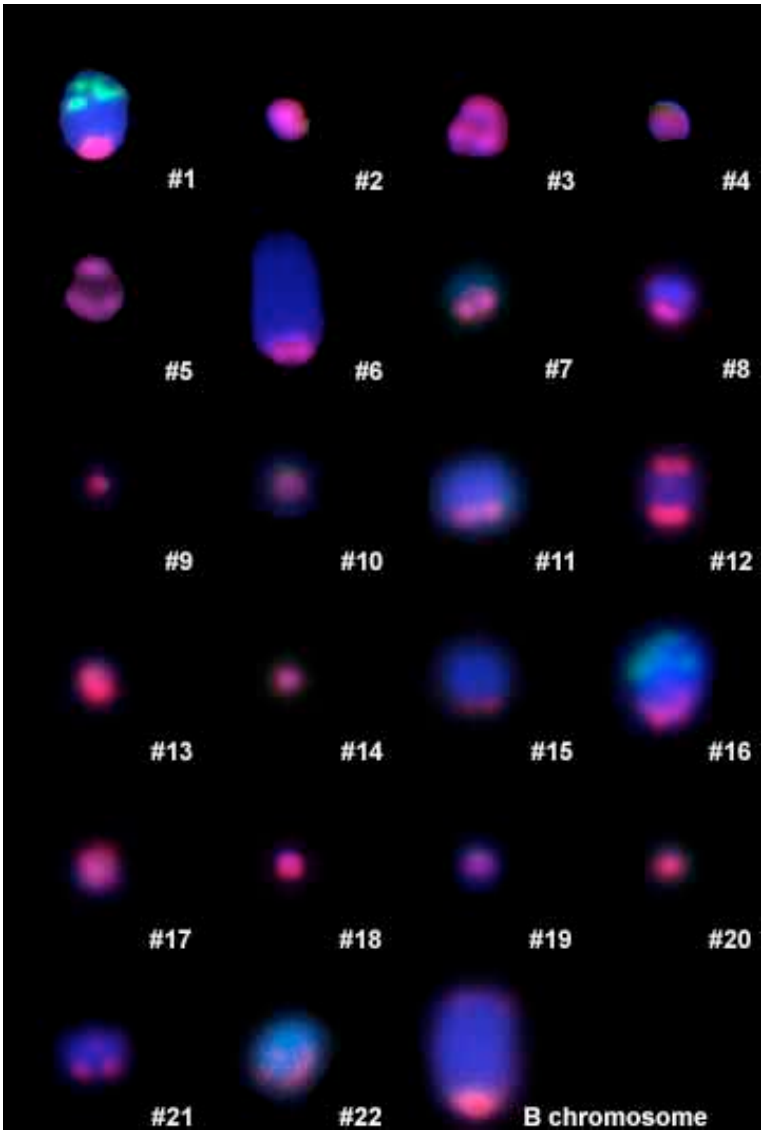
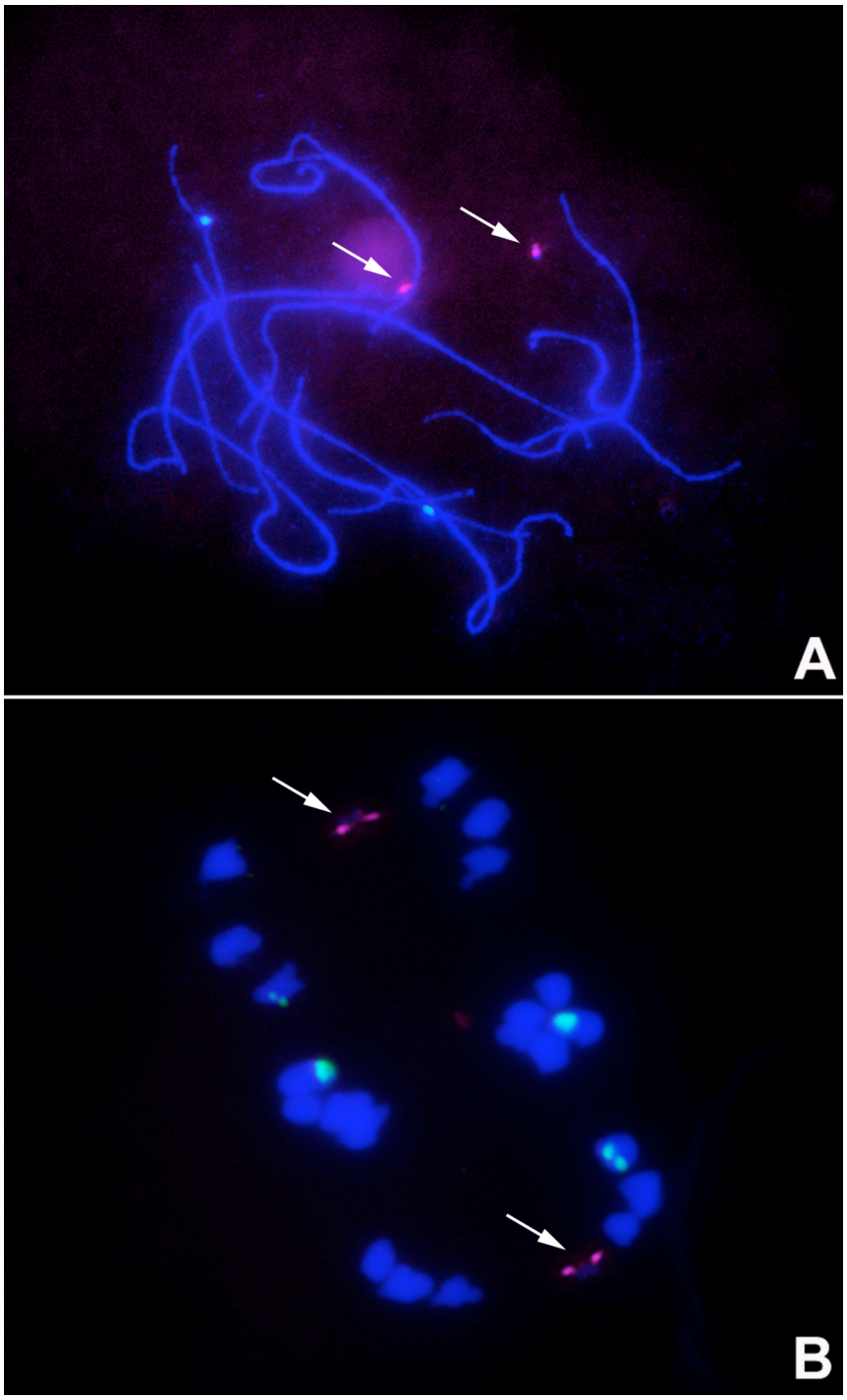
Supplemental Data. Han et al. (2007). Minichromosome analysis of chromosome pairing, disjunction and sister chromatid cohesion in maize.

Supplemental Figure 1. Different sizes of minichromosomes derived from TB-9Sb-Dp9. Green is the 180-bp knob; magenta is the ZmBs signals and blue is DAPI (counterstain).



Supplemental Figure 2. Cytological analysis of two copies of minichromosome #18. ZmBs is labeled in magenta; knob is green. (A) Pachynema. (B) Anaphase I. No pairing occurs in pachynema and sister chromatids separate in Anaphase I. Arrows indicate the minichromosomes.



Supplemental Table 1. Characterization of minichromosomes as revealed by FISH using ZmBs, Knob, CRM and CentC sequences as probes.

No	Size	ZmBs	Knob	CentC	CRM
1	large	+	+	+	+
2	small	+ +	+ +	+ +	+ +
3	small	+ +	+ +	+ +	+ +
4	small	+	+	+	+
5	small	+ +	+ -	+ +	+ +
6	large	+	+	+	+
7	small	+	+	+	+
8	small	+	+	+	+
9	tiny	+	-	+	+
10	small	+ +	+ +	+ +	+ +
11	medium	+	+	+	+
12	small	+ +	- -	+ -	+ -
13	small	+ +	+ +	+ +	+ +
14	tiny	+	+	+	+
15	medium	+	-	+	+
16	large	+	+	+	+
17	small	+ +	+ +	+ +	+ +
18	small	+	+	+	+
19	small	+	+	+	+
20	small	+	+	+	+
21	small	+	+	+	+
22	small	+	+	+	+

"+ +" : indicates that the minichromosome has two centromere regions.
"+" : indicates that the minichromsome has one centromere region.
"-" : indicates these sequences are not present on the chromosome.

Supplemental Table 2. Meiotic analysis of plants containing one minichromosome.

	Size	Pachytene pairing with chr. 9	Metaphase I	Anaphase I	Metaphase II	Anaphase II	B-repeat signals in cells of tetrad
1	large	no	univalent	normal	sisters associated	normal	1 or 0
2	small	no	univalent	sisters split	sister chromatid	random	1 or 0
3	small	no	univalent	sisters split	sister chromatid	random	1 or 0
4	small	no	univalent	normal	sisters associated	normal	1 or 0
5	small	no	univalent	sisters split	sister chromatid	random	1 or 0
6	large	no	univalent	normal	sisters associated	normal	1 or 0
7	small	no	univalent	sisters split	sister chromatid	random	1 or 0
8	small	no	univalent	sisters split	sister chromatid	random	1 or 0
9	tiny	no	univalent	sisters split	sister chromatid	random	1 or 0
10	small	no	univalent	sisters split	sister chromatid	random	1 or 0
11	medium	no	univalent	normal	sisters associated	normal	1 or 0
12	small	no	univalent	sisters split	sister chromatid	random	1 or 0
13	small	no	univalent	sisters split	sister chromatid	random	1 or 0
14	tiny	no	univalent	sisters split	sister chromatid	random	1 or 0
15	medium	no	univalent	normal	sisters associated	normal	1 or 0
16	large	no	univalent	normal	sisters associated	normal	1 or 0
17	small	no	univalent	sisters split	sister chromatid	random	1 or 0
18	small	no	univalent	sisters split	sister chromatid	random	1 or 0
19	small	no	univalent	normal	sisters associated	normal	1 or 0
20	small	no	univalent	sisters split	sister chromatid	random	1 or 0
21	small	no	univalent	sisters split	sister chromatid	random	1 or 0
22	small	no	univalent	normal	sisters associated	normal	1 or 0

Supplemental Table 3. Meiotic analysis of plants containing two minichromosomes.

No	Size	Pachytene pairing (%)	n	Diakinesis pairing (%)	n	Metaphase I	Anaphase I	Metaphase II	Anaphase II	B-repeat in cells of tetrad
1	large	100	50	100	34	bivalent	normal	sisters associated	normal	1
2	small	0	63	0	35	two univalents	sisters split	sister chromatid	random	1 or 2
3	small	0	157	0	81	two univalents	sisters split	sister chromatid	random	1 or 2
4	small	100	142	79	83	bivalent or two univalents	normal	sisters associated	normal	1
5	small	25	78	0	58	two univalents	sisters split	sister chromatid	random	1 or 2
6	large	100	33	100	52	bivalent	normal	sisters associated	normal	1
7	small	91	43	60	57	two univalents	segregation or sisters split	sisters associated or not	random	1 or 2
8	small	0	60	0	40	two univalents	sisters split	sister chromatid	random	1 or 2
9	tiny	100	70	100	45	bivalent	sisters split	sister chromatid	random	1 or 2
10	small	0	61	0	37	two univalents	sisters split	sister chromatid	random	1 or 2
11	medium	100	45	100	30	bivalent	normal	sisters associated	normal	1
12	small	0	42	0	33	two univalents	sisters split	sister chromatid	random	1 or 2
13	small	65	146	36	90	two univalents	sisters split	sister chromatid	random	1 or 2
14	small	26	82	0	70	two univalents	sisters split	sister chromatid	random	1 or 2
15	medium	100	33	100	30	bivalent	normal	sisters associated	normal	1
16	large	100	75	100	30	bivalent	normal	sister chromatid associated	normal	1
17	small	0	40	0	40	two univalents	sisters split	sister chromatid	random	1 or 2
18	small	0	55	0	31	two univalents	sisters split	sister chromatid	random	1 or 2
19	small	100	63	100	51	bivalent	normal	sisters associated	normal	1
20	small	0	72	0	43	two univalents	sisters split	sister chromatid	random	1 or 2
21	small	100	68	90	60	two univalents	sistes split	sister chromatid	random	1 or 2
22	small	100	50	100	33	bivalent or two univalents	normal	sisters associated	normal	1

Supplemental Table 4. Minichromosome transmission rates revealed by pollen FISH and selfing.

No	**size**	Transmission rate by pollen	Transmission by selfing
1	large	20%	37%
2	small	10%	24%
2	small	10%	40%
4	small	25%	37%
5	small	15%	33%
6	large	20%	45%
7	small	15%	50%
8	small	12%	33%
9	tiny	10%	30%
10	small	15%	30%
11	medium	30%	55%
12	small	8%	20%
13	small	15%	37%
14	tiny	22%	42%
15	medium	15%	40%
16	large	20%	26%
17	small	10%	20%
18	small	15%	22%
19	small	10%	28%
20	small	10%	55%
21	small	15%	57%
22	small	10%	30%

Transmission rate was detected by pollen FISH. Transmission by selfing was detected by FISH on root tip cells of the progeny.

All the tested plants contained one minichromosome.