**Supplementary Table 1. Details of primers used in this study**

|  |  |  |  |
| --- | --- | --- | --- |
| **Source Species** | **Primer code** | **Forward (5’ to 3’)** | **Reverse (5’ to 3’)** |
| *Luffa cylindrica* | SGJ643 | GCCCCAAATCAGATCCTTTT | ATTCCCCCATCACTTTTTCC |
| SGJ644 | GAGGAATGGAATGAAGGCAA | CTTCAAGATGTTTGGGCACC |
| SGJ646 | AATCGGGTTCTCACACGAAC | GAGGAATCCACCAAGAACCA |
| SGJ648 | AGGGAAAGGGCTCAGAGAAG | GAAAGAGTTGAATTGGGAATCA |
| SGJ652 | ACGGACCTCCTTCCATTTCT | TCCATGGGTGAGGGATTTTA |
| SGJ654 | GCTGCATGTGTGAAATCTTGA | GGGCAATGTCTAGAGCAGGA |
| SGJ659 | CTGCAAACTTCTGCCCTTTC | CTGGATACTCAGGAGGCGAC |
| SGJ666 | TGAGAGATCCCATTCCACAA | TGGAACAGTCTCTCTCTCACACA |
| SGJ671 | GAGGAGCTGAAGGGGTTTTC | ACCCTCGAAGCTCAACAACA |
| SGJ677 | GGGGTCAATTGAAGGGAAAT | AGAGAGAAGGAAAGGGGCAG |
| SGJ684 | CGCAGAAGGAACCAGAGAAC | TCCTTCTCCCTCTCTCTCTCC |
| SGJ689 | TGGAAGAGAGTGGGAAATGG | TCGAGGTGGAGAGAAGATCG |
| SGJ691 | GGAGACAACAAAAATAGAGAGAGAGA | CAAGTGGAAGAAAACCCTCG |
| SGJ714 | GTTCAATTTTCCCACATCGC | CCTGAGAATGGACAGCAACA |
| SGJ718 | TCATCAGTGGCAATATCGGA | CATGCAGCCGTACTTGAAGA |
| SGJ722 | TCCACACCAACAAAGGTGAA | ATGGCGTTGGGTATGAATGT |
| SGJ731 | GGTGTTGACCCAACGAACTC | TGGCTCGGCTCTTACTCTTC |
| SGJ732 | TTCGCCTTTAACGTACCACC | ACTGGAGAAGAAGCACGGAA |
| SGJ739 | TCATTTCATTTGTTGCTGCC | CGATTGACGGGTTCTGTTCT |
| SGJ740 | TCCCAATTCGGAAAATCAGT | ACCGATCTGAATCATCCTCG |
| SGJ745 | TCTCTGAACAAACCCCAACC | GCCGTTTTGCTGTTGATTTT |
| SGJ748 | CGATCCTCTGCATGAACTGA | GAGGAGCTGAAACAACAGGC |
| SGJ750 | GATGGCGATAGGGAATCAAA | CCATTGCCACAGAGTCTCAC |
| SGJ753 | GGATCGATTCCCTTCACGTA | CCTTGCCCTTCTGTTTTGAA |
| SGJ756 | GGGCCATTGAAGTTGGAGTA | AACGGCATTAAAATTCCCAA |
| SGJ759 | TCCGATAAAGTGATCCAGGG | CTCCTTCAATCCCCAATCAA |
| SGJ760 | TCATCGCTCTCCCTTTCTCT | CGCTTCTCTCGCTAGTCTTCA |
| SGJ764 | CGTCCTACAAATTCCCGAAA | TTTCACTCTTGGCCCGATAC |
| SGJ774 | CTGGAAAAAGGGCAAAAGAA | TGGCCCATGGTTCATCTTAT |
| SGJ777 | CACTGCCAACCAGATTCAGA | TCATCTGGGTCCTCCTGTTC |
| SGJ781 | CGCCAATGAAGCTCATGTAA | GATCCGATCGACTACCCAGA |
| SGJ784 | GGACGAATTTTGCTTTGCAT | TCCTCCCCTGCTTTACCTCT |
| SGJ789 | TCACAGTTGAAACATCCCCA | GGCTGAGAGGCAGAGAGAGA |
| SGJ790 | GGAAGGGCATTCCATCTTTT | TCTGCATCACACCGTAGAGG |
| SGJ791 | AACGAGCGAAATTCCATTTG | ACGCAGTTTGTTGACTGCAA |
| SGJ792 | TTGGTTCAGCTAAGGGCCTA | GGCTCCACTGACTAGTTGCC |
| SGJ795 | AAAGCGCCTGAATCAATCAC | CATGCCCTGGAACTGATCTT |
| SGJ800 | TGCAAAATCAGATGATTCCTAAA | TCGAGATGTGTTCTTTTGCG |
| SGJ802 | AAACAAGTGACCGATCCCAG | GGAAGGCGACAAAATCAAAA |
| SGJ803 | CAATTGATGAACAAGCCAGG | CTGGCACTAGCTGCACAAAA |
| SGJ805 | AAAGAAGAGGCCAACAGGGT | GCTCTGCCTAACTAACCCCC |
| SGJ806 | TTCCCCAAAATCAAACGAAC | CGAAGGCAAAAAGGTTGAAG |
| SGJ808 | TTCCCTAATTCTGGCTGTGG | TATCGCTGCCAGGCTAATCT |
| SGJ809 | AACAGAAGCAAGTTCGCACA | TGCCATTTCTCCATTTCCAT |
| SGJ811 | TTCAAGCAGCTGCAAAAGAG | GAGTTGGTGGACCTTGGAAA |
| SGJ813 | CCGGAAATCAAAAAGGTTCA | TCTTCAGCGCAGATTCAAGA |
| SGJ819 | GCCCATTTCCCCTTTTATGT | TGATTAACCAAACAGCAGAGGA |
| SGJ823 | CAGATCCGCAAAAATCCTGT | TCCTTCTGTTTGTGGGTTCC |
| SGJ828 | GCAATGTCAGGTTCGGGTAT | CTGCATCTGGATCCCTTGTT |
| SGJ830 | AAGGGAAGGGCTGTTTCTGT | AATGTGGGCCAATCTTTGAG |
| SGJ832 | GCAAATGTCTATGCTTGGCA | CACCAGACGCCTCGTTTATT |
| SGJ833 | AGGAAAAAGGCAAGCATTCA | CTTTCCTTTCCCTCTCGGAT |
| SGJ840 | TTTGCACCCATGAAGGTACA | TCCCCATCTCCTCTTTCCTT |
| SGK844 | TCCTCAGATGCAACAACAGC | ACTAATTGTGATCGCCCTGG |
| SGK851 | GAGCCACAACAACCTCAACA | ATGTGGTAGCGGAGGTTGAC |
| SGK857 | AGCGAAGCAACGACAGAAAT | CTTCAGTTTCTGCCTCGGTC |
| SGK875 | TGTGTCATTGTCACCCTCGT | GACAGAAGTGGCTTCCAAGG |
| SGK881 | CAGTTTCAAGAATCGCAGCA | TTCAAACCCCACCATTTCAT |
| SGK882 | TCTGGTTCGTTGTTGGTTCA | CAAGTGGAATCATGAGCAAAA |
| SGK884 | ACACTAGCGATGGGTGGTTC | TACACGCGGAACATACCAGA |
| SGK885 | GCATTTTGCAGGCTATGGTT | ACCTAACAGCCAGGATGTGG |
| SGK886 | TGTGGCCAACAGAACAGAAG | TCACGTGACATCCTTTTCCA |
| SGK891 | GCTTTTCGCTTCTTCACACC | ATTTCGCGAATCTTCCATTG |
| SGK892 | CCGTCGTTGAGGTTCAAAAT | ATGTGACTCCAAAAGGGCTG |
| SGK894 | TCTGAAAACAGAGGACCAGAAA | ACGGAATGCGTAGAATCGTC |
| SGK902 | GGCATTCGATTTGGAAAGAA | CTCAAATGCTAAAACCCCCA |
| SGK903 | CCTTCTCTGCCATCAAGAGC | CATGGCCTTCGCACTATTTT |
| SGK906 | CGACCTCAAGCCTCATCTTC | CGGCGAGTAGTCACAACAGA |
| SGK909 | CCGATCCTCGGGTACATAGA | CTTGGATTGTCCACCGTCTT |
| SGK922 | CGGGTTGGAGTCTATGCAGT | CCCTCTTGCTTTTGCTGTTC |
| SGK923 | ACCAAGTTGAATTGGATCGC | ACGACAAATGTTTTCCTCGC |
| SGK938 | CAGTTCGTGTTGGGACTGAA | GATGGCCTGATTTGCTTTTC |
| SGK941 | GTGTCACCCTCCATGCTTTT | TGTTTCTTCACATTTATGGGTGAG |
| SGK960 | TGAGAGAGGGCAGAACCACT | TTTGAAGCATGCATGAGGAG |
| SGK969 | CCTTCCGGTTTGTATCTTCG | CGAATCAGAAGCGTTGCTTT |
| SGK972 | CAACCAGACCCACCTCTGAT | TGTTTCCACCTCTCACCTCC |
| SGK974 | CGCCGTGAAATCTCTCAAAT | ACTTTCTTACGGCATCCACG |
| SGK980 | AGGTAAGAGTAAGCGCGACG | GGGACAGAGCTGAACAGGAG |
| SGK981 | AATGAAGGAGCAACAAACGG | AATTGCAGCCAAATCAGCTT |
| SGK984 | ATGGGAAGCATGGAAAGTGA | GCTCTGCCTAACTAACCCCC |
| SGK991 | GGGAGGTTGAAGACGAAACA | CCCCAAAAATAAAACAAACCAA |
| SGK992 | GGCTGATGGAGACATTTCGT | GACAAACAAGCTGAGACCCC |
| SGK1005 | GCAGAAGAGCGTCCAAGTTC | GTTTCTCTCTCCCTGCCCTT |
| SGK1011 | TGCGGAGCATCAAAATACAA | TGAATGCCCTTTCGACAAAT |
| SGK1017 | GCCCATTGAATGTCAGGTCT | TTGACTGTGGGAGGAAAAGG |
| SGK1018 | ACGAAGAGTACGAAGGCGAA | TCCTCATCCCACATGAAACA |
| SGK1022 | TTTTGTTTGAGGGGCTTCAC | TTCCTCATTTCCAAATTCCTTC |
| SGK1025 | TTCTATCGGAAAATCGGCAC | TCTTCCTCTTCGCTGCTCTC |
| SGK1029 | ACGAATTGGAGCTTTTCGTG | AATGGCGGTGAAATGAGAAG |
| SGK1031 | GCTGTTGCTGTTGCTGTTGT | CCAACAGGCCTGCTACTTTC |
| SGK1032 | CTCACCACAACGCACAGAAT | TGAGTAGCTTCCCTCCGAAA |
| SGK1033 | AATCTGGGCCTGAGAATGTG | CCCTCAGCAGCAGCTTTATC |
| SGK1034 | AAAGGGATTGGAAGGATTGG | GGATGATGGGACTTGCTCTC |
| SGK1035 | ACGAAGATGCAAACACACCA | TTTGGCTTTTTCATTGCTGA |
| SGK1037 | GGAGGCTCTCAATAAGCACG | CGATTTTAGGCTCTTCAGCG |
| SGK1039 | AGGAAGAAGAGACAACGGCA | TGAAGTCCAAGAAGCGAAGG |
| SGK1041 | AGCTTTTCTAGGAGTCCGCC | GCCATTGACGACAATTCCAT |
| SGK1043 | GCCTCGTTCGCTGTATATTC | TCGCTTCTCAATCGTGTCAG |
| SGK1045 | AACATACCAAATCGGCGAG | GCATTTCCCCTCATTCTAAC |
| SGK1046 | TCTGTTTGTGGCCATGAGAG |  GCTTTGCTGATGATGTCTGG  |
| SGJ647 | AGCATTTCCCGTCGTCATAC | TGCAGAGGAAGGGCTCTAAA |
| SGJ649 | AAGCTTGCTTCGATTGTTTCA | GTTAGAGCGCACAGAAAGGG |
| SGJ650 | ATCGCCATAACCCATAACCA | GGGGATAGAATGGTGGGTTT |
| SGJ657 | GAAAAGGCAAAAGGCAGAGA | ATTAAACCCCTGCCCCATAC |
| SGJ663 | GAAGAAGGAACAGAGGCGTG | CCCCCTGAAATTTCTTCTCC |
| SGJ668 | ACACGATGAAAAAGTTCGGC | AGGATTGTGATTGGACCTCG |
| SGJ669 | CACACCAAATTCAAACCCAG | CAAACCCCAAATAAACGAACA |
| SGJ673 | TCTTCCGATTTCCTCGTCTC | CAATCCAGCATCAGAAGCAA |
| SGJ675 | TGGTGTGCAAGTGGTTTCAT | TGAAGGCCAGTGTAAGCAAA |
| SGJ678 | CACGATGAATTTGCCACTCA | AAGAAAAACACGCAAATGGG |
| SGJ679 | GGTCCCCAGTCAGTCATCTC | GGCATCCCTTAAGCTCCTTC |
| SGJ681 | TTCAGCAACAGAGGCAGATG | AAACCCCATGGATTTTTCAC |
| SGJ685 | TACGATGATCTCGCCTCCTC | TCACTCCCCAAAACCACTTT |
| SGJ690 | ATCGGTCGTTGGTTGATCTC | ATCAGACAGCCACTGCTCCT |
| SGJ692 | TGGTTGATCCATACAGCGAA | GAGGGGAGGAAAGTCAGGAG |
| SGJ693 | GCCAAGGATATGAACGAACG | TCTCACACAAAGCTGGCATC |
| SGJ696 | TTGATCACTGAAATGCCTGC | CTTGCCAGATAGAAACCCCC |
| SGJ697 | GCCGATCATAACAGAGGGAA | CACATTTGGAACTCGAGGCT |
| SGJ698 | TTGGTGGGTCGCTCTGTAAT | GCTGTAGACCAAGAGGCCAG |
| SGJ700 | AACACCATTTTGAAAGGCCA | TACAAATTCCCAAATCCCCA |
| SGJ705 | CACTCGAACAATCGCGTAAA | CTTTTGAAATCCGCTCTTGC |
| SGJ708 | CCACCAGCAACTGAGAAACA | TAAGGCAAAAGCAGAAGGGA |
| SGJ709 | TCCCCTTTGCTCACAATCTC | AATGAAGCAGCGTTAAGCGT |
| SGJ715 | GTGCACACCTTGGGCTTTAT | TTGACATGGTGTCTTTTCTTGC |
| SGJ726 | AATCCTTCAACGACCATTCG | CAGGTGCATGAATTTTGGTG |
| SGJ729 | CGAACAACTTTGGTGGACCT | ATCCCCCTCCATAGCTGTTT |
| SGJ733 | GCGAGAAGTGCTCCAAGAAG | GGAGAAAAGTGATGGGGGAT |
| *Cucumis sutivus* | cs01 | CCTCTGAGATGCCCTTTCTG | AGAAGGCAAAGGCAAATTCA |
| cs05 | AGGGAAAATTAGGGGCATC | CTGAATTGCAATAGGCACGA |
| cs13 | AGTCTTTTCCCACCGGTCA | TGGCTGTGACTCTGTGTGTG |
| cs22 | GCAGAACCCAATGGTGATTT | AGAAAGGAAGCTCCCCTGAG |
| cs37 | AGTGGCCAACTCTCGATGAT | TGCTTCCACTGGGTTCTTCT |
| cs48 | ATGGGAAGTTCATCGTCGTC | TCCAATCCATGGCTACACAA |
| cs50 | ACGGCTTCCATTAACACCTG | AAGCTTCAATGGCTTCCTCA |
| Chinese cabbage | p004 | TGCTTGCAGAAAGACGAACA | TTCTTAGTGTCAACCAGGCG |
| p007 | TGGATTAAGACCATCCCGAG | AGAAGGAGCTCTTGTGAGCG |
| p008 | AGATTACTGGAGAAGCCGCC | AGAAGGAGCTCTTGTGAGCG |
| *Capsicum annuum* | cams101 | TGGATTGGGAGAAGATCGAC | TCAGCAATTAACATGCCAAAA |
| cams-163 | GCGTGGGAATACAATGCTAGA | TCCATATAGCCCGTGTGTGA |
| cams-351 | ACCTGCAGTTTGTTGTTGGA | CGCATGAAGCAAATGTACCA |
| cams-373 | CCTCCTACCCTATCCCCAAG | GGTTGATGGTCCATGTTCAA |
| cams-424 | TAGCAGCAGCTGATGGAGAA | CCTTCTTCTTTGCCACCTTC |
| cams-885 | AACGAAAAACAAACCCAATCA | AACGAAAAACAAACCCAATCA |
| Bell pepper | hpms 1-5 | CCAAACGAACCGATGAACACTC | GACAATGTTGAAAAAGGTGGAAGAC |
| hpms 1-41 |  GGGTATCATCCGTTGAAAGTTAGG |  CAAGAGGTATCACAACATGAGAGG |
| hpms 1-62 |  CATGAGGTCTCGCATGATTTCAC |  GGAGAAGGACCATGTACTGCAGAG |
| hpms 1-173 |  TGCTGGGAAAGATCTCAAAAGG |  ATCAAGGAAGCAAACCAATGC |
| hpms 1-168 |  GCCCCGATCAATGAATTTCAAC |  TGATTTTTGGGTGGAGAGAAAACC |
| hpms 2-2h |  GCAAGGATGCTTAGTTGGGTGTC |  TCCCAAAATTACCTTGCAGCAC |
| *Cucumis melo* | cm04 | CATGGCGATGTTTTCTTTCA | AAGGGAAAATTTTGGAAGTGG |
| cm09 | GTCAAAAGCATCAGCAGCAA | CAAGTTAGGCAAACCCCAAA |
| cm17 | CCTTCATCATCATCATCGTCA | GACCGGCAGTGGACATAGTT |
| cm23 | TTCTTCATTTAGGGGCACTG | AAAGGGGGCTCAACATTTTT |
| cm46 | GCTCCGGCAAACCTTTTTAT | GTGGACACGGTGATCACAAA |
| cm47 | ACTTTGAATCCTCCGCTCCT | TGCATGAGACCTTGTGGAAG |
| cm48 | TCAAACCTGATGCTGTGGAC | CAVAAAGCACACATTCCATTG |
| cm50 | TTGTTTTTGTTGGGCACTCA | TTTCAGGCTTTTTCTGATGGA |
| cm53 | CTGCCGTGAAGGAGAAGAAC | AGCCTCAATCCCCAATCTCT |
| CMMS 30-3 | TTCCCACCAGCCCAACGGACACACT | GAGATACAGAAACGACGACTAACCT |
| CMMS4-3 | ACCGAAATCATAAGGAACATAAGAG | TATGAGCTGTGTTGTGTATGAAAAC |
| CMMS33-2 | GCTACTTTTTATGGCGGCAGTGACG | ATTCGGATGATTATTCTTCGCAGTT |
| CMMS33-1 | TGTAATAGGATGACCAAGGGGAGTT | TTCAGGAGCTACAACAAGATTTCAA |
| CMMS35-5 | AACGGGATTTTGGAGGCATATTCGG | CTCCCCAGTGTATCAGCCAAATCTC |
| CMMS12-6 | AACATGATGTGTTTACCAACTTTTT | GGTTAAGGGAAAGTGAAGAGATGGT |
| CMMS15-4 | GTCCGCCATCGCCACTACAAATCAA | CTCCGTAAAACCTTCTTCCTCTCTC |
| CMMS2-3 | ATCACCCACCCCACCACTGCCAAAA | CCTTGAAAAACCACCAACATAACAC |
| CMMS22-2 | CGTTATACAAGATAGAGATAGAGAG | TTCAACTAATCCCCAAGACAAACAA |
| CMMS1-7 | CAAAAGACAAGGAGACGAAGACACC | AGACAACTGGTCGTACAGACACAGT |
| CMMS27-1 | TCCATGAATTTATCGGGACTTACCA | TTGCCTCATTACTCAACTGTATTTC |
| CMMS35-4 | ACGGATACATCGAGGAGACTTCATG | GTCAGCTTCAACCCTTTACTTTTTC |
| CMMS34-10 | GGGGTGTGAAGCTGAAGGCAAAGTC | AAAGGAAGAAGAAGAAAAAGGAGAA |
| CMMS34-8 | TTTCTTACTTTTTGGTTTGGTTCTG | GGCGCTGTGGTGAGTGTCGGGAGAG |
| CMMS31-3 | TTATGCATTAGTTCTTTACCGTTTA | CTTGTCGCAGGGTCTTTATTGTGTT |
| CMMS14-1 | CATTGCTACTATTGTCGTCGTTGCT | TTTCTTTCTTTTCCGTATCCATTTT |
| CMMS1-3 | TTGAATGATTGGAGGGAAGATAACG | CAAATATTGATGGATTTAATATATT |
| CMMS3-1 | AAATATAAGCAAACCAAAGTTGACC | CCGGGATATACGGACATACACACAC |
| CMMS34-6 | GGGGCCAGCTCAACAACCACCATAG | TGCCATCGAAGTTAGTTGAAGCTCA |
| CMMS35-3 | CGGAGAAGAAGGAAGGGTTTTAAGA | ATTCGTAGTTCATACTCTCTTTCTC |
| CMMS35-1 | CTTGGGTAAGTCTGTGGATGTTGCT | CTACGCATAACATTTTAGGCATCCA |
| CMMS12-4 | GATGCGGTGAGAAAGAGTTGAGAGA | AGAGGGAGAGAGTTTGTAAAAAAAT |
| CMMS36-2 | CCACACATTACAAACTAAACAAACA | CGATTCCGATTTGGTGTGGCGTTTT |
| cm0005 |  CATGACCACCATGAGGATA |  GATAGCCACGAGCATAGTATT |

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**Supplementary Figure 1. Amplification in *Momordica* genus with microsatellites from *Luffa cylindrica* (SGJ745, SGJ753, SGJ774, SGJ777, SGK922, SGK992, SGK1005, SGK1031, SGK1041, SGK1046, SGJ663, SGJ669, SGJ679, SGJ690, SGJ696, SGJ697, SGJ700, SGJ726)**

M- 50 bp Ladder; 1. *Momordica charantia* var. *charantia*;2. *Momordica charantia* var. *muricata*



**Supplementary Figure 2. Amplification in *Momordica* genus with microsatellites from *Cucumis melo* (cm04, cm09, cm17, cm47, cm53, CMMS 30-3, CMMS34-8, CMMS36-2), *Cucumis sativus* (cs37, cs50),Chinese cabbage (p004, p008) and *Capsicum annuum* (cams-424)**

M- 50 bp Ladder; 1. *Momordica charantia* var. *charantia*;2. *Momordica charantia* var. *muricata*