**Supplementary Table 4. List of dinoflagellate PKS sequences from literature utilized for phylogenetic inference.**

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| --- | --- | --- | --- |
| **Accession number/**  **Transcript code** | **Annotation** | **Species** | **Reference** |
| AFW98413.1 | Type I PKS | *Alexandrium ostenfeldii* | Eichholz et al. (2012) |
| AFW98411.1 | Type I PKS | *Alexandrium ostenfeldii* | Eichholz et al. (2012) |
| AFW98412.1 | Type I PKS | *Alexandrium ostenfeldii* | Eichholz et al. (2012) |
| AIW63288.1 | PKS | *Azadinium spinosum* | Meyer et al. (2015) |
| AQS99211.1 | Type I PKS | *Gambierdiscus excentricus* | Kohli et al. (2017) |
| AQS99217.1 | Type I PKS | *Gambierdiscus excentricus* | Kohli et al. (2017) |
| AQS99218.1 | Type I PKS | *Gambierdiscus excentricus* | Kohli et al. (2017) |
| AQS99241.1 | Type I PKS | *Gambierdiscus excentricus* | Kohli et al. (2017) |
| AQS99271.1 | Type I PKS | *Gambierdiscus excentricus* | Kohli et al. (2017) |
| AQS99289.1 | Type I PKS | *Gambierdiscus excentricus* | Kohli et al. (2017) |
| AQS99293.1 | Type I PKS | *Gambierdiscus excentricus* | Kohli et al. (2017) |
| AQS99216.1 | Type I PKS | *Gambierdiscus polynesiensis* | Kohli et al. (2017) |
| AQS99228.1 | Type I PKS | *Gambierdiscus polynesiensis* | Kohli et al. (2017) |
| AQS99236.1 | Type I PKS | *Gambierdiscus polynesiensis* | Kohli et al. (2017) |
| AQS99269.1 | Type I PKS | *Gambierdiscus polynesiensis* | Kohli et al. (2017) |
| AQS99314.1 | Type I PKS | *Gambierdiscus polynesiensis* | Kohli et al. (2017) |
| BAT21728.1 | PKS | *Karenia mikimotoi* | Kimura et al. (2015) |
| CAMPEP\_0189923024 | Type III PKS | *Kryptoperidinium foliaceum* CCMP1326 | De Luca and Lauritano (2020) |
| CAMPEP\_0199953780 | Type III PKS | *Durinskia baltica CSIRO\_CS38* | De Luca and Lauritano (2020) |
| CAMPEP\_0199957422 | Type III PKS | *Durinskia baltica*  *CSIRO CS38* | De Luca and Lauritano (2020) |

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