

## Supporting Information

**Table S1.** Oligonucleotides

| <b>Primers used for mutant characterization</b>                        |  |
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| <i>MT11-f</i> (Fig. 1B, arrow a)                                       | GTTGATGGTGCATCGTTGG                      |
| <i>MT11-r</i> (Fig. 1B, arrow b)                                       | TGTCAAATGTATCATTGCCATTC                  |
| <i>DEP1-f</i> (Fig. 1B, arrow c)                                       | GGGATTCAAGGTCACGGATA                     |
| <i>DEP1-r</i> (Fig. 1B, arrow d)                                       | CTCAAAACCTGTTCCGCATA                     |
| <i>Aktin-fwd</i>   | ATTCAGATGCCCAGAAGTCTTGTT                 |
| <i>Aktin-rev</i>   | GAAACATTTTCTGTGAACGATTCTCT               |
| <i>LBb1.3</i>  | ATTTTGCCGATTTCCGGAAC                     |
| <i>LB-FLAG</i>   | CGTGTGCCAGGTGCCACGGAATAGT                |
| <i>LB-Wisc</i>   | AACGTCCGCAATGTGTTATTAAGTTGT              |
| <b>Primers used for cloning of p35S::MT11 amiRNA</b>                   |  |
| <i>amiRNA_I</i>  | GATACTCAAACGCTGTAAGCCTGTCTCTCTTTTGTATTCC |
| <i>amiRNA_II</i>   | GACAGGCTTACAGCGTTTGAGTATCAAAGAGAATCAATGA |
| <i>amiRNA_III</i>  | GACAAGCTTACAGCGATTGAGTTTACAGGTCGTGATATG  |
| <i>amiRNA_IV</i>   | GAAACTCAATCGCTGTAAGCTTGCTACATATATATTCCT  |
| <i>amiRNA_A</i>  | CTGCAAGGCGATTAAGTTGGGTAAC                |
| <i>amiRNA_B</i>  | GCGGATAACAATTTACACAGGAAACAG              |
| <b>Primers used for cloning of promoter::gene-GFP fusions</b>          |  |
| <i>MT11-1925f</i>  | CACCTGAAAGAGGCCTAGCGAAGA                 |
| <i>MT11+2018r</i>  | ACGAGATGAGTTTCTGTTATCTTCTTGG             |
| <i>DEP1-1649f</i>  | CACCATCTGCGACACAATCTGCTG                 |
| <i>DEP1+3660r</i>  | GATTTGGGAGAATGATGTGACA                   |
| <b>Primers used for cloning of subcellular localization constructs</b> |  |
| <i>MT11_cds+1f</i>   | CACCATGTCCGGCGAAGGAGACACG                |
| <i>MT11_cds+1122r</i>  | ACGAGATGAGTTTCTGTTATCTTCTTGGCA           |
| <i>DEP1_cds+1f</i>   | CACCATGGCGGTGGCTGCAGCG                   |
| <i>DEP1_cds+1521r</i>  | GATTTGGGAGAATGATGTGACAGTCTTGAAC          |
| <b>Primers used for cloning of SUC2::MT11/DEP1</b>                     |  |
| <i>MT11_cds+1f</i>   | CACCATGTCCGGCGAAGGAGACACG                |
| <i>MT11_cds+1125r</i>  | TCAACGAGATGAGTTTCTGTTATCTTCTTGG          |
| <i>DEP1_cds+1f</i>   | CACCATGGCGGTGGCTGCAGCG                   |
| <i>DEP1_cds+1524r</i>  | CTAGATTTGGGAGAATGATGTGACAGTCTT           |
| <i>hpt/KpnI-f</i>  | CACCGGTACCGGTTCTGTTCTATTTGCT             |
| <i>hpt/KpnI-r</i>  | GGTACCGTTTTCCAGTCACGACGTT                |
| <b>Primers used for qRT-PCR</b>  |  |
| <i>UBI10_qPCR-f</i>  | GATGGTCGTACTTTGGCGGATTAC                 |
| <i>UBI10_qPCR-r</i>  | AGACGCAACACCAAGTGAAGGG                   |
| <i>MT11_qPCR-f</i>   | GCAGGAATCATAACCGAGAAAGGG                 |
| <i>MT11_qPCR-r</i>   | GGAACATCCGCAAGTCGCAATG                   |
| <i>SULTR1;2_qPCR-f</i>   | GCCTGTATTGGAGCATTCTTTGGC                 |
| <i>SULTR1;2_qPCR-r</i>   | ATCTTAGCAAACGAGATCGAGACG                 |
| <i>APR3_qPCR-f</i>   | CAGAGAAGCTAGATGTGGTGAAG                  |
| <i>APR3_qPCR-r</i>   | AACATCTTCAGCTCCACTAAAGGC                 |

**Table S2.** Standards used during UPLC-ESI-MS/MS measurements

| Name                              | Abbreviation        | molecular mass | ionization mode | quantification ion | first target ion | second target ion |
|-----------------------------------|---------------------|----------------|-----------------|--------------------|------------------|-------------------|
| Serine                            | SER                 | 105.9          | ESI+            | 88.0               | 70.0             | 42.1              |
| Homoserine                        | HSER                | 119.9          | ESI+            | 102.0              | 84.0             | 56.0              |
| Cysteine                          | CY                  | 121.9          | ESI+            | 76.0               | 87.0             | 58.9              |
| Cystathionine                     | CYST                | 223.0          | ESI+            | 134.0              | 87.0             | 56.0              |
| Homocysteine                      | HCY                 | 135.9          | ESI+            | 73.0               | 56.0             | 46.9              |
| Methionine                        | MET                 | 149.8          | ESI+            | 133.0              | 104.5            | 56.0              |
| <sup>13</sup> C-Methionine        | <sup>13</sup> C-MET | 150.9          | ESI+            | 102.0              | 74.0             | 56.0              |
| S-Methylmethionine                | SMM                 | 164.8          | ESI+            | 102.0              | 74.0             | 56.0              |
| S-Adenosylmethionine              | SAM                 | 399.1          | ESI+            | 250.1              | 136.0            | 97.0              |
| S-Adenosylhomocysteine            | SAH                 | 385.1          | ESI+            | 250.1              | 133.6            | 88.0              |
| 1-aminocyclopropane-1-carboxylase | ACC                 | 101.9          | ESI+            | 56.0               | 84.0             | 74.0              |