



Supplementary Materials

Table S1. Species of dinoflagellates of the genera *Gambierdiscus* and *Fukuyoa* in the Mexican Pacific and Gulf of California

Species	Site/Date	Reference
<i>Gambierdiscus toxicus</i>	Isla El Pardito, GC/1997	[29,30]
	Bahía Magdalena, PO and Bahía de La Paz, GC/2005	[31]
	Bahía Magdalena, PO/ Isla Isabel and Isla Socorro, PO/2011	[32] [33]
<i>Gambierdiscus</i> spp	Cabo Pulmo, GC/2010-2011	[34]
	Southern of GC/2016	[35]
	Bahía de La Paz, GC/2015, 2016, 2018, 2019	[36]
<i>Fukuyoa</i> sp.	Bahía de La Paz, GC/2015, 2016, 2018, 2019	[36]
<i>Gambierdiscus</i> cf. <i>carolinianus</i>	Isla San José and Bahía de La Paz, GC/2011, 2014, 2016	[37]
<i>Gambierdiscus</i> cf. <i>carpenteri</i>	Isla San José and Bahía de La Paz, GC/2011, 2014, 2016, Isla Gaviota	[37,38]
<i>Fukuyoa yasumotoi</i>	Isla San José and Bahía de La Paz, GC/2011, 2014, 2016	[37]

GC: Gulf of California; PO: Pacific Ocean

Table S2. *Gambierdiscus* and *Fukuyoa* species recorded in the site collected

Specie	Location	Substrate
<i>Gambierdiscus</i> cf. <i>caribaeus</i>	El Sauzoso	Coral reef
<i>Gambierdiscus</i> cf. <i>carpenteri</i>		Macroalgae <i>Padina</i> and <i>Dyctiota</i>
<i>Gambierdiscus</i> cf. <i>carpenteri</i>	El Conchalito Beach	Sandy sediment
<i>Gambierdiscus</i> cf. <i>carpenteri</i>	El Coromuel Beach	Coral reef
<i>Gambierdiscus</i> cf. <i>carpenteri</i>		Artificial substrate (old Marine Bridge piling)
<i>Gambierdiscus</i> cf. <i>carolineanus</i>	Espiritu Santo Island	Red and brown macroalgae adding to artificial substrate (Sunken Ship)
<i>Gambierdiscus</i> cf. <i>carpenteri</i>	Espiritu Santo Island	Red and brown macroalgae
<i>Gambierdiscus</i> cf. <i>toxicus</i>	Espiritu Santo Island	Rooky reef and artificial substrate (Sunken Ship)
<i>Fukuyoa</i> cf. <i>yasumotoi</i>	Espiritu Santo Island	Red and brown macroalgae adding to artificial substrate (Sunken Ship)

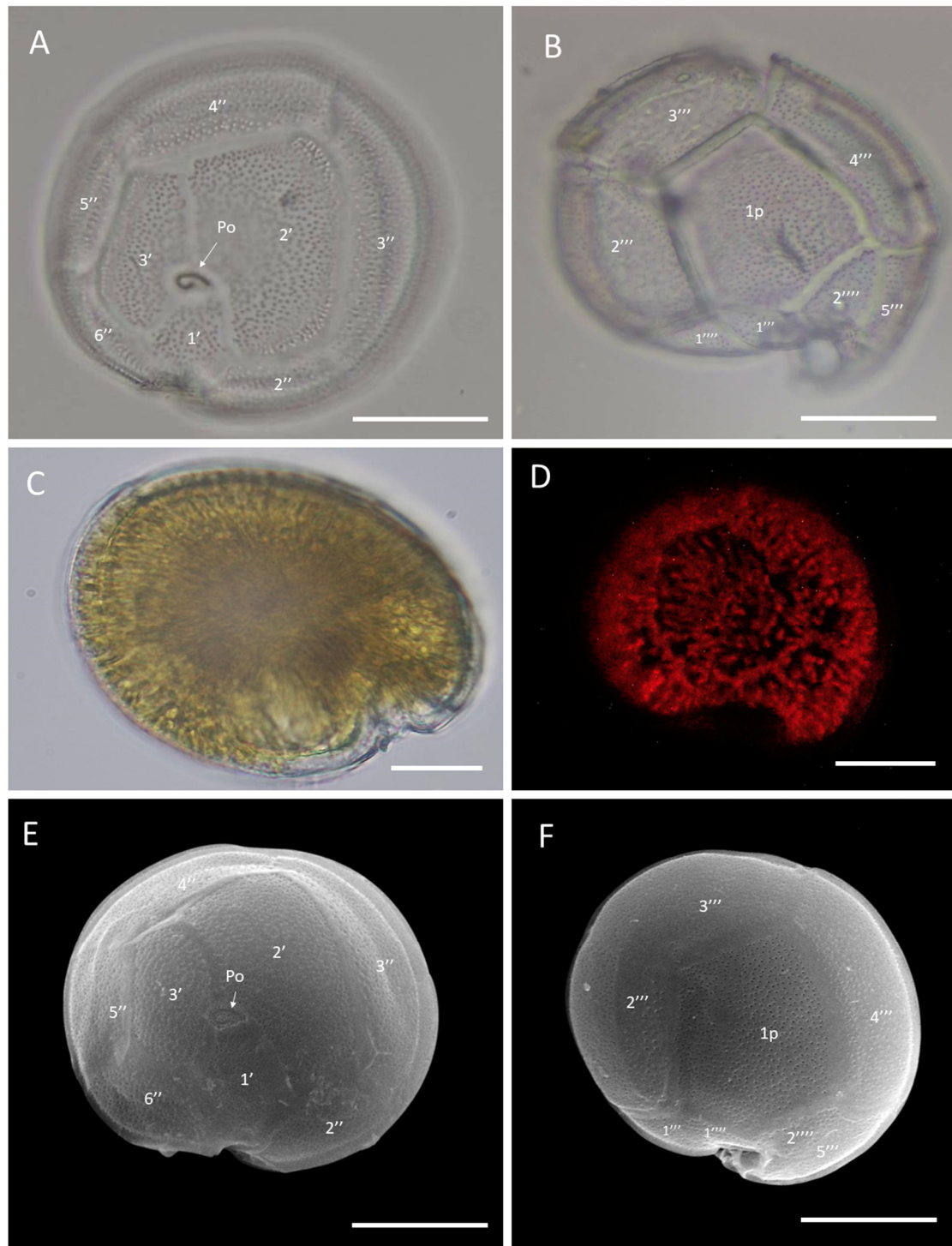


Figure S3. LM plate tabulation of *Gambierdiscus* cf. *caribaeus* (GbSa-2). (A) Apical view, (B) Antapical view, (C) Live cell, (D) Epifluorescence of chloroplast, (E) SEM plate tabulation Apical view, (F) SEM Antapical view. Scale bars: (A, B, and E) 50 μ m, (C, D) 30 μ m, and (F, E) 50 μ m.

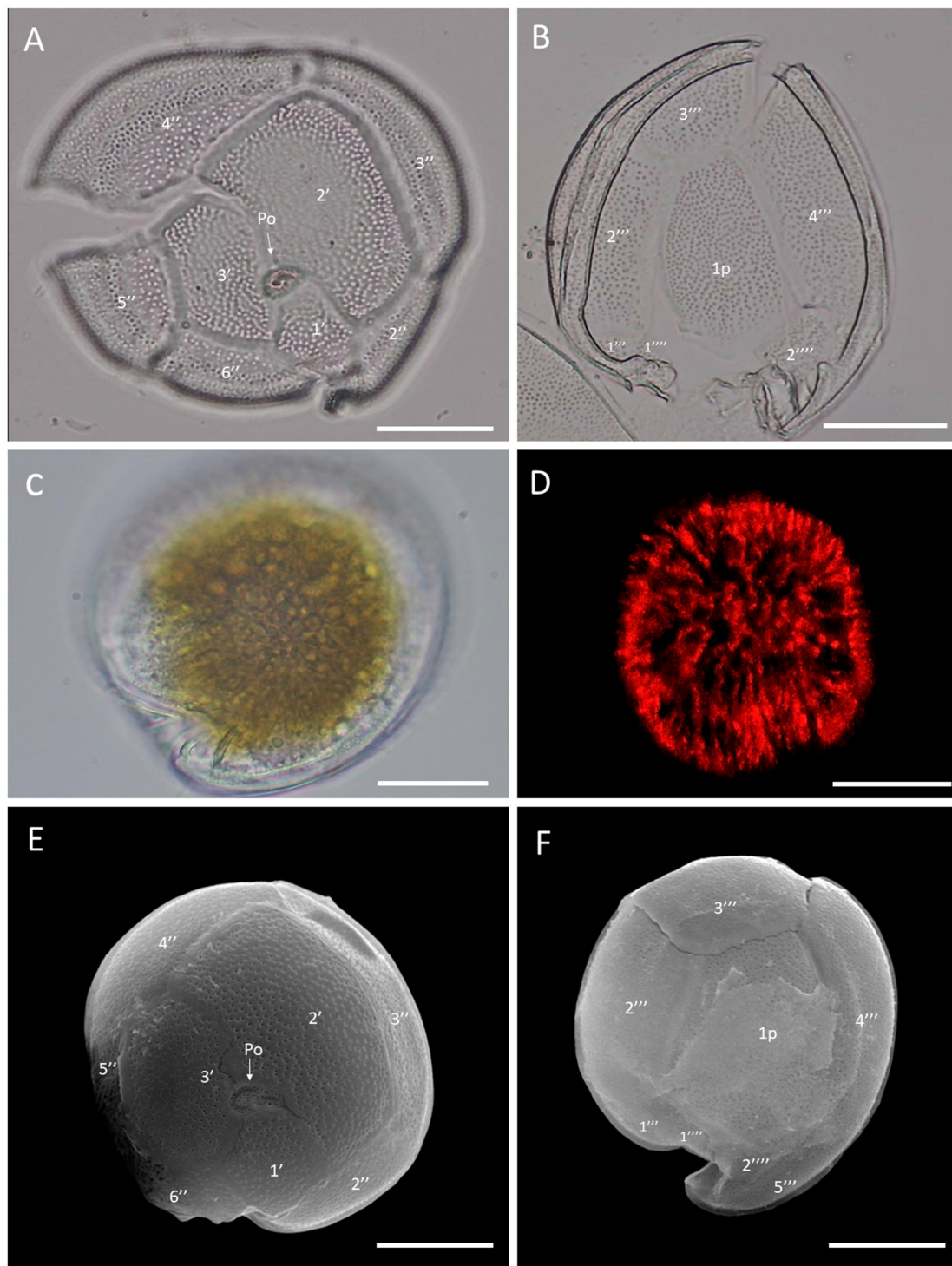


Figure S4. LM plate tabulation *Gambierdiscus cf. carpenteri* (GbSa-5). (A) Apical view, (B) Antapical view, (C) Live cell, (D) Epifluorescence of chloroplast, (E) SEM plate tabulation Apical view, (F) SEM Antapical view. Scale bars: (A, B, and E) 50 µm, (C, D) 30 µm, and (F, E) 50 µm.

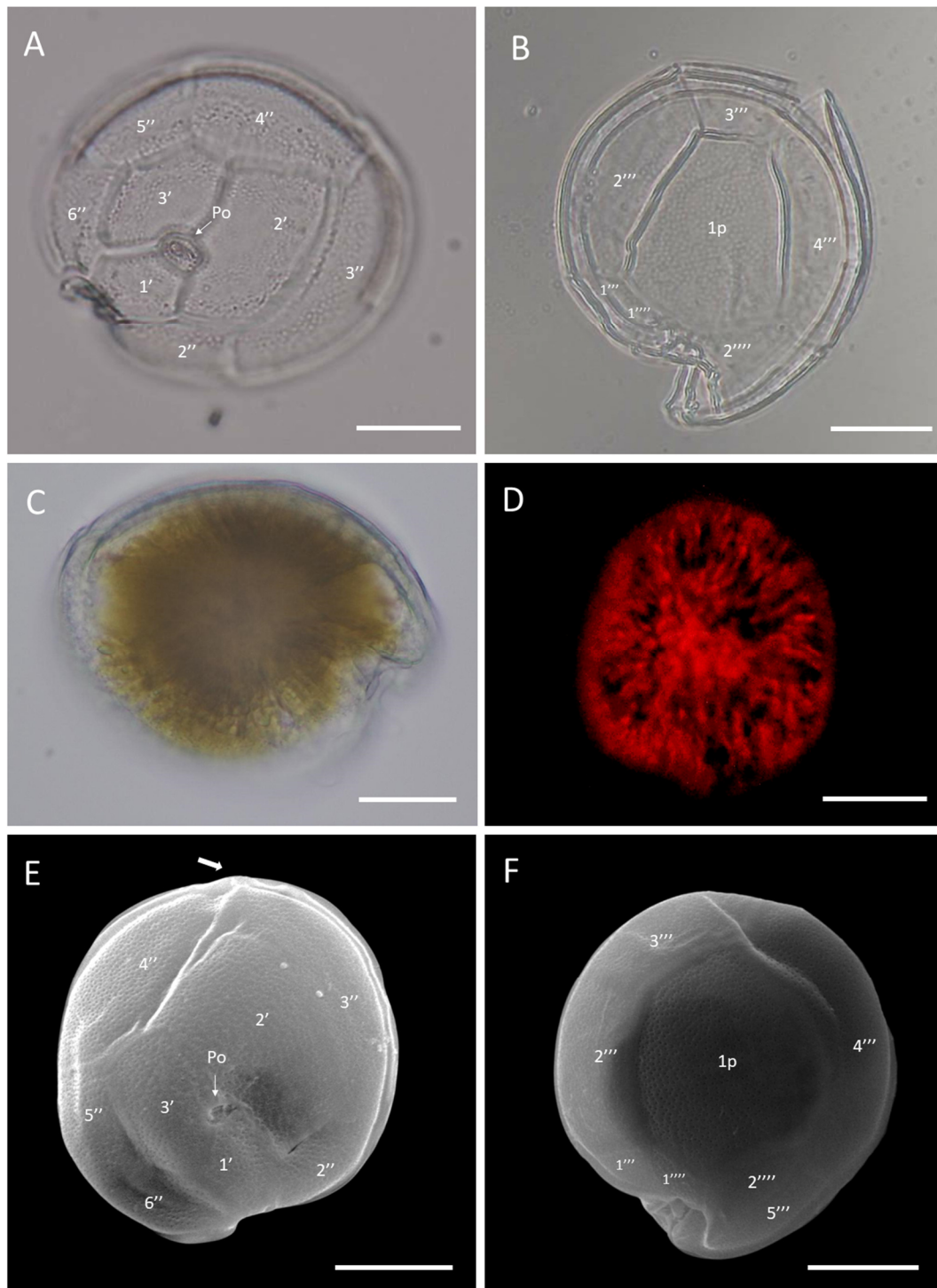


Figure S5. LM plate tabulation *Gambierdiscus* cf. *carpenteri* (GbSa-6). (A) Apical view, (B) Antapical view, (C) Live cell, (D) Epifluorescence of chloroplast, (E) SEM plate tabulation apical view, (F) Antapical view. Scale bars: (A, B, and E) 50 μ m, (C, D) 30 μ m, and (F, E) 50 μ m.

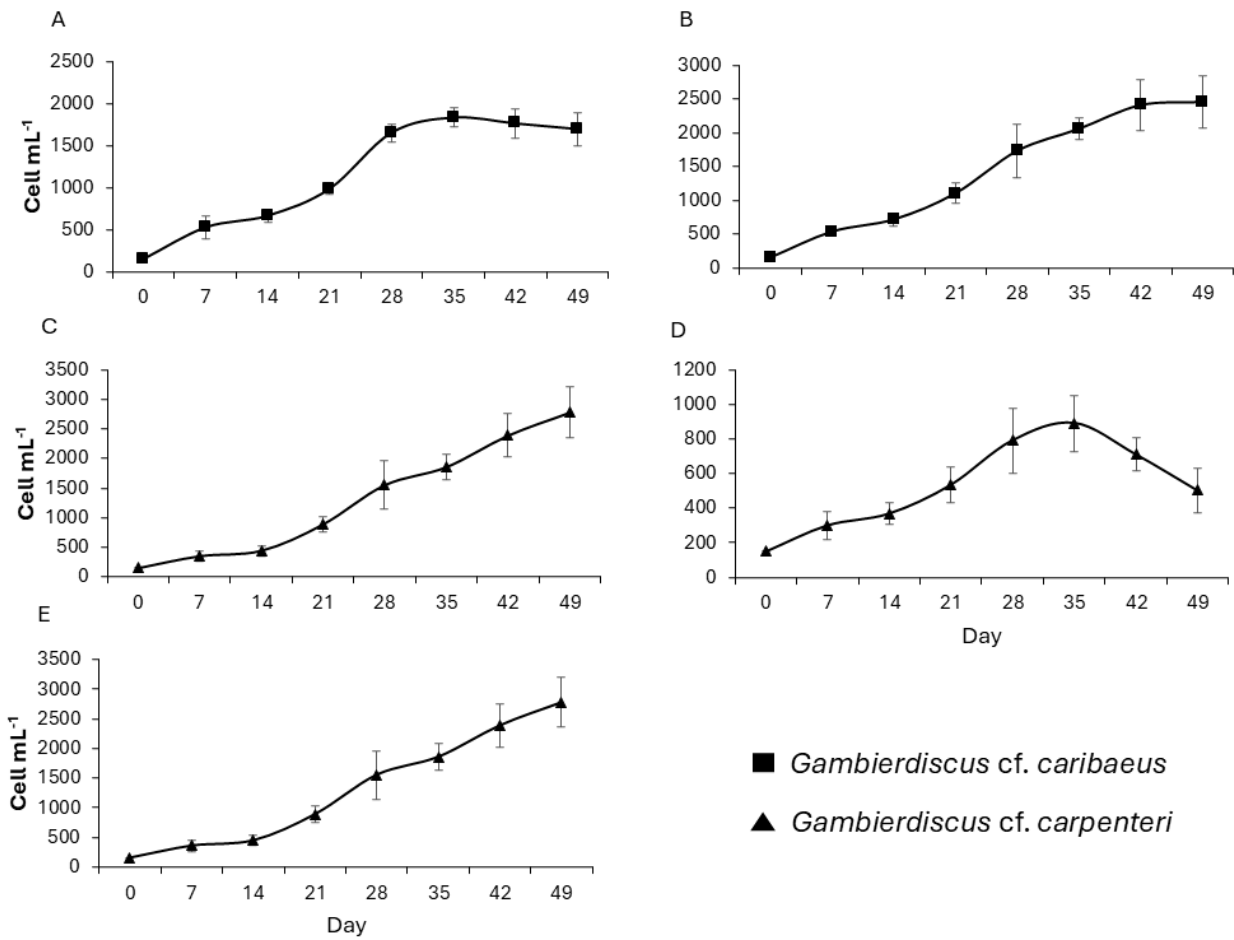


Figure S6. Growth curve of *Gambierdiscus* cf. *caribaeus* (A) GbSa-2 and (B) GbSa-7 and *Gambierdiscus* cf. *carpenteri* (C) GbSa-4, (D) GbSa-5, and (E) GbSa-6.

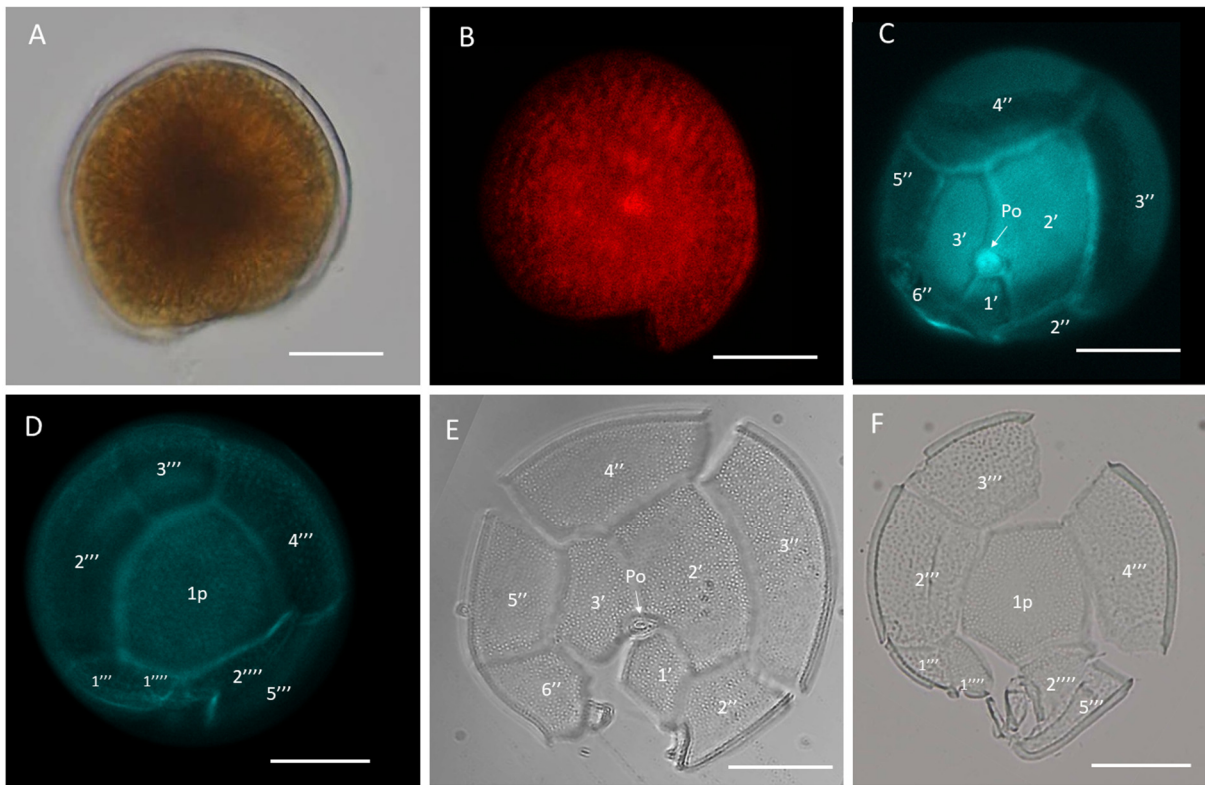


Figure S7. LM *Gambierdiscus cf. carolineanus* (GbEs-4). (A) Live cell, (B) Epifluorescence of chloroplast, (C) Plate tabulation apical view stained with fluorescent brightener 28, (E) apical view, (D) Plate tabulation apical view, (F) Antapical view. Scale bars: 40 μm.

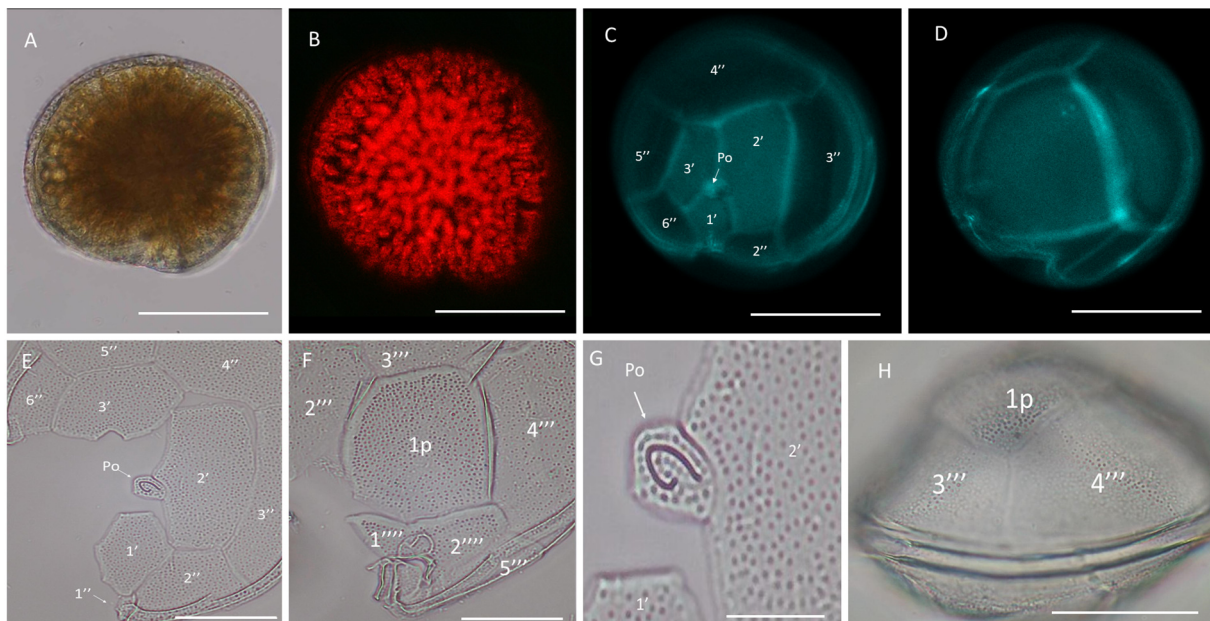


Figure S8. LM *Gambierdiscus* cf. *toxicus* (GbEs-3). (A) Live cell, (B) Epifluorescence of chloroplast, (C) Plate tabulation apical view stained with fluorescent brightener 28, (E) apical view, (D) Plate tabulation apical view, (F) Antapical view, (G) Po plante, (H) Dorsal view. Scale bars: (A-F and H) 50 μ m and (G) 20 μ m.

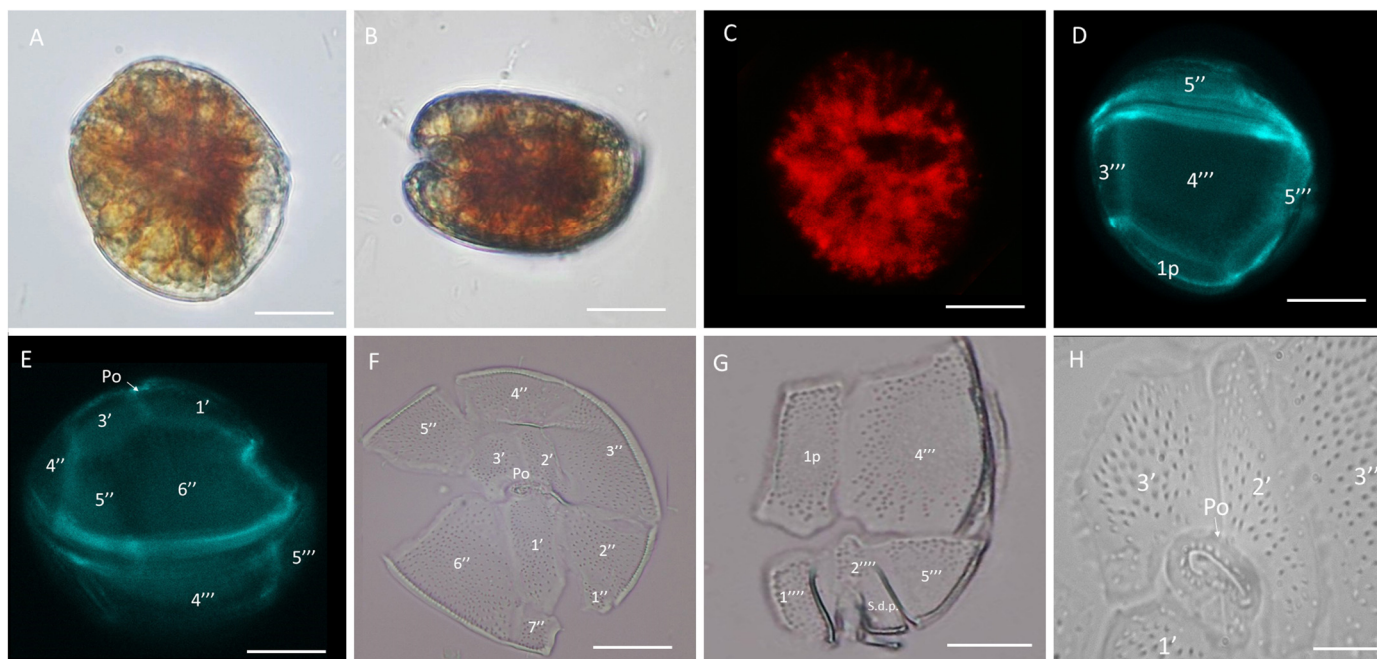


Figure S9. LM *Fukuyoa* cf. *yasumotoi* (FyEs-1). Live cell (A) lateral view, (B) antapical view, (C) Epifluorescence of chloroplast, (D) Plate tabulation lateral view stained with fluorescent brightener 28, (E) Dorso-lateral view, (F) Plate tabulation apical view, (G) Antapical view, (H) Po plate. Scale bars: (A-G) 10 μ m and (G) 20 μ m.

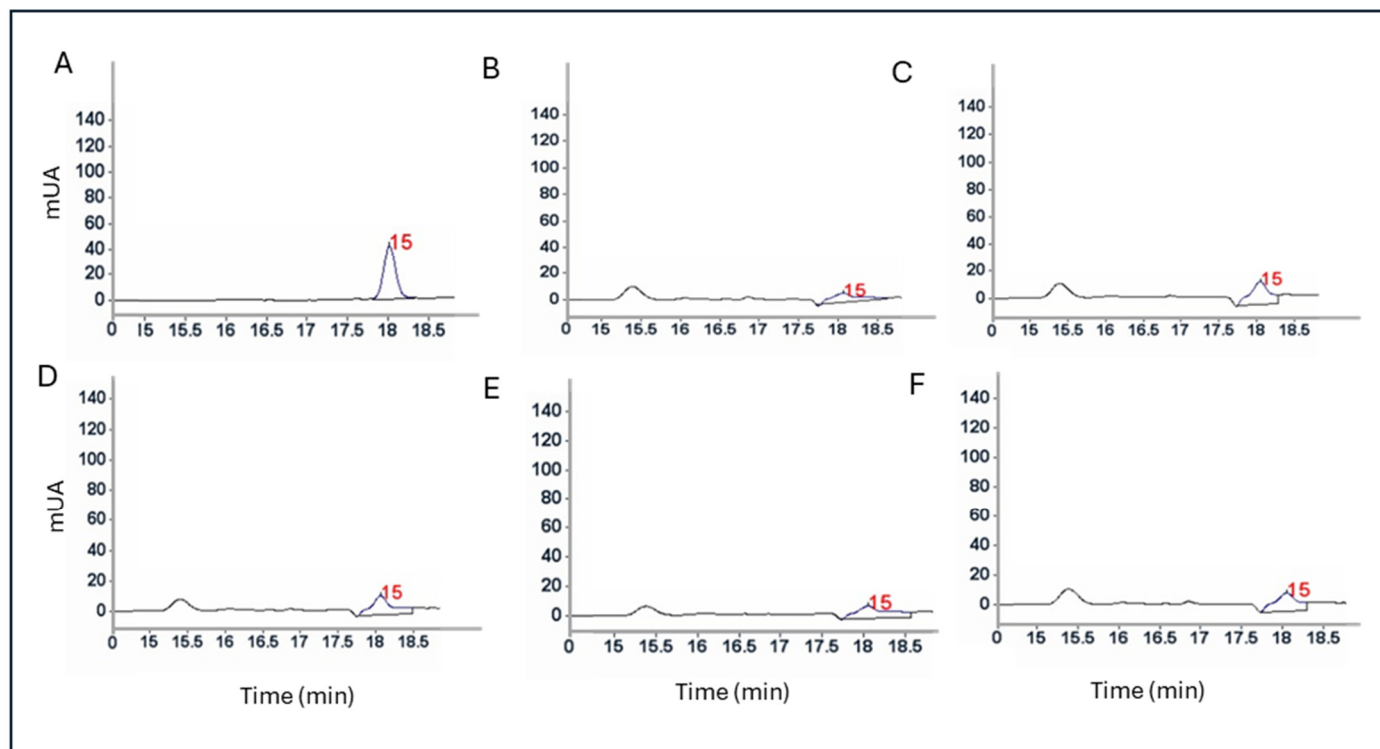


Figure S10. Chromatogram of the amino acid proline recorded at 262 nm. (A) Reference standard; (B) *Gambierdiscus* cf. *caribaeus* strains GbSa-2 and (C) GbSa-7 and *Gambierdiscus* cf. *carpenteri* strains (D) GbSa-4, (E) GbSa-5, and (F) GbSa-6.

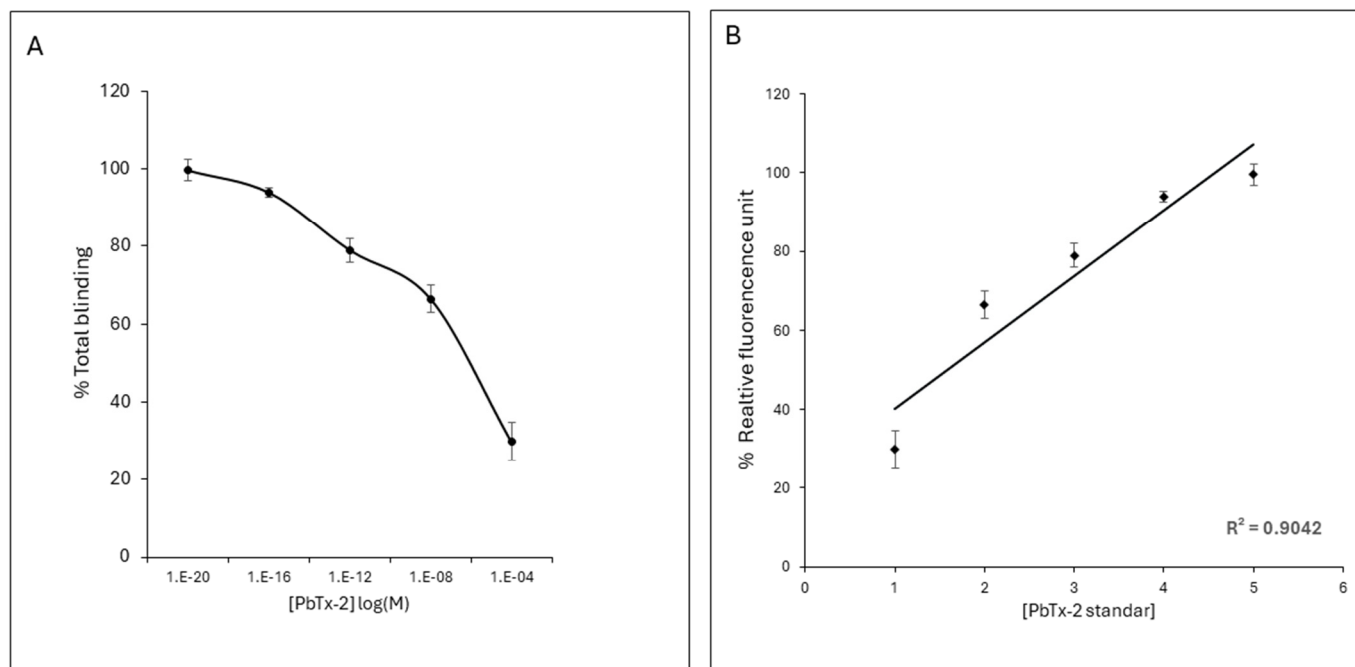


Figure S11. (A) Sigmoid dose response curve as a percentage of total binding. (B) Linear standard curve with concentration in dilution series from brevetoxin standard to extrapolated PbTx equivalents.