**Table S5:** The comparison of PtHSF gene family.

|  |  |  |
| --- | --- | --- |
| ID | Name | Name in previous paper |
| Phatr3\_draftJ1650.p1 | PtHSF1 | Pt\_HSF4.7a |
| Phatr3\_EG02327.p1 | PtHSF2 | - |
| Phatr3\_J47181.p1 | PtHSF3 | Pt\_HSF1b |
| Phatr3\_J47360.p1 | PtHSF4 | Pt\_HSF2.1a |
| Phatr3\_J47952.p1 | PtHSF5 | Pt\_HSF3b |
| Phatr3\_J38294.p1 | PtHSF6 | Pt\_HSF2.1b |
| Phatr3\_EG00672.p1 | PtHSF7 | - |
| Phatr3\_EG01965.p1 | PtHSF8 | - |
| Phatr3\_J48361.p1 | PtHSF9 | Pt\_HSF4.2c |
| Phatr3\_J48394.p1 | PtHSF10 | Pt\_HSF4.6d |
| Phatr3\_J48667.p1 | PtHSF11 | Pt\_HSF4.3c |
| Phatr3\_J48558.p1 | PtHSF12 | Pt\_HSF4.3b |
| Phatr3\_J48702.p1 | PtHSF13 | Pt\_HSF4.1c |
| Phatr3\_J48572.p1 | PtHSF14 | Pt\_HSF4.1b |
| Phatr3\_J31764.p1 | PtHSF15 | Pt\_HSF3.2d |
| Phatr3\_J42514.p1 | PtHSF16 | Pt\_HSF1g |
| Phatr3\_J43051.p1 | PtHSF17 | Pt\_HSF1a |
| Phatr3\_J42824.p1 | PtHSF18 | Pt\_HSF1.2a |
| Phatr3\_J39786.p1 | PtHSF19 | Pt\_HSF4.5d |
| Phatr3\_J39785.p1 | PtHSF20 | Pt\_HSF4.5e |
| Phatr3\_J39794.p1 | PtHSF21 | Pt\_HSF4.5c |
| Phatr3\_J49170.p1 | PtHSF22 | - |
| Phatr3\_J49620.p1 | PtHSF23 | Pt\_HSF4.6c |
| Phatr3\_J49596.p1 | PtHSF24 | Pt\_HSF4.7b |
| Phatr3\_J49567.p1 | PtHSF25 | Pt\_HSF4.6h |
| Phatr3\_J49557.p1 | PtHSF26 | Pt\_HSF4.6a |
| Phatr3\_EG01933.p1 | PtHSF27 | - |
| Phatr3\_J49566.p1 | PtHSF28 | Pt\_HSF4.6f |
| Phatr3\_EG00322.p1 | PtHSF29 | - |
| Phatr3\_J49594.p1 | PtHSF30 | Pt\_HSF4.3a |
| Phatr3\_J55070.p1 | PtHSF31 | Pt\_HSF4.4b |
| Phatr3\_J55108.p1 | PtHSF32 | Pt\_HSF1c\_AP2 |
| Phatr3\_EG00212.p1 | PtHSF33 | - |
| Phatr3\_J40994.p1 | PtHSF34 | Pt\_HSF2b |
| Phatr3\_J50136.p1 | PtHSF35 | Pt\_HSF2.2b |
| Phatr3\_J43413.p1 | PtHSF36 | Pt\_HSF2.2e |
| Phatr3\_J43364.p1 | PtHSF37 | Pt\_HSF4.2d |
| Phatr3\_J43363.p1 | PtHSF38 | Pt\_HSF4.2j |
| Phatr3\_J50481.p1 | PtHSF39 | Pt\_HSF2.2c |
| Phatr3\_J50622.p1 | PtHSF40 | Pt\_HSF3.3c |
| Phatr3\_J44029.p1 | PtHSF41 | Pt\_HSF1.1a |
| Phatr3\_J33622.p1 | PtHSF42 | Pt\_HSF1.2b |
| Phatr3\_J44099.p1 | PtHSF43 | Pt\_HSF3.2b |
| Phatr3\_J44200.p1 | PtHSF44 | Pt\_HSF1.2c |
| Phatr3\_J33380.p1 | PtHSF45 | Pt\_HSF1.1b |
| Phatr3\_J44088.p1 | PtHSF46 | - |
| Phatr3\_J44582.p1 | PtHSF47 | Pt\_HSF2c |
| Phatr3\_J44570.p1 | PtHSF48 | Pt\_HSF2.1c |
| Phatr3\_J44684.p1 | PtHSF49 | Pt\_HSF4.5b |
| Phatr3\_J44586.p1 | PtHSF50 | Pt\_HSF2.2a |
| Phatr3\_J44750.p1 | PtHSF51 | Pt\_HSF1d |
| Phatr3\_J44917.p1 | PtHSF52 | Pt\_HSF4.4c |
| Phatr3\_J34415.p1 | PtHSF53 | Pt\_HSF4.4d |
| Phatr3\_J34724.p1 | PtHSF54 | Pt\_HSF1.1d |
| Phatr3\_J45206.p1 | PtHSF55 | Pt\_HSF3.2e |
| Phatr3\_J45112.p1 | PtHSF56 | Pt\_HSF1.1c |
| Phatr3\_J45666.p1 | PtHSF57 | Pt\_HSF1.3a |
| Phatr3\_J35419.p1 | PtHSF58 | Pt\_HSF1.3b |
| Phatr3\_J45560.p1 | PtHSF59 | Pt\_HSF3.1b |
| Phatr3\_J45559.p1 | PtHSF60 | Pt\_HSF3.1c |
| Phatr3\_J45391.p1 | PtHSF61 | Pt\_HSF3.3d |
| Phatr3\_J45393.p1 | PtHSF62 | Pt\_HSF3.3a |
| Phatr3\_J45392.p1 | PtHSF63 | Pt\_HSF3.3b |
| Phatr3\_J45389.p1 | PtHSF64 | Pt\_HSF3.3f |
| Phatr3\_J45816.p1 | PtHSF65 | Pt\_HSF4a\_4f |
| Phatr3\_J45926.p1 | PtHSF66 | Pt\_HSF3.1a |
| Phatr3\_EG02471.p1 | PtHSF67 | - |
| Phatr3\_EG02624.p1 | PtHSF68 | - |

Note: Members in red color were considered as traditional subfamily, while members in black color might belong to untraditional subfamily.