

## Registration into the JIC *Pisum* Germplasm Collection of near isogenic lines at the rugosus *R* and *Rb* loci

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The development of near isogenic lines are important in allowing the effects of single genes or combinations of genes to be investigated while maintaining essentially a common genetic background. Three pairs of near isogenic lines for the rugosus loci *R* and *Rb* have been submitted to the JIC *Pisum* collection for long term maintenance and distribution. The accession numbers and allelic status of this material are presented in Table 1.

### JI 3316 and 3317

The BC1 pair of isolines for the rugosus (*R*) locus were the result of an initial cross between JI 430 (*rr*) and JI 145 (*RR*) followed by 6 backcrosses to JI 430 and a further 19 rounds of reselection from the heterozygote (1).

### JI 3318 and 3319

The BC2 pair of isolines for the rugosus (*Rb*) locus were the result of an initial cross between BC1/6 (*RRRbRb*) and JI 1156 (*RRrbrb*). Six rounds of backcrossing to the BC1/6 parent were performed followed by 10 rounds of reselection from the heterozygote (2).

### JI 3320 and 3321

The CMR pair of isogenic lines were selected from an early flowering heterozygous BC2 line after the 6 rounds of backcrossing. The node to flowering of JI 430 and the BC 1/6 recurrent parent was 16. The early flowering variant flowered some 3-4 nodes earlier than the recurrent parent BC 1/6 (flowers at node 16). The genetic basis of the early flowering of this material has not been explored but the trait is stable in this material. No subsequent reselection from heterozygotes was performed.

**Table 1. JI accession numbers of three pairs of near-isogenic lines**

JI Accession Number	Name
3316	BC1/19 <i>RR</i>
3317	BC1/19 <i>rr</i>
3318	BC2/10 <i>RbRb</i>
3319	BC2/10 <i>rbrb</i>
3320	CMR <i>RbRb</i> - early flowering
3321	CMR <i>rbrb</i> - early flowering

All accessions are available from the John Innes *Pisum* Collection (3).

1. Hedley, C.L. Smith, C.M. Ambrose, M.J, Cook, S. and Wang, T.L. 1986. *Annals Botany* 58: 371-379.
2. Hedley, C.L., Lloyd, J.R., Ambrose, M.J., and Wang, T.L. 1994. *Annals of Botany* 74: 365-371.
3. <http://www.jic.ac.uk/GERMPLAS/pisum/index.htm>.