

# Supplementary materials: Application of a Quantitative PCR to Investigate the Distribution and Dynamics of Two Morphologically Similar Species, *Karenia mikimotoi* and *K. papilionacea* (Dinophyceae) in Korean Coastal Waters

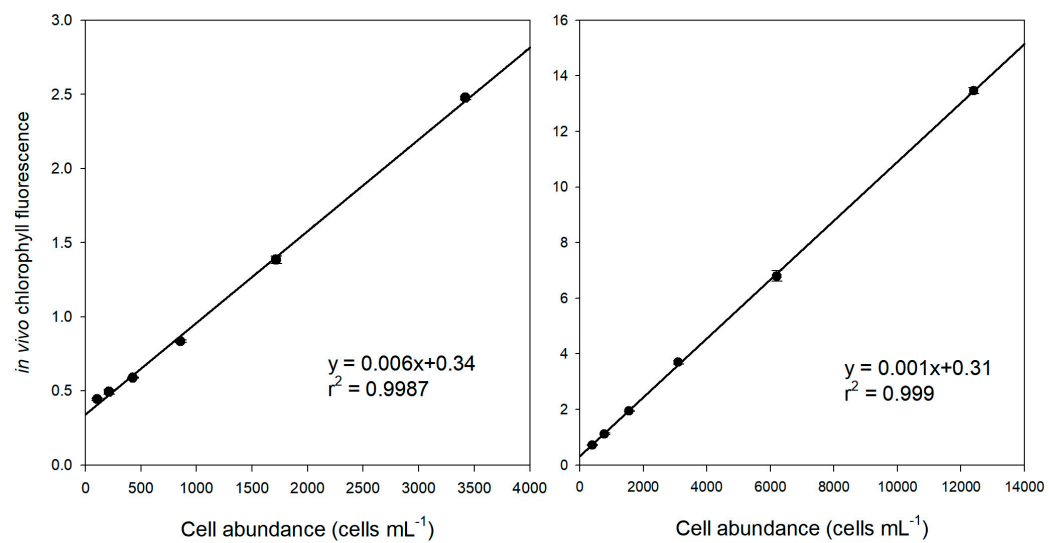
Sunju Kim, Minji Cho, Jiae Yoo and Bum Soo Park

**Table S1.** List of sampling locations, sampling dates, temperature, salinity, cell abundances (cells L<sup>-1</sup>) of *K. papilionacea* (Kp) and *K. mikimotoi* (Km) estimated by qPCR assay at each site in Korean coastal waters in September 2017.

	St.	Sampling site	Latitude	Longitude	Sampling date	Temp. (°C)	Sal.	Kp	Km
East Sea	S1	Gangneung	37°46'19"N	128°57'04"E	3 Sep 2017	23.9	30.9	-	-
	S2	Daejin, Donghae	37°34'53"N	129°06'43"E	3 Sep 2017	23.9	30.9	-	-
	S3	Sadong, Uljin	36°49'22"N	129°26'57"E	3 Sep 2017	24.2	31.4	-	6
	S4	Hakri, Gijang	35°15'30"N	129°14'48"E	3 Sep 2017	24.9	30.9	1147	-
South Sea	S5	Yongho, Busan	35°07'57"N	129°07'15"E	8 Sep 2017	25.8	30.4	39	-
	S6	Jangcheon, Jinhae	35°07'40"N	128°41'55"E	3 Sep 2017	25.3	31.9	-	-
	S7	Dotseom, Masan	35°10'33"N	128°34'11"E	3 Sep 2017	26.3	27.7	-	-
	S8	Dangdong, Goseong	34°59'20"N	128°24'34"E	3 Sep 2017	27.7	31.8	-	-
	S9	Goseong	34°56'19"N	128°12'06"E	3 Sep 2017	26.5	33.0	-	-
	S10	Mijo, Namhae	34°42'53"N	128°03'06"E	3 Sep 2017	25.5	32.9	336	-
	S11	Bangjukpo, Yeosu	34°37'55"N	127°47'32"E	2 Sep 2017	26.0	30.0	2477	3
	S12	Jakgeum, Yeosu	34°35'40"N	127°45'31"E	2 Sep 2017	25.3	31.4	98	-
	S13	Nokdong, Goheung	34°31'34"N	127°08'06"E	2 Sep 2017	25.3	31.4	-	-
	S14	Wando	34°19'38"N	126°48'32"E	2 Sep 2017	23.9	31.9	21	-
Yellow Sea	S15	Buk harbor, Mokpo	34°48'23"N	126°21'55"E	2 Sep 2017	24.6	28.8	-	-
	S16	Gyeokpo, Buan	35°37'21"N	126°28'10"E	2 Sep 2017	24.8	31.9	26	-
	S17	Bieung, Gunsan	35°56'18"N	126°31'52"E	2 Sep 2017	25.9	31.5	-	13
	S18	Magumpo, Taean	36°37'22"N	126°17'10"E	2 Sep 2017	24.4	31.5	14	122

**Table S2.** Calculated cell number (per mL) by direct counting and quantitative real-time PCR assay for the comparison of cell numbers between strains. qPCR values represent means ± SE.

Species	Strain	Cells number via light microscope	Cells number via standard curve	Strain for plotting standard curve
<i>K. papilionacea</i>	KP-LOMME02	600	639 ± 178	KP-LOMME01



**Figure S1.** Relationship between cell abundance and *in vivo* chlorophyll fluorescence in *K. papilionacea* (A) and *K. mikimotoi* (B).