**Table S1.** Expression stability ranking of the 16 candidate reference genes under different abiotic stresses in *L. olgensis*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Method | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Ranking order under drought stress (better–good–average) | | | | | | | | | | | | | | | | |
| geNorm | *GAPDH/18S* | *PP2A-1* | *UBQ10* | *UBC9* | *TIP41* | *EF-1α* | *eIF-4α* | *ACT12* | *ACT2* | *PTBP1* | *TUB6* | *TUA* | *HIS* | *UBQ7* | *ADP* |  |
| NormFinder | *PP2A-1* | *18S* | *GAPDH* | *eIF-4α* | *UBQ10* | *UBC9* | *TIP41* | *ACT2* | *EF-1α* | *TUA* | *ACT12* | *TUB6* | *PTBP1* | *UBQ7* | *HIS* | *ADP* |
| BestKeeper | *GADPH* | *PTBP1* | *HIS* | *ACT2* | *ACT12* | *TUB-B* | *PP2A-1* | *UBQ10* | *18S* | *UBQ7* | *EF-1α* | *eIF-4α* | *TIP41* | *UBC9* | *TUB-A* | *ADP* |
| Comprehensive ranking | *GAPDH* | *PP2A-1* | *18S* | *UBQ10* | *PTBP1* | *ACT2* | *eIF-4α* | *UBC9* | *ACT12* | *TIP41* | *HIS* | *EF-1α* | *TUB6* | *TUA* | *UBQ7* | *ADP* |
| Ranking order under salt stress (better–good–average) | | | | | | | | | | | | | | | | |
| geNorm | *UBQ10/PP2A-1* | *UBC9* | *18S* | *TIP41* | *eIF-4α* | *EF-1α* | *TUB6* | *PTBP1* | *ACT2* | *GAPDH* | *UBQ7* | *ACT12* | *TUA* | *HIS* | *ADP* |  |
| NormFinder | *ACT2* | *18S* | *UBC9* | *PP2A-1* | *UBQ10* | *eIF-4α* | *GAPDH* | *TIP41* | *EF-1α* | *TUB6* | *PTBP1* | *ACT12* | *UBQ7* | *TUA* | *HIS* | *ADP* |
| BestKeeper | *PP2A-1* | *UBQ10* | *PTBP1* | *TIP41* | *ACT12* | *UBC9* | *18S* | *UBQ7* | *EF-1α* | *eIF-4α* | *TUB6* | *ACT2* | *HIS* | *GAPDH* | *TUA* | *ADP* |
| Comprehensive ranking | *PP2A-1* | *UBQ10* | *UBC9* | *18S* | *ACT2* | *TIP41* | *PTBP1* | *eIF-4α* | *EF-1α* | *ACT12* | *TUB6* | *GAPDH* | *UBQ7* | *HIS* | *TUA* | *ADP* |
| Ranking order under cold stress (better–good–average) | | | | | | | | | | | | | | | | |
| geNorm | *PP2A-1/GAPDH* | *TIP41* | *PTBP1* | *18S* | *ACT2* | *UBQ10* | *ACT12* | *eIF-4α* | *UBC9* | *EF-1α* | *UBQ7* | *HIS* | *TUA* | *TUB6* | *ADP* |  |
| NormFinder | *GAPDH* | *18S* | *UBC9* | *PP2A-1* | *ACT2* | *UBQ10* | *TIP41* | *eIF-4α* | *PTBP1* | *EF-1α* | *ACT12* | *UBQ7* | *HIS* | *TUA* | *TUB6* | *ADP* |
| BestKeeper | *PP2A-1* | *ACT12* | *PTBP1* | *ACT2* | *TIP41* | *18S* | *eIF-4α* | *UBQ10* | *GAPDH* | *UBQ7* | *HIS* | *UBC9* | *EF-1α* | *TUA* | *TUB6* | *ADP* |
| Comprehensive ranking | *PP2A-1* | *GAPDH* | *18S* | *TIP41* | *PTBP1* | *ACT2* | *ACT12* | *UBQ10* | *UBC9* | *eIF-4α* | *EF-1α* | *UBQ7* | *HIS* | *TUA* | *TUB6* | *ADP* |
| Ranking order under heat stress | | | | | | | | | | | | | | | | |
| geNorm | *TIP41/ACT2* | *PTBP1* | *eIF-4α* | *18S* | *HIS* | *UBC9* | *UBQ10* | *TUB6* | *PP2A-1* | *UBQ7* | *GAPDH* | *TUA* | *ACT12* | *EF-1α* | *ADP* |  |
| NormFinder | *18S* | *PTBP1* | *ACT2* | *UBC9* | *TUB6* | *eIF-4α* | *TIP41* | *UBQ10* | *HIS* | *TUA* | *GAPDH* | *PP2A-1* | *UBQ7* | *EF-1α* | *ACT12* | *ADP* |
| BestKeeper | *UBQ7* | *TIP41* | *ACT2* | *PP2A-1* | *PTBP1* | *GAPDH* | *eIF-4α* | *ACT12* | *HIS* | *TUA* | *TUB6* | *18S* | *UBC9* | *UBQ10* | *EF-1α* | *ADP* |
| Comprehensive ranking | *TIP41* | *ACT2* | *PTBP1* | *18S* | *UBQ7* | *eIF-4α* | *UBC9* | *PP2A-1* | *HIS* | *TUB6* | *GAPDH* | *UBQ10* | *TUA* | *ACT12* | *EF-1α* | *ADP* |
| Ranking order all stress (better–good–average) | | | | | | | | | | | | | | | | |
| geNorm | *PP2A-1/ACT2* | *TIP41* | *PTBP1* | *18S* | *eIF-4α* | *UBC9* | *UBQ10* | *GAPDH* | *HIS* | *ACT12* | *UBQ7* | *TUA* | *EF-1α* | *TUB6* | *ADP* |  |
| NormFinder | *18S* | *UBC9* | *PTBP1* | *TIP41* | *eIF-4α* | *UBQ10* | *ACT2* | *PP2A-1* | *GAPDH* | *HIS* | *ACT12* | *TUA* | *UBQ7* | *EF-1α* | *TUB6* | *ADP* |
| BestKeeper | *ACT2* | *PP2A-1* | *PTBP1* | *TIP41* | *UBQ7* | *ACT12* | *GAPDH* | *18S* | *eIF-4α* | *HIS* | *UBQ10* | *UBC9* | *TUB6* | *TUA* | *ADP* | *EF-1α* |
| Comprehensive ranking | *ACT2* | *PP2A-1* | *PTBP1* | *18S* | *TIP41* | *UBC9* | *eIF-4α* | *UBQ10* | *GAPDH* | *ACT12* | *UBQ7* | *HIS* | *TUA* | *TUB6* | *EF-1α* | *ADP* |