

<i>BnSCR1300</i>GTTGGATTGAAGAT...GGCCTAAGTGTTTTTTAA.....ACCAGA	38
<i>BnSCR6</i>	...TTTTAGTGTGGATTGGAGAT...AGCCTAAGTGTATTTCAA.....AGGAGA	45
<i>BnSCR7</i>	TTTGTATTATGTAAGGTACCAATCAAGGTCTAAGTGTATTTTGAGTGTGACACGAGA	60
Consensus	gt g tt at g ctaagtgt ttt a a aga	
<i>BnSCR1300</i>	AGAGCTCCGCAGGAAAAGAAGAATTGGATGAGGAAGTTACACACACGAATAAGGTGTGAC	98
<i>BnSCR6</i>	AGAGCTCCGCAGGAAAAGAAGAATTAGGATGAGGAAGGTACACACACGAATAAGGTGTGAC	105
<i>BnSCR7</i>	GGAGCTATGCAGAAAAGAAGAACAGGGTGAAGAA.....ACACACGAATAAGGTGTGTC	115
Consensus	gagct gcag aaaagaagaa gg tgaggaa acacacgaataaggtgtg c	
<i>BnSCR1300</i>	CCGAATTGTTTACGTGTAAAAATAGGCAATTAAAGTCAAGATGTGAAGGAAAAAATATA	158
<i>BnSCR6</i>	CCGAATTGTTTACGTGTAAAAATAGGCAATTATGTCTAGATGCGAAGAAAA.....CA	159
<i>BnSCR7</i>AATGTTTACGTGTGAAATAGGCAATTAAAGTCAAGATCTGTGAAGAAAAAATATA	171
Consensus	a tgtttacgtgt aaataggcaatta gtgc agat g aaa a	
<i>BnSCR1300</i>	TATATATAGTAATACAAGCAATAACATTTCTATAAAAAAGCGAAAATCTTATATACTCATA	218
<i>BnSCR6</i>	TATATATAGTAATACAACAATAACATTTCTATAAAAAAGCGAAAATCTTATATACTCATA	219
<i>BnSCR7</i>	TATATATC.TAGAGTAAACAATAACATTTCTACAGAAA.GCGACGATCTTATATATTGAGA	229
Consensus	tatatat ta aa caataacattcta a aaa gcga atctttatata tca a	
<i>BnSCR1300</i>	AGTCATGAGATATGCTA <u>CTCTATATATACATTTTAAACAATATACACTACTTT</u> GTGTTT	278
<i>BnSCR6</i>	AGTCATGAGATATGCTACTTCTAT <u>ATATACATTTTAAACAATATACACTACTTT</u> GTGTTT	279
<i>BnSCR7</i>	AGTCATGAGATATGCTACTTCTATATTTTTTTTTTTTAAACAAGATACACTACTTTGTGTTT	289
Consensus	agtcattgagatattgctacttctatat t ttttaacaaa atacactactt tgttt	
<i>BnSCR1300</i>	CATATTTTTGATTTTGACATATGTTCAAGTAAACTATATCAATAACTTTCCCCCTTTTA	338
<i>BnSCR6</i>	CATATTTTTGATTTTGACATATGTTCAAGTAAACTATATCAATAACTTTCCCCCTTTTA	339
<i>BnSCR7</i>	CATATTTTTGACTTTTGACATCTGTTCAAGTAAACTATATCAATAACTTTTCCCCCTTTTA	349
Consensus	catatTTTTga tttgacat tgttcaaggtaaactatatcaataacttt cccct tta	
<i>BnSCR1300</i>	TGGACGCTTTAGGATTTTTCTTACCTAATTGCAATTCATAATTTTTTGTAAATTTAAAGC	398
<i>BnSCR6</i>	TGGACGATTTAGGATTTTTCTTACCTAATTGCAATTCATA.TTTTTGTAAATTTAAAGC	398
<i>BnSCR7</i>	TTGACGATTTAGGATTTTTCTTACCCAATTGCAATTCATAATTTTTT..TTTTTTAAAGC	407
Consensus	t gacg tttaggatTTTTcttacc aattgcaattcata tttt tt atttaaagc	
<i>BnSCR1300</i>	ACTAGATGTGGGAGCTTGGAATGCCCTGAAGGCATCGTCTATCCGAGTCTATCTCAGG	458
<i>BnSCR6</i>	ACTAGATGTGGGAGCTTGGAATGCCCTGAAGGCATCGCTATCCGAGTCTATCTCAGG	458
<i>BnSCR7</i>	ACTAGATGTGGGAGCTTAGGAAGTCC <u>TTGAAAGCATCCCAAAAT</u> TAATGATGTCATAGG	467
Consensus	actagatgtgggagct ggaa tgcctgaaggcatcg c a cga t t tc agg	
<i>BnSCR1300</i>	AAG <u>TTCCATTAATTCAGGACACACAGTGT</u> AAAAAACACTATGAAGTTGAGGGACAGAA	518
<i>BnSCR6</i>	AAG <u>TTCCATTAATTCAGGACACACAGTGT</u> GAGTGTAAAAAACACTATGAAGTTGAGGGACATAA	518
<i>BnSCR7</i>	AACATGCTTAAATACCAAGAGCAGAGACTGTCAAAAACACTTCG.....GACCGAA	518
Consensus	aa tgc t aat cca gagca aga tgt aaaaact g gac aa	
<i>BnSCR1300</i>	TGTTACTAATTGCCGTTGTGATACCTATAGCATGCAAAATCCTGCGAGGATTACTTGCTA	578
<i>BnSCR6</i>	TGTTACTAATTGCCGTTGTGATACCTATAGCATGCAAAATCCTGCGAGGATTACTTGCTA	578
<i>BnSCR7</i>	<u>TGTTACTAATTGCCCTTTGTATCCTTTTAGCACGCATAATCGTGTGAGGATTACTTGCTA</u>	578
Consensus	tgttactaattgcc ttgt at ctt tagca gca aatc tg gaggattacttgcta	
<i>BnSCR1300</i>	CTGTTGCAAAGTTAAATCA <u>TAAT</u> TTGATCAACGAAACATCCAGAGACGGTTAC	630
<i>BnSCR6</i>	CTGTTGCAAAGTTAAATCA <u>TAAT</u> TTGATCAACGAAACATCCAGAGACGGTCAC	630
<i>BnSCR7</i>	CTGTTGCAAAGTTAAATCA <u>TAAT</u> TTGAT <u>CAACGAAACATCCAGAT</u> ACGATTAC	630
Consensus	ctgttgcaaagttaaatcataattgatcaacgaaacatccaga acg t ac	

Figure S1. Collinear comparison of SCR genomic sequences of *BnS-1300*, *BnS-6* and *BnS-7*. The SCAR marker primers were underlined with black. The qPCR primers were highlighted in green, and the blue box indicated the mutant position. The red box represented the initiation codon and termination codon, and the gray box represented the intron.

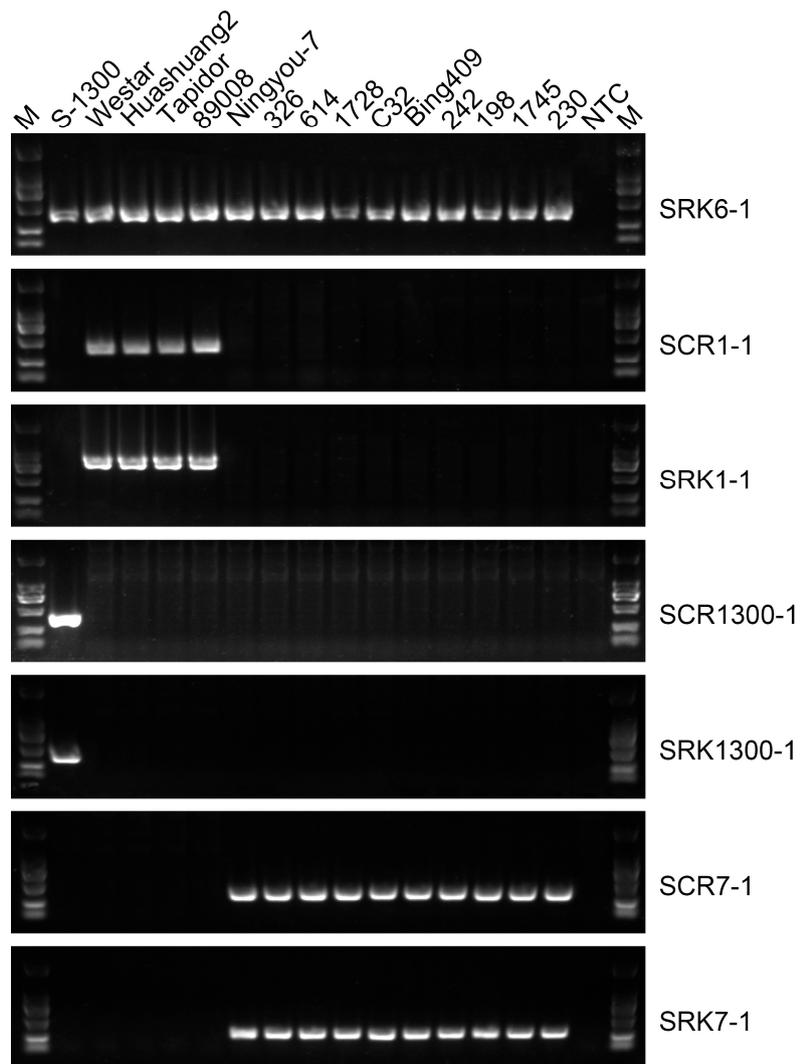


Figure S2. PCR fragments amplified from 'S-1300' and 14 *B. napus* SC lines using SCAR markers. NTC: no template control. M: DNA marker, from top to bottom, the size of band was 2,000, 1,000, 750, 500, 300, and 200 bp, respectively.

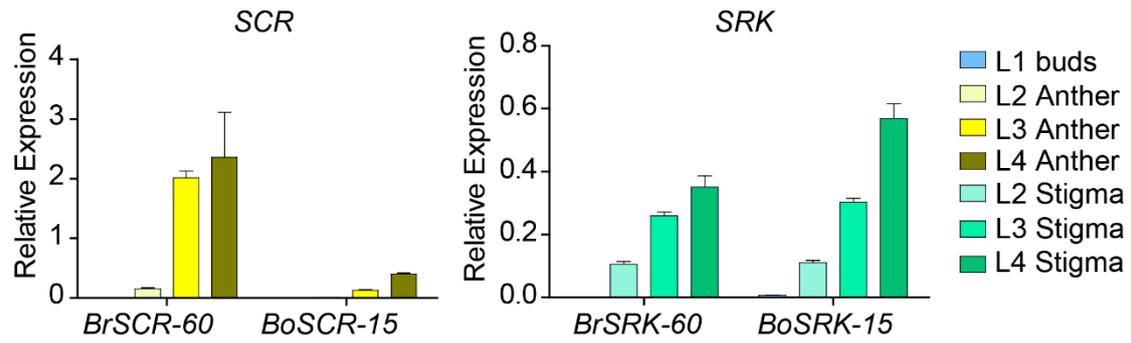


Figure S3. Expression analysis of *SCR* and *SRK* in the flower tissues of *B. rapa* and *B. oleracea*. The picture on the left shows the expression of *SCR* in the flowers of *B. rapa* and *B. oleracea* respectively. *BrSCR-60* is expressing in the anthers of different developmental stages of *B. rapa* 'BrHB'. The right picture shows the expression of *SRK* in the stigma of *B. rapa* and *B. oleracea* respectively. *BrSRK-60* is expressing in the stigma of different development stages of *B. rapa* 'BrHB'. *BoSRK-15* is expressing in the stigma of different developmental stages of *B. oleracea* 'BoRBR'.

BnSCR-6 Promoter

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+ CCAACCAAA CACTAAACTT CACATTAAAA ACTATAATTAT AATATTATA TATTATATAT TTATGTTTTT
- GGTGGGTGTT GTGATTTGAA GTGTAATTTT TGATATAATA TTATAATATT ATAATATATA AATACAAAAA

+ ATTTATTATT GATTTAATTG CTTATTTTAA TAATAAAATA AATGAATAGT TTTTAGTGAT ATGTATAGTA
- TAAATAATAA CTAATTAAC GAATAAAATT ATTATTTTAT TFACTTATCA AAAATCACTA TACATATCAT

+ TTTTAGTG TGGAATAATA TCACACCAA TTTGGTGTGA AACTATAATG TTGCATTAAT ATGGTATAAT
- AAAATCACAC CACTTATTAT AGTGTGGTTT AAACCACACT TTGATATTAC AACGTAATTT TACCATATTA

+ TTTTAGTGTT GGATTGAAGT ACGTTTTTGT GTCAAATTC TACTAAAATA GAATTATTTA TTAGTTACAA
- AAAATCACAA CCTAACTTCA TGCAAAAACA CAGTTTAAGT ATGATTTTAT CTTAATAAAT AATCAATGTT

+ AAAAATAAAA TTATTTATTT TAGTGTGGGA TTGGAGATAG CCTAAGTGTA TTTCAAAGGA GAAGAGCTCC
- TTTTTATTTT AATAAATAAA ATCACAACCT AACCTCTATC GGATTCACAT AAAGTTTCTT CTTCTCGAGG

+ GCAGGAAAAG AAGAATAGGA TGAGGAAGGT ACACACACGA ATAAGGTGTG ACCCGAATTG TTTACGTGTA
- CGTCCTTTTC TTCTTATCCT ACTCCTTCCA TGTGTGTGCT TATTCCACAC TGGGCTTAAC AATGCGCAT

+ AAATAGGCAA TTATGTGCTA GATGCGAAGA AAAACATATA TATAGTAATA CAAACAATAA CATCTATAAA
- TTTATCCGTT AATACACGAT CTACGCTTCT TTTTGTATAT ATATCATTAT GTTTGTTATT GTAAGATATT

+ AAAAGCGAAA ATCTTATATA CTCATAAG
- TTTTCGCTTT TAGAATATAT GAGTATTC

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BnSCR-1300 Promoter

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+ GTTTTAGTAC TAAAAAAATT GTTTTTCAAC CATAACATTA AACTTTACAT TAAAAACAAT TTTATCATAT
- CAAAATCATG ATTTTTTTAA CAAAAGTTG GTATTGTAAT TTGAAATGTA ATTTTTGTTA AAATAGTATA

+ TATATAGATT TAGTTTTTAT TTATTATTGA TTTAGTTGTT TATTTTAATA ATAAAAATAA TGAATAGTTT
- ATATATCTAA ATACAAAATA AATAATACT AAATCAACAA ATAAAATTAT TATTTTATTT ACTTATCAAA

+ TTTAGTGAAA TGAATAATAT TTTAGTGTGG TGAGTAGTAT TACTACTAAAT TTGGTGTGAA ACATAATGT
- AAATCACTTT ACTTATTATA AAATCACACC ACTCATCATA ATGTGATTTA AACCACACTT TGATATTACA

+ TACATTAAAA TGGTAAATC TTTATTGTTG GATTGGAAAA TATTGTTATG TCAAAATCAT ACTAAAATAG
- ATGTAATTTT ACCATATTAG AAATAACAAC CTAACCTTTT ATAACAATAC AGTTTTAGTA TGATTTTATC

+ AATTGTTTAT TTTAGTGTG GATTGAAGAT GGCCTAAGTG TTTTTTAAAC CAGAAGAGCT CCGCAGGAAA
- TTAACAAATA AAATCACAC CTAACCTTCTA CCGGATTCAC AAAAAATTG GTCTTCTCGA GCGTCCTTT

+ AGAAGAATTG GATGAGGAAG TTACACACAC GAATAAGGTG TGACCCGAAT TGTTTACGTG TAAAATAGGC
- TCTTCTAAC CTACTCCTTC AATGTGTGTG CTTATTCCAC ACTGGGCTTA ACAAATGCGAC ATTTTATCCG

+ AATTAAGTGC AAGATGTGAA GGAAAAAAA TATATATATA TAGTAATACA AGCAATAACA TTCTATAAAA
- TTAATTCACG TTCTACACTT CCTTTTTTTT ATATATATAT ATCATTATGT TCGTTATTGT AAGATATTTT

+ AAGCGAAAAT CTTATATACT CATAAGT
- TTCGCTTTTA GAATATATGA GTATTCA

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MYB
 TATA-box
 CAAT-box
 AT-rich

I-box
 G-box
 ARBE4

Figure S4. *cis*-elements prediction in the promoters of *BnSCR-6* and *BnSCR-1300*