

Brachypodium distachyon resequencing project

updated 8-22-2011

Thanks to the generous support of the Department of Energy Joint Genome Institute (JGI), a wealth of genomic sequence information for *Brachypodium distachyon* is becoming available. In 2010, the genome sequence of the reference diploid inbred line **Bd21** was published in *Nature*. Since then, JGI has resequenced the genomes of six additional diploid lines: **Bd21-3**, **Bd3-1**, **Bd30-1**, **Bd1-1**, **Koz-3**, and **BdTR12C**. We are analyzing this initial data set, and sequences for these lines will be available through www.brachybase.org soon.

Recently, JGI approved a proposal to resequence the genomes of 50 more *Brachypodium* lines <http://www.jgi.doe.gov/sequencing/cspseqplans2011.html>. The raw data and JGI's initial analysis will be released as soon as possible, with the understanding that the labs involved in the project reserve the right to the first publication of global studies, as well as certain targeted studies, based on their work.

In selecting lines for genome resequencing, the following criteria are being considered:

1. Each line must be a diploid of the species *Brachypodium distachyon*. (Unfortunately, the interesting topics of polyploidy in *B. distachyon* and perenniality in species such as *B. sylvaticum* are beyond the scope of this resequencing project. Note: After much discussion, an exception was made in order to include ABR113 and ABR114; see below.)
2. The line must be freely available to the research community. (Lines governed by Material Transfer Agreements or similar restrictions on use and distribution are not eligible.)
3. The lines, as a set, should maximize the genetic and phenotypic diversity represented.

So far, 48 of the proposed 50 additional lines have been chosen. These lines are:

In the initial set (up-dated August 22, 2011):

Bd2-3	BdTR2G	ABR2	Arn1
Bd18-1	BdTR3C	ABR3	Foz1
Adi-10	BdTR5I	ABR4	Mig3
Adi-12	BdTR9K	ABR5	Mon3
Gaz-8	BdTR10C	ABR6	Mur1
	BdTR11I	ABR7	Uni2
	BdTR13C	ABR8	
		ABR9	

Added as of March 3, 2011:

Adi-2	Kah-5	BdTR8I
Bis-1	Tek-4	BdTR11A
Kah-1	BdTR2B	BdTR11G

Added as of March 28, 2011:

5 lines from Georgia (courtesy of Ana Caicedo, UMass) and

2 lines from southern Spain (courtesy of John Doonan, John Innes Centre)

Added as of June 16, 2011:

Koz-1 and Tek-2

ABR114 ($2n = 20$) and ABR113 ($2n = 30$), added because of the continued high interest in polypoidy and related evolutionary questions

Added as of August 22, 2011:

BdTR11 (BdTR1i)

Bd21, the source of the reference genome, is also being resequenced as a quality control. The last few lines will be selected shortly, and we welcome nominations from the community. To nominate a line, please send an e-mail to Ludmila Tyler ludmilatyler@gmail.com or Sean Gordon sean.gordon@ars.usda.gov. Please include the name of the line, a description (especially if none has been previously published), and the rationale for including this line in the resequencing project. Because of the large amount of DNA required for resequencing, at least 200 seeds should be readily available for each nominated line.

This site will be updated periodically and announcements sent to the *Brachypodium* community via the *Brachypodium* mailing list at www.brachypodium.org.