

Table S5. Previous records of 15 abundant genera from marine habitats (This table should not be considered exhaustive, papers included in this table only represent parts of recent studies reported these genera from marine habitats).

Genus	Abundances ¹	Occurrence in marine habitat ²	Common in marine habitat ³	References
<i>Thyridium</i> ⁴	36.40%	√		Li, 2013; Li et al., 2016; Xu et al., 2017; Mahanty et al., 2019; Maamar et al., 2020; Taha et al., 2021; Wang et al., 2021
<i>Pseudeurotium</i>	11.54%	√		Gao et al., 2008; Li, 2013; Henríquez et al. 2014; Li et al., 2016; Duarte et al., 2018; da Silva et al., 2020; Wang et al., 2021
<i>Candida</i>	8.23%	√	√	Reviewed in Richards et al., 2012, Raghukumar et al., 2017, Grossart et al. 2019, Sen et al. 2022; Kutty and Philip, 2008; Singh et al., 2010; Edgcomb et al., 2011; Fell, 2012; Li, 2013; Orsi et al., 2013; Taylor and Cunliffe, 2014; Zhang et al., 2014; Jones et al., 2015; Li et al. 2016; Xu et al., 2016; Hassett et al., 2020; Sen et al., 2021; Wang et al., 2021
<i>Cladosporium</i>	3.89%	√	√	Reviewed in Richards et al., 2012, Raghukumar et al., 2017, Grossart et al. 2019, Sen et al. 2022 Höller et al. 2000; Zhdanova et al., 2000; Damare et al., 2006; Singh et al., 2010; Li et al., 2014; Rédou et al., 2015; Zhang et al., 2015; Vera et al., 2017; Xu et al., 2017; Fotedar et al., 2018; Maamar et al., 2020; Pham et al., 2021; Sen et al., 2021; Wang et al., 2021
UC Ascomycota	3.89%	-	-	-

<i>Arthrinium</i>	3.31%	√	√	Reviewed in Raghukumar et al., 2017 and Sen et al. 2022; Höller et al. 2000; Miao et al., 2006; Burgaud et al., 2013; Li, 2013; Li et al., 2014; Wang et al., 2015; Venkatachalam et al., 2015; Li et al., 2016; Vera et al., 2017; Kwon et al., 2021; Pham et al., 2021; Wang et al., 2021
<i>Tetracladium</i>	2.59%	√		Rämä et al., 2014; Kalenitchenko et al., 2015; Chauvet et al., 2016; Li et al., 2016; Wang et al., 2021
<i>Cryptococcus</i>	2.54%	√	√	Reviewed in Richards et al., 2012; Raghukumar et al., 2017, Grossart et al. 2019, Sen et al. 2022; Takishita et al., 2006; Kutty and Philip, 2008; Edgcomb et al., 2011; Fell, 2012; Orsi et al., 2013; Li et al., 2014; Rédou et al., 2014; Jones et al. 2015; Li et al., 2016; Xu et al., 2016
<i>Malassezia</i>	2.17%	√	√	Reviewed in Richards et al., 2012, Raghukumar et al., 2017, Grossart et al. 2019, Sen et al. 2022; Nakagaki et al., 2000; Kutty and Philip, 2008; Edgcomb et al., 2011; Orsi et al., 2013; Amend 2014; Li et al. 2016; Xu et al., 2016; Lai et al., 2017; Sen et al., 2021
<i>Fusarium</i>	1.95%	√	√	Reviewed in Richards et al., 2012, Raghukumar et al., 2017, Jones et al., 2019, Grossart et al. 2019. Bugni and Ireland 2004; Damare et al., 2006; Li and Wang, 2009; Singh et al., 2010; Passarini et al., 2011; Nasrawi 2012; Steliga et al., 2012; Rédou et al., 2015; Zhang et al., 2015; Fuentes et al., 2016; Li et al., 2016; Sen et al., 2021; Wang et al., 2021
<i>Acremonium</i>	1.79%	√	√	Reviewed in Raghukumar et al., 2017, Sen et al. 2022; Höller et al. 2000; Zhdanova et al., 2000; Zuccaro et al., 2004; Panno et al., 2011; Li, 2013; Rédou et al., 2015; Venkatachalam et al., 2015; Li et al. 2016; Silber et al., 2016; Maamar et al., 2020; Wang et al., 2021

UC Fungi	1.40%	-	-	-
<i>Phialocephala</i>	1.18%	√		Li et al., 2007; Chen et al., 2010; Ebel, 2012; Li et al., 2016; Zhang et al., 2018; Martorell et al., 2021; Wang et al., 2021
<i>Teratosphaeria</i>	1.09%	√		Sakayaroj et al., 2010; Li et al., 2016; Subrmanian et al., 2018; Neethu et al., 2019; Wang et al., 2021
<i>Thermomyces</i>	1.08%	√		Li et al., 2016; Sobolevskaya et al., 2021; Wang et al., 2021

UC: unclassified.

¹ **Abundances:** Represents relative abundances of the genus in the entire fungal community in the present study.

² **The genus has been previously reported from marine habitats.**

³ **The genus has been reported to be common in marine environments.**

⁴ ***Thyridium*:** formerly as *Phialemoniopsis* (Sugita and Tanaka, 2022) and *Phialemonium* (Perdomo et al. 2013).

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