

Supplementary Table S9. List of functionally validated genes from previous studies.

| Gene family | Gene name | Genban accession | Species |
|--------------------|------------------|-------------------------|---------------------------------|
| | CjPR10A | BAF45338 | <i>Coptis japonica</i> |
| | TfNCS | ACO90248 | <i>Thalictrum flavum</i> |
| | PsNCS1 | AAX56303 | <i>Papaver somniferum</i> |
| | PsNCS2 | AAX56304 | <i>Papaver somniferum</i> |
| NCS | NnNCS1 | ANI26411 | <i>Nelumbo nucifera</i> |
| | NnNCS3 | ANI26412 | <i>Nelumbo nucifera</i> |
| | NnNCS4 | ANI26413 | <i>Nelumbo nucifera</i> |
| | NnNCS5 | AND61511 | <i>Nelumbo nucifera</i> |
| | NnNCS7 | AND61512 | <i>Nelumbo nucifera</i> |
| | Cj6OMT | BAB08004 | <i>Coptis japonica</i> |
| | CjCoOMT | BAC22084 | <i>Coptis japonica</i> |
| | Cj4'OMT | BAB08005 | <i>Coptis japonica</i> |
| | Ec4'OMT | BAM37633 | <i>Eschscholzia californica</i> |
| | Ec7OMT | BAE79723 | <i>Eschscholzia californica</i> |
| | NnOMT1 | AXJ91466 | <i>Nelumbo nucifera</i> |
| | NnOMT2 | AXJ91465 | <i>Nelumbo nucifera</i> |
| | NnOMT3 | AXJ91464 | <i>Nelumbo nucifera</i> |
| OMT | NnOMT4 | AXJ91463 | <i>Nelumbo nucifera</i> |
| | NnOMT5 | XP_010276063 | <i>Nelumbo nucifera</i> |
| | NnOMT7 | XP_019055563 | <i>Nelumbo nucifera</i> |
| | Ps4'OMT1 | AAP45313 | <i>Papaver somniferum</i> |
| | Ps4'OMT2 | AAP45314 | <i>Papaver somniferum</i> |
| | Ps6OMT | AAQ01669 | <i>Papaver somniferum</i> |
| | Ps7OMT | AAQ01668 | <i>Papaver somniferum</i> |
| | PsSOMT3 | AFK73711 | <i>Papaver somniferum</i> |
| | Tf6OMT | AAU20765 | <i>Thalictrum flavum</i> |
| | CjCNMT | BAB71802 | <i>Coptis japonica</i> |
| | EcTNMT | ACO90222 | <i>Eschscholzia californica</i> |
| | NnCNMT | AXJ91467 | <i>Nelumbo nucifera</i> |
| | PbTNMT | ACO90237 | <i>Papaver bracteatum</i> |
| | PsCNMT | AAP45316 | <i>Papaver somniferum</i> |
| CNMT | PsRNMT | AOR51552 | <i>Papaver somniferum</i> |
| | SiCNMT1 | QFU85193 | <i>Stephania intermedia</i> |
| | SiCNMT2 | QFU85194 | <i>Stephania intermedia</i> |
| | SiCNMT3 | QFU85195 | <i>Stephania intermedia</i> |
| | TfCNMT | AAU20766 | <i>Thalictrum flavum</i> |
| | TfPavNMT | ACO90251 | <i>Thalictrum flavum</i> |
| | CjNMCH | BAB12433 | <i>Coptis japonica</i> |
| NMCH | EcNMCH | AAC39453 | <i>Eschscholzia californica</i> |
| | PsNMCH | AAF05621 | <i>Papaver somniferum</i> |
| | TfNMCH | AAU20767 | <i>Thalictrum flavum</i> |