

## Supplementary Data 2

### Reconstruction of the major part of the ancestral monomer

BLAST-detected relatedness between minisatellite monomers of CfciCl-61-40 satDNA family makes it possible to determine the major part of the ancient monomer. For this reconstruction for one RE cluster of *C. bryobifolium* (cluster 2) and for seven RE clusters *C. vulvaria* (clusters 28, 94, 112, 134, 144, 145 and 253) that show relatedness to *C. quinoa* and *B. corolliflora* minisatellites BLAST alignment was performed. DNA fragments with 100% matches, in combination, formed the most conservative fragment of the basic monomer.

### Results

Tandem Repeat Finder results for detection of basic monomer in *B. corolliflora* GenBank

ID: AJ288880.1

gatcaaattaaagtaaaaataaagtcaaacaaagctaattgaatcaaagtcaaagtcaaagtcaaacatagctaataatagatc

Indices	Period Size	Copy Number	Consensus Size	Percent Matches	Percent Indels	Score	A	C	G	T	Entropy (0-2)
<a href="#">2--78</a>	40	1.9	40	89	0	118	54	11	11	22	1.68

Indices: 2--78 Score: 118

Period size: 40 Copynumber: 1.9 Consensus size: 40

1 G

\*

2 ATCAAATTAAAGTAAAATAAAGTCAAACAAAGCTAATTGA

1 ATCAAATGAAAGTAAAATAAAGTCAAACAAAGCTAATTGA

\*

\*

\*

42 ATCAAATGAAAGTCAAATGAAGTCAAACATAGCTAAT

1 ATCAAATGAAAGTAAAATAAAGTCAAACAAAGCTAAT

79 AGATC

#### Statistics

Matches: 33, Mismatches: 4, Indels: 0

0.89 0.11 0.00

Matches are distributed among these distances:

40 33 1.00

ACGTcount: A:0.55, C:0.12, G:0.12, T:0.22

Consensus pattern (40 bp):

ATCAAATGAAAGTAAAATAAAGTCAAACAAAGCTAATTGA

**Alignment:**

*B. corolliflora*

Monomer 1

Monomer 2

+-----+-----+

GATCAAATTAAAGTAAAATAAAGTCAAACAAAGCTAATTGAATCAAATGAAAGTCAAATGAAGTCAAACATAGCTAATAGATC

*C. bryonifolium*

Cl-2: TCAAACAAAGCTAATTGAATCAAATGAAAGTCAAA  
AACAAAGCTAATTGAATCAAATGAAAGTCAAA  
ACAAAGCTAATTGAATCAAATGAAAGTCAAA  
ACAAAGCTAATTGAATCAAATGAAAGTCAAATG

*C. vulvaria*

Cl-28: AACAAAGCTAATTGAATCAAATGAAAGTCAAA  
AGCTAATTGAATCAAATGAAAGTCAAATG  
TCAAACAAAGCTAATTGAATCAAATGAAAGTCA

Cl-94: AACAAAGCTAATTGAATCAAATGAAAGTCAAATG  
AAAGCTAATTGAATCAAATGAAAGTCAAA  
AACAAAGCTAATTGAATCAAATGAAAGTCAAA

Cl-112: AACAAAGCTAATTGAATCAAATGAAAGTCAAATG  
AAAGCTAATTGAATCAAATGAAAGTCAAA  
AACAAAGCTAATTGAATCAAATGAAAGTCAAA

Cl-134: TCAAACAAAGCTAATTGAATCAAATGAAAGTCAAATG  
AACAAAGCTAATTGAATCAAATGAAAGTCAAATG  
TCAAACAAAGCTAATTGAATCAAATGAAAG  
CAAAGCTAATTGAATCAAATGAAAGTCAAA

Cl-144: TCAAACAAAGCTAATTGAATCAAATGAAAGTCAAA  
TCAAACAAAGCTAATTGAATCAAATGAAAGTCAAATG  
CAAACAAAGCTAATTGAATCAAATGAAAGTCAAATG

Cl-145: AACAAAGCTAATTGAATCAAATGAAAGTCAAATG  
CAAAGCTAATTGAATCAAATGAAAGTCAAA  
TCAAACAAAGCTAATTGAATCAAATGAAA

Cl-253: AACAAAGCTAATTGAATCAAATGAAAGTCAAA  
AACAAAGCTAATTGAATCAAATGAAAGTCAAATG  
AACAAAGCTAATTGAATCAAATGAAAGTCAA  
AAAGCTAATTGAATCAAATGAAAGTCAAATG  
AACAAAGCTAATTGAATCAAATGAAAGT

Ancestral monomer: TCAAACAAAGCTAATTGAATCAAATGAAAGTCAAATG