

**Table S4. The Ka/Ks ratios of duplication for *TRM4* genes between *P. alba* × *P. glandulosa* and *A. thaliana*.**

| Sequence                     | Ka       | Ks      | Ka/Ks     |
|------------------------------|----------|---------|-----------|
| Pag.A01G003989.3-AT3G13180.1 | 0.174267 | 1.62615 | 0.107165  |
| Pag.A01G004119.1-AT4G26600.1 | 0.292551 | 1.80691 | 0.161907  |
| Pag.A01G004119.1-AT5G55920.1 | 0.282415 | 4.46059 | 0.0633135 |
| Pag.A05G002066.1-AT1G06560.1 | 0.270984 | 2.17158 | 0.124787  |
| Pag.A06G000700.1-AT5G26180.1 | 0.266295 | 1.55696 | 0.171036  |
| Pag.A07G002149.1-AT5G66180.1 | 0.215721 | 4.2385  | 0.0508956 |
| Pag.A07G002542.1-AT2G22400.1 | 0.258701 | 1.70902 | 0.151374  |
| Pag.A07G002542.1-AT4G40000.1 | 0.282138 | 1.99794 | 0.141215  |
| Pag.B01G003858.3-AT3G13180.1 | 0.184513 | 2.3409  | 0.0788212 |
| Pag.B05G002042.1-AT1G06560.1 | 0.38061  | 3.20687 | 0.118686  |
| Pag.B06G000601.1-AT5G26180.1 | 0.264823 | 1.66543 | 0.159011  |
| Pag.B07G000528.3-AT2G22400.1 | 0.256679 | 1.71913 | 0.149307  |
| Pag.B07G000528.3-AT4G40000.1 | 0.280708 | 2.14369 | 0.130946  |
| Pag.B07G000997.2-AT5G66180.1 | 0.218079 | 4.19824 | 0.0519455 |