

## No. 13

### Biological resources of thermophiles *Thermus thermophilus*, *Aeropyrum pernix* and *Sulfolobus tokodaii* in the Gene Engineering Division, RIKEN BioResource Center

Takehide Murata, Masato Okubo, Shotaro Kishikawa, Yukari Kujime, Chitose Kurihara,

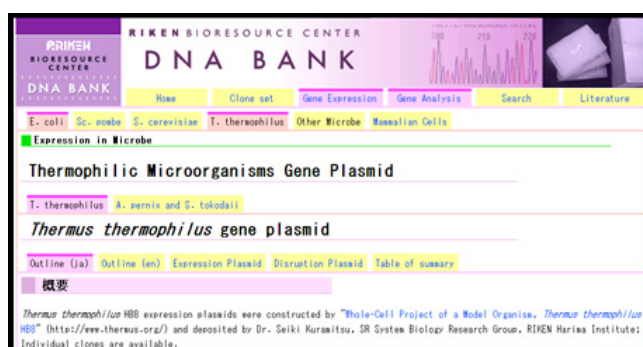
Koji Nakade, Megumi Hirose, Satoko Masuzaki, Yuichi Obata

(Gene Engineering Division, RIKEN BioResource Center)

e-mail: murata\_t@brc.riken.jp

Since its establishment in 2001, RIKEN BioResource Center (RIKEN BRC) has successfully undertaken activities related to the collection, preservation and supply of biological resources with the three basic principles for the management of this Center: Trust, sustainability and Leadership. Since 2002, the Division has been selected as a core facility of DNA resources in Japan engaging in the collection, preservation, quality control and distribution of genetic materials such as plasmid, clone sets of bacterial artificial chromosome (BAC), recombinant adenovirus, expression vector, and host bacterium by National BioResource Project (NBRP) administrated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan. RIKEN BRC has executed a license agreement with the Life Technologies Corporation (former Invitrogen IP Holdings, Inc.) to receive, maintain, replicate and distribute Gateway® Entry clones and Expression clones. Your deposition of genetic resources to RIKEN BRC Gene Engineering Division is most appreciated.

The RIKEN BRC is providing thermophile resources: expression clones, gene disruption clones, microbial strains and genomic DNAs.



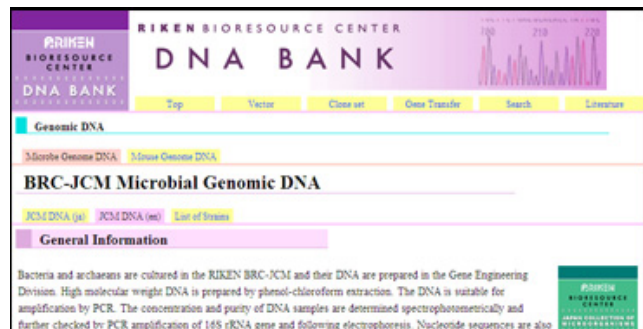
The expression clones and gene disruption clones was constructed and deposited by Dr. Seiki Kuramitsu and his colleague (RIKEN SPring-8 Center, Harima Inst./Osaka Univ.).

The expression clones were established to express recombinant proteins of thermophiles in

the *E. coli*. Expression clones of gene products of the *Thermus thermophilus* (about 1,800 clones) are available for distribution ([http://www.brc.riken.jp/lab/dna/en/thermus\\_en.html](http://www.brc.riken.jp/lab/dna/en/thermus_en.html)). The gene disruptant of *T. thermophilus* HB8 can be easily prepared by adding the gene disruption clones of *T. thermophilus* (about 970 clones) into the culture medium containing appropriate concentration of kanamycine ([http://www.brc.riken.jp/lab/dna/en/thermus\\_en.html](http://www.brc.riken.jp/lab/dna/en/thermus_en.html)). The target gene in this plasmid was replaced by the thermostable kanamycine resistant gene. Genes of *T. thermophilus* cloned into expression vector and disruption plasmid are searchable through the database maintained by the SR System Biology Research Group ([http://www.srg.harima.riken.jp/h\\_db/index.html](http://www.srg.harima.riken.jp/h_db/index.html)).

Genes of the *Aeropyrum pernix* (about 420 clones) and *Sulfolobus tokodaii* (about 650 clones) already cloned into expression vector are also available and can be browsed at a web site ([http://www.brc.riken.jp/lab/dna/en/thermus\\_5en.html](http://www.brc.riken.jp/lab/dna/en/thermus_5en.html)).

Microbial strains of these thermophiles type-strains (*T. thermophilus* HB8: JCM 10941<sup>T</sup>, *A. pernix* K1: JCM 9820<sup>T</sup>, *S. tokodaii* strain 7: JCM 10545<sup>T</sup>) are available from the Microbe Division



(JCM; <http://www.jcm.riken.jp/>). Genomic DNA of these strains are available from the Gene Engineering Division (<http://www.brc.riken.jp/lab/dna/en/JCMDNA2en.html>). We also provide genomic DNA from the other microbial strains.

We report, in this meeting, current situation of thermophile resources in the Gene Engineering Division.