

**Ultra-dense SNP genetic map construction and identification of *SiDt* gene controlling the determinate growth habit in *Sesamum indicum* L.**

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**Supplementary Fig. S1.** QDt1 location for determinate growth habit on LG8 of the ultra-dense SNP map.

**Supplementary Fig. S2.** Amplification and screening of *SiDt* 27-1 in F<sub>2</sub> population of the cross between Yuzhi DS899 and Ningbohei. M: DL 2,000 marker with the partial DNA bands of 250 bp and 100 bp; Lane 1-20: 92 bp amplicon of *SiDt* 27-1 in *dt1* genotype individuals of F<sub>2</sub> population. Lane 21, 22, 28, 29, 31, 35 and 37: 97 bp amplicon of *SiDt* 27-1 in *Dt* genotype individuals; Lane 23-27, 30, 32-34, 36, 38-40: amplicons of 92 bp and 97 bp in heterozygotic genotype (*Dt/dt1*).

**Supplementary Fig. S3.** Protein homology comparison of 3D structure between the *SiDt* and *Sidt1* proteins. The SNP site of S79N is located at the junction region between different domains. Homology modelling shows that the 3D structures of *SiDt* (left) and *Sidt1* (right) are same.

**Supplementary Fig. S4. Phylogenetic analysis of *SiDt* homologues in sesame.** Seven homologues of *Sis00046-1*, *Sis00076-1*, *Sis00121-1*, *Sis00157-1*, *Sis00157-2*, *Sis00154-1* and *Sis00141-1* are detected in the Yuzhi 11 genome (PRJNA315784) (version 2). Compared with *SiDt*, the protein identity of the 7 homologues ranges from 29%- 78%. The phylogenetic tree is constructed using MEGA 5.2 program according to the neighbor-joining (NJ) method. The line unit indicates the bootstrap value of 0.05.

**Supplementary Fig. S5. Diversity analysis of *SiDt* among the sesame germplasm resources.** Thirty core sesame germplasm are applied for the diversity analysis. A total of 18 SNP sites are detected in *SiDt* sequences among 5 accessions, i.e., M10, M11, M18, M19 and M29 as listed in Supplementary Table S10 online. Asterisks above the nucleotide sequences indicate the SNP sites of *SiDt* (*Sidt*) in Yuzhi 11, YuzhiDS899 and the 30 germplasm. The arrowhead indicates the SNP G397A site between Yuzhi 11 and Yuzhi DS899. The SNPs presented in more than 2 accessions are shaded in black. The

SNPs presented in one specific accession are shaded in grey. Bases in frame are exon sequences of

*SiDt*.

**Supplementary Table S1.** Genome sequencing information of two parents and 120 F<sub>2</sub> progeny in this study. Yuzhi DS899 as parent 1 is determinate (*dt1* type), JS012 as parent 2 is indeterminate (the wild type). A total of 120 F<sub>2</sub> progeny are randomly chosen from the F<sub>2</sub> population of the cross between Yuzhi DS899 and JS012.

**Supplementary Table S2.** Genotyping matrix information of bin and SNP markers in the F<sub>2</sub> progeny. The information of 3,101 bins and 30,494 SNP markers are listed for linkage mapping.

**Supplementary Table S3.** Bin marker information of the ultra-density SNP genetic linkage map in sesame. 3,041 bin markers containing 30,193 SNP markers are located in the SNP linkage map.

**Supplementary Table S4.** Characteristics of the three phenotypes of determinacy growth habit in sesame. The determinacy trait of the five accessions are investigated at Sanya (109°50' E and 18°25' N), Pingyu (113°62' E and 32°97' N) and Yuanyang (113°97' E and 35°05' N) experimental stations in 2013. The average height trait data listed in the table are investigated at Yuanyang experimental station in 2013. Photoperiodic treatments of SD (12h light/12h dark) and LD (15h light/9h dark) are performed in growing chamber under the day/night temperature of 28 °C/24 °C with 70±1% relative humidity.

**Supplementary Table S5.** Location of QDt1 associated with the determinate growth habit in sesame using winQTLCart and QTLNetwork.

**Supplementary Table S6.** Annotation of all the genes in the QDt1 interval of Yuzhi DS899. Twenty five putative genes are detected in the physical distance corresponding to the QDt1 interval using BLASTP program. DS899s00170.026 and DS899s00170.027 listed in the table are adjacent genes to the QDt1 interval. \*'F' refers to forward direction and 'R' refers to reverse direction. KEGG refers to Kyoto Encyclopedia of Genes and Genomes.

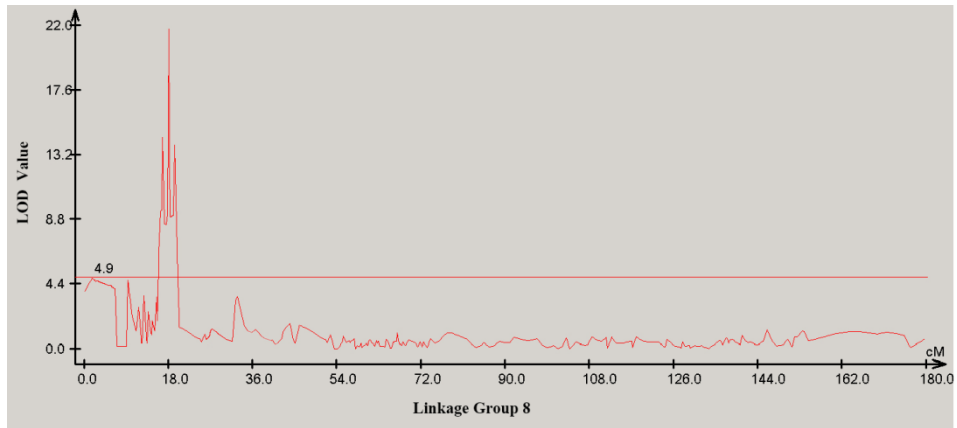
**Supplementary Table S7.** Genotypic variation and validation of the candidate SNP/InDel sites in sesame. Nine SNPs and 5 InDels are detected in the QDt1 interval. The *SiDt27-15* SNP and the *SiDt27-16* InDel listed in the table are detected at the adjacent flanking region of the QDt1 window. A total of 400 progeny of two F<sub>2</sub> populations of ‘Yuzhi DS899 × JS012’ and ‘Yuzhi DS899 × Ningbohei’ are used for screening target SNP/InDel marker.

**Supplementary Table S8.** Primer information of *SiDt* alleles for gene amplification and for real time PCR in sesame. *β-Tubulin* in sesame (*SiTUB*, JP631640) is used as the endogenous reference gene for qPCR.

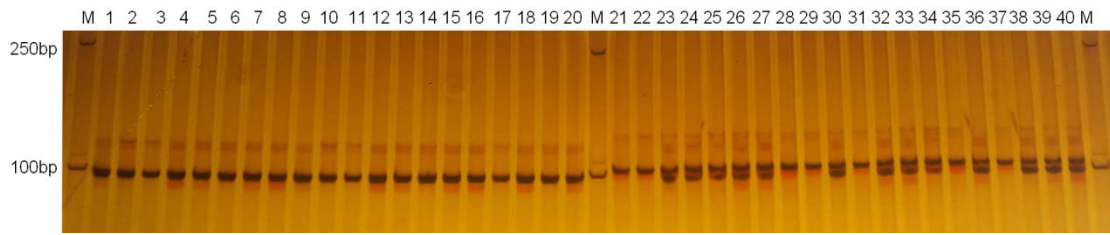
**Supplementary Table S9.** Global screening of *SiDt* homologues in the Yuzhi 11 genome. Seven homologues are detected using BLASTP, with the cutoff of E value  $\leq 1E-20$  and the coverage of  $\geq 50\%$ .

**Supplementary Table S10.** *SiDt* gene diversity analysis in sesame germplasm resources using PCR amplification. *SiDt* sequences in 30 sesame germplasm resources (M1-M30) are compared using DNAMAN software, in addition to the parents of the mapping population in the study.

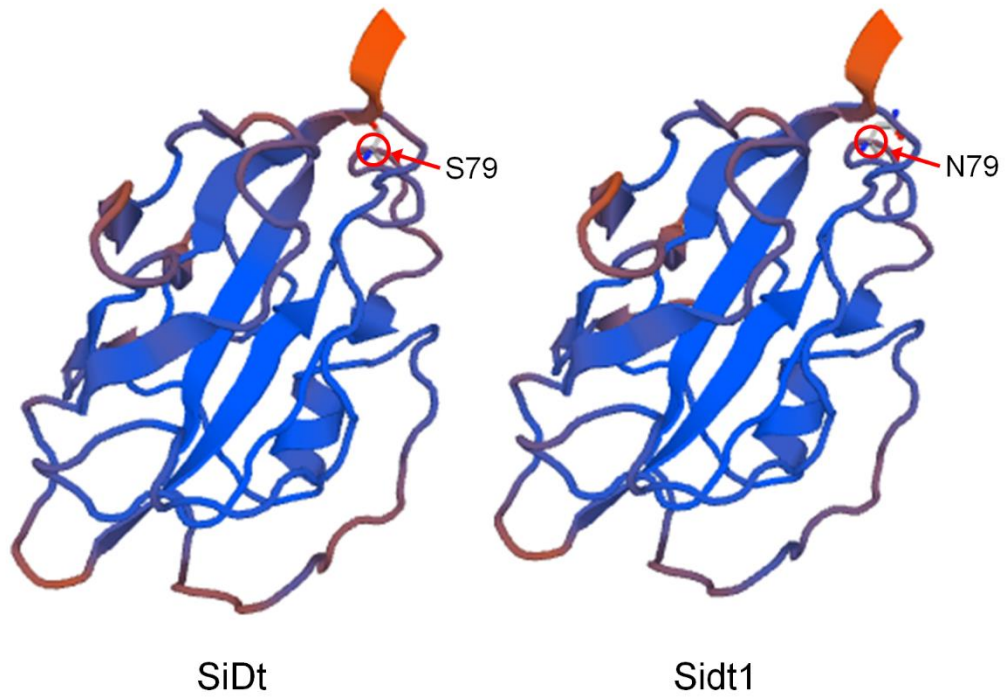
**Supplementary Table S11.** Diversity analysis of *SiDt* gene in sesame germplasm resources using public genome re-sequencing data. The public genome data of 715 accessions are collected from PRJEB8078 in NCBI dataset.



**Supplementary Fig. S1.** QDt1 location for determinate growth habit on LG8 of the ultra-dense SNP map. LOD refers to the Logistic Organ Dysfunction score. To determine the locus associated with the determinate trait locus, the LOD value is set at 4.9 using 1,000 permutations.

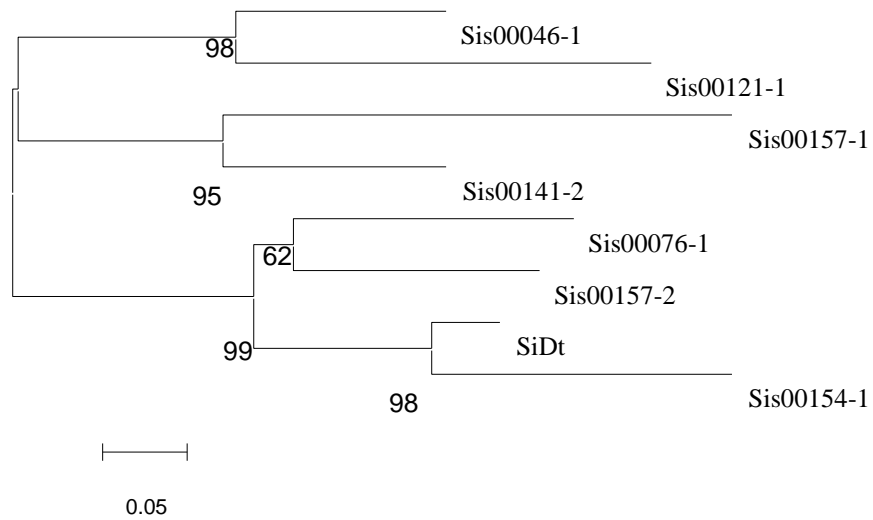


**Supplementary Fig. S2.** Amplification and screening of *SiDt 27-1* in  $F_2$  population of the cross between Yuzhi DS899 and Ningbohei. M: DL 2,000 marker with the partial DNA bands of 250 bp and 100 bp; Lane 1-20: 92 bp amplicon of *SiDt 27-1* in *dt1* genotype individuals of  $F_2$  population. Lane 21, 22, 28, 29, 31, 35 and 37: 97 bp amplicon of *SiDt 27-1* in *Dt* genotype individuals; Lane 23-27, 30, 32-34, 36, 38-40: amplicons of 92 bp and 97 bp in heterozygotic genotype (*Dt/dt1*).



**Supplementary Fig. S3.** Protein homology comparison of 3D structure between the SiDt and Sidt1 proteins. The SNP site of S79N (in red cycle) is located at the junction region between different domains. Homology modelling shows that the 3D structures of SiDt (left) and Sidt1 (right) are same.





**Supplementary Fig. S4. Phylogenetic analysis of *SiDt* homologues in sesame.** Seven homologues of *Sis00046-1*, *Sis00076-1*, *Sis00121-1*, *Sis00157-1*, *Sis00157-2*, *Sis00154-1* and *Sis00141-1* are detected in the Yuzhi 11 genome (PRJNA315784) (version 2). Compared with *SiDt*, the protein identity of the 7 homologues ranges from 29%- 78%. The phylogenetic tree is constructed using MEGA 5.2 program according to the neighbor-joining (NJ) method. The line unit indicates the bootstrap value of 0.05.

Supplementary Fig. S5-1

Yuzhi_11	ATGGCAAAAATGTCATCGGACCCCTTGTGATCGGTAGGTTGGTCGGAGACGTTGTCGATCATTTTCCTCCACCGTCAAAATGTCAGTCA	91
Yuzhi_Ds899	ATGGCAAAAATGTCATCGGACCCCTTGTGATCGGTAGGTTGGTCGGAGACGTTGTCGATCATTTTCCTCCACCGTCAAAATGTCAGTCA	91
M10	ATGGCAAAAATGTCATCGGACCCCTTGTGATCGGTAGGTTGGTCGGAGACGTTGTCGATCATTTTCCTCCACCGTCAAAATGTCAGTCA	91
M11	ATGGCAAAAATGTCATCGGACCCCTTGTGATCGGTAGGTTGGTCGGAGACGTTGTCGATCATTTTCCTCCACCGTCAAAATGTCAGTCA	91
M18	ATGGCAAAAATGTCATCGGACCCCTTGTGATCGGTAGGTTGGTCGGAGACGTTGTCGATCATTTTCCTCCACCGTCAAAATGTCAGTCA	91
M19	ATGGCAAAAATGTCATCGGACCCCTTGTGATCGGTAGGTTGGTCGGAGACGTTGTCGATCATTTTCCTCCACCGTCAAAATGTCAGTCA	91
M29	ATGGCAAAAATGTCATCGGACCCCTTGTGATCGGTAGGTTGGTCGGAGACGTTGTCGATCATTTTCCTCCACCGTCAAAATGTCAGTCA	91
Yuzhi_11	CTTACAACCTCCAACAAGCATGTCTACAATGGCCATGAGCTCTCCCTCCACAGTCACCTCTAAAACCTAGGGTTGAGTCCATGGTGGTGA	182
Yuzhi_Ds899	CTTACAACCTCCAACAAGCATGTCTACAATGGCCATGAGCTCTCCCTCCACAGTCACCTCTAAAACCTAGGGTTGAGTCCATGGTGGTGA	182
M10	CTTACAACCTCCAACAAGCATGTCTACAATGGCCATGAGCTCTCCCTCCACAGTCACCTCTAAAACCTAGGGTTGAGTCCATGGTGGTGA	182
M11	CTTACAACCTCCAACAAGCATGTCTACAATGGCCATGAGCTCTCCCTCCACAGTCACCTCTAAAACCTAGGGTTGAGTCCATGGTGGTGA	182
M18	CTTACAACCTCCAACAAGCATGTCTACAATGGCCATGAGCTCTCCCTCCACAGTCACCTCTAAAACCTAGGGTTGAGTCCATGGTGGTGA	182
M19	CTTACAACCTCCAACAAGCATGTCTACAATGGCCATGAGCTCTCCCTCCACAGTCACCTCTAAAACCTAGGGTTGAGTCCATGGTGGTGA	182
M29	CTTACAACCTCCAACAAGCATGTCTACAATGGCCATGAGCTCTCCCTCCACAGTCACCTCTAAAACCTAGGGTTGAGTCCATGGTGGTGA	182
Yuzhi_11	TATGAGATCATTTTTCACCCCTGTAACAATAATTTACTAATGATTTTTTACACACCCCACTACTTCTTTCTTAATTTCTGCTGATATT	273
Yuzhi_Ds899	TATGAGATCATTTTTCACCCCTGTAACAATAATTTACTAATGATTTTTTACACACCCCACTACTTCTTTCTTAATTTCTGCTGATATT	273
M10	TATGAGATCATTTTTCACCCCTGTAACAATAATTTACTAATGATTTTTTACACACCCCACTACTTCTTTCTTAATTTCTGCTGATATT	273
M11	TATGAGATCATTTTTCACCCCTGTAACAATAATTTACTAATGATTTTTTACACACCCCACTACTTCTTTCTTAATTTCTGCTGATATT	273
M18	TATGAGATCATTTTTCACCCCTGTAACAATAATTTACTAATGATTTTTTACACACCCCACTACTTCTTTCTTAATTTCTGCTGATATT	273
M19	TATGAGATCATTTTTCACCCCTGTAACAATAATTTACTAATGATTTTTTACACACCCCACTACTTCTTTCTTAATTTCTGCTGATATT	273
M29	TATGAGATCATTTTTCACCCCTGTAACAATAATTTACTAATGATTTTTTACACACCCCACTACTTCTTTCTTAATTTCTGCTGATATT	273
Yuzhi_11	TTTTTGGGAGTTTGTGTAATAATAAGTAGTACGTGCAAAATATTTTCGTGGGTTTTTCAGTAATAATTTCTCGTTTATATATATGTTTATGATCA	364
Yuzhi_Ds899	TTTTTGGGAGTTTGTGTAATAATAAGTAGTACGTGCAAAATATTTTCGTGGGTTTTTCAGTAATAATTTCTCGTTTATATATATGTTTATGATCA	364
M10	TTTTTGGGAGTTTGTGTAATAATAAGTAGTACGTGCAAAATATTTTCGTGGGTTTTTCAGTAATAATTTCTCGTTTATATATATGTTTATGATCA	364
M11	TTTTTGGGAGTTTGTGTAATAATAAGTAGTACGTGCAAAATATTTTCGTGGGTTTTTCAGTAATAATTTCTCGTTTATATATATGTTTATGATCA	364
M18	TTTTTGGGAGTTTGTGTAATAATAAGTAGTACGTGCAAAATATTTTCGTGGGTTTTTCAGTAATAATTTCTCGTTTATATATATGTTTATGATCA	364
M19	TTTTTGGGAGTTTGTGTAATAATAAGTAGTACGTGCAAAATATTTTCGTGGGTTTTTCAGTAATAATTTCTCGTTTATATATATGTTTATGATCA	364
M29	TTTTTGGGAGTTTGTGTAATAATAAGTAGTACGTGCAAAATATTTTCGTGGGTTTTTCAGTAATAATTTCTCGTTTATATATATGTTTATGATCA	364
Yuzhi_11	GATCATGACAGACCCCTGATGTTCTGGTCTAGTATCCATATCTGAGGGAGCACCTGCACCTGGATGCTTTTCATTTTAACTGCTTAAGA	455
Yuzhi_Ds899	GATCATGACAGACCCCTGATGTTCTGGTCTAGTATCCATATCTGAGGGAGCACCTGCACCTGGATGCTTTTCATTTTAACTGCTTAAGA	455
M10	GATCATGACAGACCCCTGATGTTCTGGTCTAGTATCCATATCTGAGGGAGCACCTGCACCTGGATGCTTTTCATTTTAACTGCTTAAGA	455
M11	GATCATGACAGACCCCTGATGTTCTGGTCTAGTATCCATATCTGAGGGAGCACCTGCACCTGGATGCTTTTCATTTTAACTGCTTAAGA	455
M18	GATCATGACAGACCCCTGATGTTCTGGTCTAGTATCCATATCTGAGGGAGCACCTGCACCTGGATGCTTTTCATTTTAACTGCTTAAGA	455
M19	GATCATGACAGACCCCTGATGTTCTGGTCTAGTATCCATATCTGAGGGAGCACCTGCACCTGGATGCTTTTCATTTTAACTGCTTAAGA	455
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Yuzhi_11	CCTGATTGATTTAATAAACTAGTATTTCTCAAAAACCTAGACTTTTGAATGATCAACACCCCTTTTCTCATCCAAGAGGGTAAATCAACCAC	546
Yuzhi_Ds899	CCTGATTGATTTAATAAACTAGTATTTCTCAAAAACCTAGACTTTTGAATGATCAACACCCCTTTTCTCATCCAAGAGGGTAAATCAACCAC	546
M10	CCTGATTGATTTAATAAACTAGTATTTCTCAAAAACCTAGACTTTTGAATGATCAACACCCCTTTTCTCATCCAAGAGGGTAAATCAACCAC	546
M11	CCTGATTGATTTAATAAACTAGTATTTCTCAAAAACCTAGACTTTTGAATGATCAACACCCCTTTTCTCATCCAAGAGGGTAAATCAACCAC	546
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M29	CCTGATTGATTTAATAAACTAGTATTTCTCAAAAACCTAGACTTTTGAATGATCAACACCCCTTTTCTCATCCAAGAGGGTAAATCAACCAC	546
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Yuzhi_Ds899	AACACACTTTTTAGGGTTTTTCTTTTGTAGTTTTTTTAAAAAATATGGTAGAAACCGTTATTGAAATAGTCTATTGGAGGGGTCGATCATA	637
M10	AACACACTTTTTAGGGTTTTTCTTTTGTAGTTTTTTTAAAAAATATGGTAGAAACCGTTATTGAAATAGTCTATTGGAGGGGTCGATCATA	637
M11	AACACACTTTTTAGGGTTTTTCTTTTGTAGTTTTTTTAAAAAATATGGTAGAAACCGTTATTGAAATAGTCTATTGGAGGGGTCGATCATA	637
M18	AACACACTTTTTAGGGTTTTTCTTTTGTAGTTTTTTTAAAAAATATGGTAGAAACCGTTATTGAAATAGTCTATTGGAGGGGTCGATCATA	637
M19	AACACACTTTTTAGGGTTTTTCTTTTGTAGTTTTTTTAAAAAATATGGTAGAAACCGTTATTGAAATAGTCTATTGGAGGGGTCGATCATA	637
M29	AACACACTTTTTAGGGTTTTTCTTTTGTAGTTTTTTTAAAAAATATGGTAGAAACCGTTATTGAAATAGTCTATTGGAGGGGTCGATCATA	637
Yuzhi_11	TATATATATATATATGATGTTGGTGGACTATAAAATGAAGAGAAATTAATTTAGAAAAAGGAGATTAAAACGTAATTTCTAAATGC	728
Yuzhi_Ds899	TATATATATATATATGATGTTGGTGGACTATAAAATGAAGAGAAATTAATTTAGAAAAAGGAGATTAAAACGTAATTTCTAAATGC	728
M10	TATATATATATATATGATGTTGGTGGACTATAAAATGAAGAGAAATTAATTTAGAAAAAGGAGATTAAAACGTAATTTCTAAATGC	728
M11	TATATATATATATATGATGTTGGTGGACTATAAAATGAAGAGAAATTAATTTAGAAAAAGGAGATTAAAACGTAATTTCTAAATGC	728
M18	TATATATATATATATGATGTTGGTGGACTATAAAATGAAGAGAAATTAATTTAGAAAAAGGAGATTAAAACGTAATTTCTAAATGC	728
M19	TATATATATATATATGATGTTGGTGGACTATAAAATGAAGAGAAATTAATTTAGAAAAAGGAGATTAAAACGTAATTTCTAAATGC	728
M29	TATATATATATATATGATGTTGGTGGACTATAAAATGAAGAGAAATTAATTTAGAAAAAGGAGATTAAAACGTAATTTCTAAATGC	728
Yuzhi_11	AAACAAATTTAAATACTATTGCATTACAATTTTAAAGATTTCTCTGCAAAAACCTAAGCTCCTAGGAAAGTTCGTTCACTTTAAGGTACAAG	819
Yuzhi_Ds899	AAACAAATTTAAATACTATTGCATTACAATTTTAAAGATTTCTCTGCAAAAACCTAAGCTCCTAGGAAAGTTCGTTCACTTTAAGGTACAAG	819
M10	AAACAAATTTAAATACTATTGCATTACAATTTTAAAGATTTCTCTGCAAAAACCTAAGCTCCTAGGAAAGTTCGTTCACTTTAAGGTACAAG	819
M11	AAACAAATTTAAATACTATTGCATTACAATTTTAAAGATTTCTCTGCAAAAACCTAAGCTCCTAGGAAAGTTCGTTCACTTTAAGGTACAAG	819
M18	AAACAAATTTAAATACTATTGCATTACAATTTTAAAGATTTCTCTGCAAAAACCTAAGCTCCTAGGAAAGTTCGTTCACTTTAAGGTACAAG	819
M19	AAACAAATTTAAATACTATTGCATTACAATTTTAAAGATTTCTCTGCAAAAACCTAAGCTCCTAGGAAAGTTCGTTCACTTTAAGGTACAAG	819
M29	AAACAAATTTAAATACTATTGCATTACAATTTTAAAGATTTCTCTGCAAAAACCTAAGCTCCTAGGAAAGTTCGTTCACTTTAAGGTACAAG	819
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Yuzhi_Ds899	ATGTATTATAAAATTTTTTGGTGATAATACATGAGATTCGTAAGTTTAGAGTGATGGTCTACACTACATGTGATGTAAGGTCACAAATC	910
M10	ATGTATTATAAAATTTTTTGGTGATAATACATGAGATTCGTAAGTTTAGAGTGATGGTCTACACTACATGTGATGTAAGGTCACAAATC	910
M11	ATGTATTATAAAATTTTTTGGTGATAATACATGAGATTCGTAAGTTTAGAGTGATGGTCTACACTACATGTGATGTAAGGTCACAAATC	910
M18	ATGTATTATAAAATTTTTTGGTGATAATACATGAGATTCGTAAGTTTAGAGTGATGGTCTACACTACATGTGATGTAAGGTCACAAATC	910
M19	ATGTATTATAAAATTTTTTGGTGATAATACATGAGATTCGTAAGTTTAGAGTGATGGTCTACACTACATGTGATGTAAGGTCACAAATC	910
M29	ATGTATTATAAAATTTTTTGGTGATAATACATGAGATTCGTAAGTTTAGAGTGATGGTCTACACTACATGTGATGTAAGGTCACAAATC	910

Supplementary Fig. S5-2

Yuzhi 11	CCGCATCATATGTGTCAGACGCACTACGAAAAACCCCTGTTTCATCCTATGAAAAAGTAGGTTTCATCGAGTCACTTCCAACATAAATCTC	1001
Yuzhi_Ds899	CCGCATCATATGTGTCAGACGCACTACGAAAAACCCCTGTTTCATCCTATGAAAAAGTAGGTTTCATCGAGTCACTTCCAACATAAATCTC	1001
M10	CCGCATCATATGTGTCAGACGCACTACGAAAAACCCCTGTTTCATCCTATGAAAAAGTAGGTTTCATCGAGTCACTTCCAACATAAATCTC	1001
M11	CCGCATCATATGTGTCAGACGCACTACGAAAAACCCCTGTTTCATCCTATGAAAAAGTAGGTTTCATCGAGTCACTTCCAACATAAATCTC	1001
M18	CCGCATCATATGTGTCAGACGCACTACGAAAAACCCCTGTTTCATCCTATGAAAAAGTAGGTTTCATCGAGTCACTTCCAACATAAATCTC	1001
M19	CCGCATCATATGTGTCAGACGCACTACGAAAAACCCCTGTTTCATCCTATGAAAAAGTAGGTTTCATCGAGTCACTTCCAACATAAATCTC	1001
M29	CCGCATCATATGTGTCAGACGCACTACGAAAAACCCCTGTTTCATCCTATGAAAAAGTAGGTTTCATCGAGTCACTTCCAACATAAATCTC	1001
Yuzhi 11	TGTCCAAAGTGATGATCCATGAAAAATGTTGTTGTCGTCGCACTATCCTTCATTTTCATTATCCCTATGGAAAAATACCCTTTAAAAATATA	1092
Yuzhi_Ds899	TGTCCAAAGTGATGATCCATGAAAAATGTTGTTGTCGTCGCACTATCCTTCATTTTCATTATCCCTATGGAAAAATACCCTTTAAAAATATA	1092
M10	TGTCCAAAGTGATGATCCATGAAAAATGTTGTTGTCGTCGCACTATCCTTCATTTTCATTATCCCTATGGAAAAATACCCTTTAAAAATATA	1092
M11	TGTCCAAAGTGATGATCCATGAAAAATGTTGTTGTCGTCGCACTATCCTTCATTTTCATTATCCCTATGGAAAAATACCCTTTAAAAATATA	1092
M18	TGTCCAAAGTGATGATCCATGAAAAATGTTGTTGTCGTCGCACTATCCTTCATTTTCATTATCCCTATGGAAAAATACCCTTTAAAAATATA	1092
M19	TGTCCAAAGTGATGATCCATGAAAAATGTTGTTGTCGTCGCACTATCCTTCATTTTCATTATCCCTATGGAAAAATACCCTTTAAAAATATA	1092
M29	TGTCCAAAGTGATGATCCATGAAAAATGTTGTTGTCGTCGCACTATCCTTCATTTTCATTATCCCTATGGAAAAATACCCTTTAAAAATATA	1092
Yuzhi 11	CTCTTGCCCTGGTCCACGTCCTTCTATTCAACATCGTATTATCTGATTGTTGAATAGTGATAATTTGACTGTCGAAATACATAAAGCACA	1183
Yuzhi_Ds899	CTCTTGCCCTGGTCCACGTCCTTCTATTCAACATCGTATTATCTGATTGTTGAATAGTGATAATTTGACTGTCGAAATACATAAAGCACA	1183
M10	CTCTTGCCCTGGTCCACGTCCTTCTATTCAACATCGTATTATCTGATTGTTGAATAGTGATAATTTGACTGTCGAAATACATAAAGCACA	1183
M11	CTCTTGCCCTGGTCCACGTCCTTCTATTCAACATCGTATTATCTGATTGTTGAATAGTGATAATTTGACTGTCGAAATACATAAAGCACA	1183
M18	CTCTTGCCCTGGTCCACGTCCTTCTATTCAACATCGTATTATCTGATTGTTGAATAGTGATAATTTGACTGTCGAAATACATAAAGCACA	1183
M19	CTCTTGCCCTGGTCCACGTCCTTCTATTCAACATCGTATTATCTGATTGTTGAATAGTGATAATTTGACTGTCGAAATACATAAAGCACA	1183
M29	CTCTTGCCCTGGTCCACGTCCTTCTATTCAACATCGTATTATCTGATTGTTGAATAGTGATAATTTGACTGTCGAAATACATAAAGCACA	1183
Yuzhi 11	ATATTTAAAATAGAATAACTAAATCTGTATCGGATTCCTAATGTTTACCCTAGTTAAAAAAATATTGCTTATATATGTGGCTTGACAAATG	1274
Yuzhi_Ds899	ATATTTAAAATAGAATAACTAAATCTGTATCGGATTCCTAATGTTTACCCTAGTTAAAAAAATATTGCTTATATATGTGGCTTGACAAATG	1274
M10	ATATTTAAAATAGAATAACTAAATCTGTATCGGATTCCTAATGTTTACCCTAGTTAAAAAAATATTGCTTATATATGTGGCTTGACAAATG	1274
M11	ATATTTAAAATAGAATAACTAAATCTGTATCGGATTCCTAATGTTTACCCTAGTTAAAAAAATATTGCTTATATATGTGGCTTGACAAATG	1274
M18	ATATTTAAAATAGAATAACTAAATCTGTATCGGATTCCTAATGTTTACCCTAGTTAAAAAAATATTGCTTATATATGTGGCTTGACAAATG	1274
M19	ATATTTAAAATAGAATAACTAAATCTGTATCGGATTCCTAATGTTTACCCTAGTTAAAAAAATATTGCTTATATATGTGGCTTGACAAATG	1274
M29	ATATTTAAAATAGAATAACTAAATCTGTATCGGATTCCTAATGTTTACCCTAGTTAAAAAAATATTGCTTATATATGTGGCTTGACAAATG	1274
Yuzhi 11	TACTTTAATAATTAATTAATCACATAAACATTTGACAAACAAATGAGCCCTCTTTCAAAAACACCTGACAAAGTGCAGTTAACTAATGAATTACG	1365
Yuzhi_Ds899	TACTTTAATAATTAATTAATCACATAAACATTTGACAAACAAATGAGCCCTCTTTCAAAAACACCTGACAAAGTGCAGTTAACTAATGAATTACG	1365
M10	TACTTTAATAATTAATTAATCACATAAACATTTGACAAACAAATGAGCCCTCTTTCAAAAACACCTGACAAAGTGCAGTTAACTAATGAATTACG	1365
M11	TACTTTAATAATTAATTAATCACATAAACATTTGACAAACAAATGAGCCCTCTTTCAAAAACACCTGACAAAGTGCAGTTAACTAATGAATTACG	1365
M18	TACTTTAATAATTAATTAATCACATAAACATTTGACAAACAAATGAGCCCTCTTTCAAAAACACCTGACAAAGTGCAGTTAACTAATGAATTACG	1365
M19	TACTTTAATAATTAATTAATCACATAAACATTTGACAAACAAATGAGCCCTCTTTCAAAAACACCTGACAAAGTGCAGTTAACTAATGAATTACG	1365
M29	TACTTTAATAATTAATTAATCACATAAACATTTGACAAACAAATGAGCCCTCTTTCAAAAACACCTGACAAAGTGCAGTTAACTAATGAATTACG	1365
Yuzhi 11	TTGTTTTTTATTTTACATATATGTACTAAATCTACTGACAAACATAAGTTGATTTGACGAACTCACAGGATAGTCACAGATATCCCTGGCA	1456
Yuzhi_Ds899	TTGTTTTTTATTTTACATATATGTACTAAATCTACTGACAAACATAAGTTGATTTGACGAACTCACAGGATAGTCACAGATATCCCTGGCA	1456
M10	TTGTTTTTTATTTTACATATATGTACTAAATCTACTGACAAACATAAGTTGATTTGACGAACTCACAGGATAGTCACAGATATCCCTGGCA	1456
M11	TTGTTTTTTATTTTACATATATGTACTAAATCTACTGACAAACATAAGTTGATTTGACGAACTCACAGGATAGTCACAGATATCCCTGGCA	1456
M18	TTGTTTTTTATTTTACATATATGTACTAAATCTACTGACAAACATAAGTTGATTTGACGAACTCACAGGATAGTCACAGATATCCCTGGCA	1456
M19	TTGTTTTTTATTTTACATATATGTACTAAATCTACTGACAAACATAAGTTGATTTGACGAACTCACAGGATAGTCACAGATATCCCTGGCA	1456
M29	TTGTTTTTTATTTTACATATATGTACTAAATCTACTGACAAACATAAGTTGATTTGACGAACTCACAGGATAGTCACAGATATCCCTGGCA	1456
Yuzhi 11	CCACAGATTCCTCATTCGGTATGAATAAAGATCATATATACCTCAATTAATTAATATCTTATTTAAATCTTTGTTTTACATTAATTAAT	1547
Yuzhi_Ds899	CCACAGATTCCTCATTCGGTATGAATAAAGATCATATATACCTCAATTAATTAATATCTTATTTAAATCTTTGTTTTACATTAATTAAT	1547
M10	CCACAGATTCCTCATTCGGTATGAATAAAGATCATATATACCTCAATTAATTAATATCTTATTTAAATCTTTGTTTTACATTAATTAAT	1547
M11	CCACAGATTCCTCATTCGGTATGAATAAAGATCATATATACCTCAATTAATTAATATCTTATTTAAATCTTTGTTTTACATTAATTAAT	1547
M18	CCACAGATTCCTCATTCGGTATGAATAAAGATCATATATACCTCAATTAATTAATATCTTATTTAAATCTTTGTTTTACATTAATTAAT	1547
M19	CCACAGATTCCTCATTCGGTATGAATAAAGATCATATATACCTCAATTAATTAATATCTTATTTAAATCTTTGTTTTACATTAATTAAT	1547
M29	CCACAGATTCCTCATTCGGTATGAATAAAGATCATATATACCTCAATTAATTAATATCTTATTTAAATCTTTGTTTTACATTAATTAAT	1547
Yuzhi 11	AATTTCTTGTTTACATGTAATTAATCAATGTACTGACGAGAAAAGAGTAGTGAGCTACGAGATGCCGAGGCCAAACATAGGAATACACAGG	1638
Yuzhi_Ds899	AATTTCTTGTTTACATGTAATTAATCAATGTACTGACGAGAAAAGAGTAGTGAGCTACGAGATGCCGAGGCCAAACATAGGAATACACAGG	1638
M10	AATTTCTTGTTTACATGTAATTAATCAATGTACTGACGAGAAAAGAGTAGTGAGCTACGAGATGCCGAGGCCAAACATAGGAATACACAGG	1638
M11	AATTTCTTGTTTACATGTAATTAATCAATGTACTGACGAGAAAAGAGTAGTGAGCTACGAGATGCCGAGGCCAAACATAGGAATACACAGG	1638
M18	AATTTCTTGTTTACATGTAATTAATCAATGTACTGACGAGAAAAGAGTAGTGAGCTACGAGATGCCGAGGCCAAACATAGGAATACACAGG	1638
M19	AATTTCTTGTTTACATGTAATTAATCAATGTACTGACGAGAAAAGAGTAGTGAGCTACGAGATGCCGAGGCCAAACATAGGAATACACAGG	1638
M29	AATTTCTTGTTTACATGTAATTAATCAATGTACTGACGAGAAAAGAGTAGTGAGCTACGAGATGCCGAGGCCAAACATAGGAATACACAGG	1638
Yuzhi 11	TTTGCATTTGTGCTGTTCAAGCAGAAGAAGAGACAATTAGGATGCGTGAGGGCACCAGCTTTAGGGATGGATTCAATACCAGGAATTTTG	1729
Yuzhi_Ds899	TTTGCATTTGTGCTGTTCAAGCAGAAGAAGAGACAATTAGGATGCGTGAGGGCACCAGCTTTAGGGATGGATTCAATACCAGGAATTTTG	1729
M10	TTTGCATTTGTGCTGTTCAAGCAGAAGAAGAGACAATTAGGATGCGTGAGGGCACCAGCTTTAGGGATGGATTCAATACCAGGAATTTTG	1729
M11	TTTGCATTTGTGCTGTTCAAGCAGAAGAAGAGACAATTAGGATGCGTGAGGGCACCAGCTTTAGGGATGGATTCAATACCAGGAATTTTG	1729
M18	TTTGCATTTGTGCTGTTCAAGCAGAAGAAGAGACAATTAGGATGCGTGAGGGCACCAGCTTTAGGGATGGATTCAATACCAGGAATTTTG	1729
M19	TTTGCATTTGTGCTGTTCAAGCAGAAGAAGAGACAATTAGGATGCGTGAGGGCACCAGCTTTAGGGATGGATTCAATACCAGGAATTTTG	1729
M29	TTTGCATTTGTGCTGTTCAAGCAGAAGAAGAGACAATTAGGATGCGTGAGGGCACCAGCTTTAGGGATGGATTCAATACCAGGAATTTTG	1729
Yuzhi 11	CCCAGGAAAATGAGTTAGGTCCTCGTTGCTGCTGTTTACTTCAATTGCCAGAGAGAGACTGCTGTAGAAGGCGCTAG	1809
Yuzhi_Ds899	CCCAGGAAAATGAGTTAGGTCCTCGTTGCTGCTGTTTACTTCAATTGCCAGAGAGAGACTGCTGTAGAAGGCGCTAG	1809
M10	CCCAGGAAAATGAGTTAGGTCCTCGTTGCTGCTGTTTACTTCAATTGCCAGAGAGAGACTGCTGTAGAAGGCGCTAG	1809
M11	CCCAGGAAAATGAGTTAGGTCCTCGTTGCTGCTGTTTACTTCAATTGCCAGAGAGAGACTGCTGTAGAAGGCGCTAG	1809
M18	CCCAGGAAAATGAGTTAGGTCCTCGTTGCTGCTGTTTACTTCAATTGCCAGAGAGAGACTGCTGTAGAAGGCGCTAG	1809
M19	CCCAGGAAAATGAGTTAGGTCCTCGTTGCTGCTGTTTACTTCAATTGCCAGAGAGAGACTGCTGTAGAAGGCGCTAG	1809
M29	CCCAGGAAAATGAGTTAGGTCCTCGTTGCTGCTGTTTACTTCAATTGCCAGAGAGAGACTGCTGTAGAAGGCGCTAG	1809

Supplementary Fig. S5. Diversity analysis of *SiDt* among the sesame germplasm resources. Thirty

core sesame germplasm are applied for the diversity analysis. A total of 18 SNP sites are detected in *SiDt* sequences among 5 accessions, i.e., M10, M11, M18, M19 and M29 as listed in Supplementary Table S10 online. Asterisks above the nucleotide sequences indicate the SNP sites of *SiDt* (*Sidt*) in Yuzhi 11, YuzhiDS899 and the 30 germplasm. The arrowhead indicates the SNP G397A site between Yuzhi 11 and Yuzhi DS899. The SNPs presented in more than 2 accessions are shaded in black. The SNPs presented in one specific accession are shaded in grey. Bases in frame are exon sequences of *SiDt*.