already been conducted at 58 universities; however, the administration method of MTAs was found to differ according to the university. The MTA survey was approved at this annual meeting and will be formally initiated.



There are many issues in MTAs due to the lack of recognition in their productivity and importance. For example, we continuously discuss the issue that only a few people inevitably engage in processing a large amount of MTAs and negotiating the terms of intellectual property rights. Although there are unified systems such as UBMTA/SLA[✳], many issues are still unresolved. The practical application of web-based MTA systems also faces many problems to be resolved.

We hope that progress towards resolving these issues will be made by conducting the MTA survey to disclose the actual conditions. ■



✳UBMTA : Uniform Biological Material Transfer Agreement
✳SLA : Simple Letter Agreement



Erudite Lecture Series by Dr. Benno: No. 4

How Are Enteric Bacterial Flora Formed in Children?

Natural delivery may contaminate a baby with bacteria in the parturient passage and even with enteric bacteria if the baby is covered with feces. If a baby makes contact with the mother's feces, the baby's enteric environment will be determined. In other words, if harmful bacteria are predominant in the mother's intestine, the enteric environment of the baby will probably be occupied predominantly by harmful bacteria. Although the enteric environment of the baby can obviously be altered by the diet after birth, it is predominantly affected by the enteric bacteria that are present immediately after birth.

A particular group of *Clostridium* species resides in the colon of newborn infants and the extent of *Clostridium* propagation presumably associates with the probability of developing various diseases. Considering this vertical infection of harmful bacteria from a mother to her baby, we apprehend the condition of the feces of young ladies. Thus, ladies should realize that when they bear children, their unhealthy feces will be harmful not only to them but also to their children.

Accordingly, a new mother's concern will be what to let her baby drink: breast milk, powdered milk, or mixed milk? It is well known that babies that are fed breast milk have a lesser probability of developing disordered digestion or intestinal infections, catching common cold, or dying because of the cold than babies that are fed powdered milk. The feces of the babies nourished with breast milk are vitelline and smell mildly, whereas those of the babies nourished with powdered milk are brownish yellow and smell stronger. An investigation of the enteric bacteria of babies revealed that bifidobacteria are predominant in the babies nourished with either breast milk or powder milk; however, other enteric bacteria such as *Escherichia coli*, *Enterococci*, and *Clostridium* are less in the babies that are fed breast milk.

The enteric environment and bacterial flora will be altered depending on the future diet. Nevertheless, the initial group of enteric bacteria in the intestine rather than the future alteration of the enteric environment primarily determines the entire life of the environment. The enteric environment of mothers during pregnancy and at delivery is extremely important in order to transfer preferable bacteria to their babies and let these bacteria grow in the babies. I would like to draw the attention of young ladies to this question: "Are you ready to let your babies inherit your feces or bacteria?"



Hot News from Abroad No.28

Report on 3rd International Biocuration Conference April 16 - 19, Berlin, Germany



More than 200 people (including 11 Japanese people) working on databases gathered and actively discussed for 3 days the ways to enhance the quality and quantity of curations. In particular, the manual extraction of information from journal articles cannot cope with the rapid accumulation of scientific knowledge, whereas machine learning approaches cannot achieve the expected qualities. In order to resolve this issue, it is ideal to develop a system in which authors directly register information to databases on publication; however, the realization of such a system has been difficult. This time, it was reported that 2 journals — *FEBS Letters* and *Plant Physiology* — initiated the system in which authors register information to databases by cooperating with the Molecular INTeraction database (MINT) and the Arabidopsis Information Resource (TAIR), respectively; this was considered to be a giant step toward the realization of an ideal biocuration system. In addition, Oxford Journal announced the publication of a new journal, *DATABASE*[1], indicating a widespread recognition of the importance of databases and curations. An intense discussion took place regarding curation errors, and the necessity of peer-reviews of the curations was also pointed out at the end (Cusick 2009[2]). It was a fruitful conference, where we were stimulated by finding various databases and useful tools and by actively exchanging information with the affiliates. The contents of oral and poster presentations are published in *Nature Precedings*[3].



Science & Conference Center



Poster Session

- [1] <http://database.oxfordjournals.org/>
- [2] *Science* 2008, 322(5898):104-10
- [3] <http://precedings.nature.com/collections/biocuration-09>

This was the first time I participated in the conference. My first surprise was meeting so many people working on annotations (>200 people), who I rarely meet in Japan. Moreover, it was impressive to see many elderly women, including myself, communicating with each other at the conference.



Conference Hall

The conference consisted of seminars, workshops, and poster presentations. Many topics focused on the issue of the impossibility of manually annotating useful resources in the journal articles, which cover exponentially accumulating research achievements, and compiling them into databases. Many effective tools related to this issue were also introduced. One seminar presentation was concerned with the effective application of Textpresso to the annotation of Wormbase, which is a major database of *Caenorhabditis elegans*. Although I am working on developing the Textpresso for rice and thus far refer only to abstracts, the seminar inspired me to further improve the tool by incorporating full text information.

In addition, I found the following two interesting tools at the conference: GoGene, a web-based tool (<http://www.gopubmed.org/gogene/>), which searches genes and journal articles with gene ontology (GO) terms, and Artemis, a java application for genome annotation provided by the Sanger Center, which easily loads DNA sequences and entry files in Genbank, EMBL, and DDBJ; visualize genomes; and annotates information by interactively associating the data.



Berlin Wall



Brandenburg Gate

(Rie Tsuchiya)

I participated in the BioCuration Conference for the first time. It was a stimulating conference where I could share the excitement with curators and database developers from across the world. I could appreciate the efforts and concerns of each representative who maintains and provides high-quality curation data. In order to gain the contribution of annotations from end users, user-friendly tools have also been developed. Although a simpler tool makes it easier for the users to contribute, reducing the number of input items will decrease the data quality; hence, a balance between usability and the completeness of the data is crucial. In addition, a strategist reported that it was difficult to obtain the contribution from end users. It is ideal that researchers who write journal articles input the information into databases; however, the benefit of this contribution is not tangible for the researchers, which could be why the number of contributions is not increasing as expected.

In the future, it is important to establish a system that prompts the authors to provide information to databases, for example, by extensively posting the journal article of the contributors on the top page of the database.

(Shingo Sakaniwa)



Editor's Note Dr. Suzuki introduced us to the worldwide movements regarding MTAs. MTAs are a relatively new scheme especially for academic institutions. We could get a glimpse of how each institution develops the ideal MTA through trial and error and by exchanging ideas. The process for developing an ideal biocuration system would be similar. In order to establish a new system, patience, courage, and well-grounded flexible thoughts are probably crucial. (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.