

# Supplementary Material

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**Supplementary Table S1.** The five primer combinations of AFLP and associated polymorphisms in *Gracilaria vermiculophylla* along the coast of China

Primer combinations	No. of total bands	Polymorphic loci	Proportion of polymorphic loci (%)
<i>EcoR</i> I + AAA / <i>Mse</i> I + CAT	167	93	55.68
<i>EcoR</i> I + AAG / <i>Mse</i> I + CAT	200	79	39.50
<i>EcoR</i> I + AAG / <i>Mse</i> I + CAG	171	90	52.63
<i>EcoR</i> I + AAG / <i>Mse</i> I + CAA	226	120	53.10
<i>EcoR</i> I + AAT / <i>Mse</i> I + CAT	247	123	49.79
Total	987	434	43.97

AFLP, amplified fragment length polymorphism.

**Supplementary Table S2.** Analysis of polymorphic loci of *Gracilaria vermiculophylla* populations along the coast of China

Code	No.	No. of total bands	No. of polymorphic loci	Proportion of polymorphic loci (%)	No. of private bands
YT	24	703	486	69.10	10
JH	33	707	496	70.21	12
TC	30	697	466	66.87	6
NA	23	585	326	55.72	2
ZP	35	689	380	55.15	3
SS	19	502	246	48.94	0
YY	21	343	114	33.23	3
EY	21	352	119	33.94	5
SY	39	494	242	49.04	2
YH	36	536	286	53.39	4
LR	36	611	370	60.49	0
DC	32	513	260	39.61	5
JM	13	282	72	50.76	1
SD	7	420	166	25.43	0
CD	16	359	121	33.64	2
HN	35	262	65	24.62	0
HS	8	178	28	15.60	0
ZZ	28	193	32	16.82	0

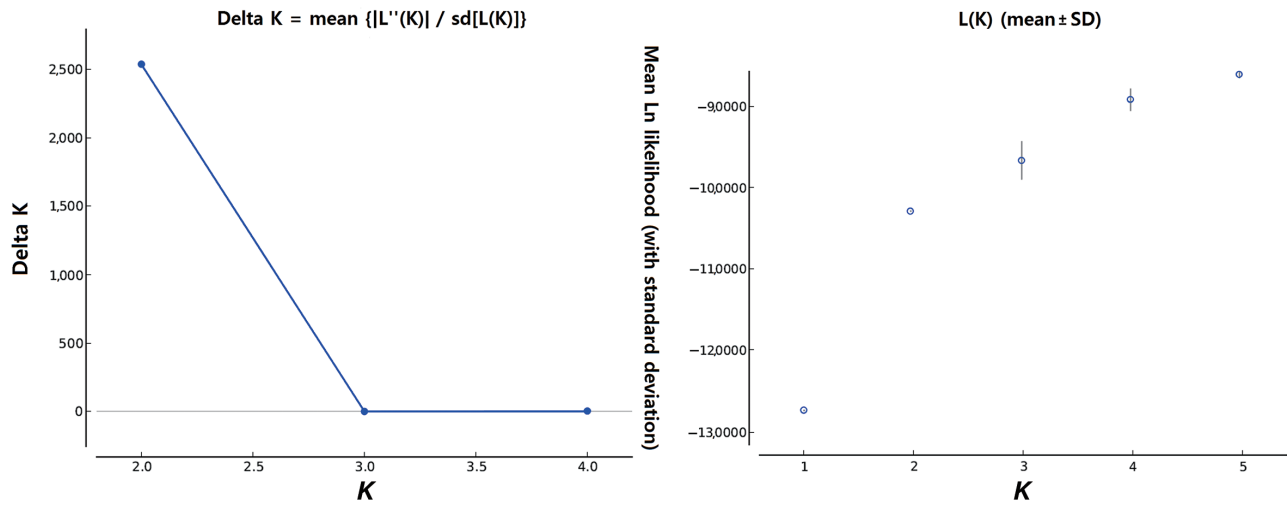
YT, Yingtan Beach, Beihai, Guangxi; JH, Jinghai, Beihai, Guangxi; TC, Techeng Island, Zhanjiang, Guangdong; NA, Nanao Island, Shantou, Guangdong; ZP, Zhangpu Ivao, Zhangzhou, Fujian; SS, Shengsi Island, Zhoushan, Zhejiang; YY, Bathing Beach (No. 1), Qingdao, Shandong; EY, Bathing Beach (No. 2), Qingdao, Shandong; SY, Bathing Beach (No. 3), Qingdao, Shandong; YH, Yinghaiguoji, Qingdao, Shandong; LR, Shilaoren, Qingdao, Shandong; DC, Dongchu Island, Weihai, Shandong; JM, Jiming Island, Weihai, Shandong; SD, Shidao Island, Weihai, Shandong; CD, Changdao Island, Yantai, Shandong; HN, Huangnichuan, Dalian, Liaoning; HS, Heishijiao, Dalian, Liaoning; ZZ, Zhangzidao Island, Dalian, Liaoning.

**Supplementary Table S3.** Locus by locus AMOVA of *Gracilaria vermiculophylla* populations along the coast of China

	Source of variation	d.f.	SSD	Variation (%)	F value
GenALEX	Among regions (South vs. North)	1	6,253.292	35	$F_{CT} = 0.350^{***}$
	Among populations within regions	15	4,732.913	10	$F_{ST} = 0.453^{***}$
	Within populations	404	22,896.156	55	$F_{SC} = 0.158^{***}$
	Total	420	34,161.361	-	-
Arlequin	Among regions (South vs. North)	1	7,645.105	34.98	$F_{CT} = 0.350^{***}$
	Among populations within regions	15	4,778.238	9.14	$F_{ST} = 0.441^{***}$
	Within populations	404	25,838.499	55.88	$F_{SC} = 0.141^{***}$
	Total	420	38,261.842	-	-

d.f., degrees of freedom; SSD, sum of squares.

\*\*\*  $p < 0.0001$ .



**Supplementary Fig. S1.** Delta K values of the K values tested (left) and mean Ln likelihood of K values tested (right).