**Table S1 Accession Ids and analysis of the Chal\_sti\_synt\_N and Chal\_sti\_synt\_C domains in all the PeqPKS, DcaPKS and AshPKS sequences**

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| *Phalaenopsis equestris* |
| **Sequence Name** | **Accession Id** | **Chal\_sti\_synt\_N domain** | **Chal\_sti\_synt\_C domain** |
|  | **Start** | **End** | **E-value** | **Start** | **End** | **E-value** |
| PeqPKS01 | XP\_020571230.1 | 5 | 230 | 1.30E-120 | 240 | 390 | 6.70E-73 |
| PeqPKS02 | XP\_020591420.1 | 2 | 225 | 4.00E-92 | 236 | 386 | 1.50E-60 |
| PeqPKS03 | XP\_020572030.1 | 4 | 228 | 2.60E-99 | 239 | 389 | 5.30E-64 |
| PeqPKS04 | XP\_020572025.1 | 5 | 231 | 7.50E-97 | 242 | 392 | 8.80E-64 |
| PeqPKS05 | XP\_020572026.1 | 4 | 228 | 2.80E-99 | 239 | 389 | 4.40E-63 |
| *Dendrobium catenatum* |
| DcaPKS01 | XP\_028548381.1 | 6 | 230 | 6.60E-123 | 240 | 390 | 4.20E-72 |
| DcaPKS02 | XP\_020693902.1 | 5 | 229 | 1.30E-124 | 239 | 389 | 1.40E-72 |
| DcaPKS03 | XP\_020690160.1 | 30 | 251 | 6.20E-102 | 262 | 414 | 8.40E-61 |
| DcaPKS04 | XP\_020691094.2 | 48 | 272 | 1.30E-91 | 283 | 435 | 9.20E-53 |
| DcaPKS05 | XP\_020690097.1 | 4 | 228 | 2.70E-99 | 239 | 389 | 5.30E-61 |
| DcaPKS06 | XP\_020690099.2 | 4 | 228 | 9.90E-99 | 239 | 389 | 5.20E-61 |
| DcaPKS07 | XP\_020704102.1 | 4 | 228 | 8.80E-95 | 239 | 387 | 6.00E-57 |
| DcaPKS08 | XP\_020704098.1 | 4 | 228 | 1.90E-98 | 239 | 389 | 4.00E-62 |
| *Apostasia shenzhenica* |
| AshPKS01 | PKA56868.1 | 5 | 229 | 3.40E-121 | 239 | 389 | 1.70E-73 |
| AshPKS02 | PKA51028.1 | 4 | 228 | 1.90E-111 | 238 | 388 | 2.40E-68 |
| AshPKS03 | PKA45887.1 | 8 | 228 | 3.00E-94 | 236 | 405 | 6.80E-48 |
| AshPKS04 | PKA66411.1 | 1 | 157 | 4.10E-76 | 168 | 333 | 7.10E-59 |
| AshPKS05 | PKA53999.1 | 7 | 230 | 1.30E-93 | 241 | 391 | 1.20E-63 |
| AshPKS06 | PKA56805.1 | 7 | 231 | 1.10E-91 | 240 | 390 | 2.70E-62 |