

Supporting Information

Cyclic Dipeptides Mediating Quorum Sensing and Their Biological Effects in *Hypsizygus* *Marmoreus*

Shu-Jing Sun ^{1,*†}, Yun-Chao Liu ^{1†}, Cai-Hong Weng ^{2†}, Shi-Wei Sun ², Fan Li ¹, Hui Li ² and Hu Zhu ^{3,*}

¹ College of Life Sciences, Fujian Agriculture and Forestry University, Fuzhou 350002, People's Republic of China; yunfng0033@126.com (Y.-C.L.); fanli2020@126.com (F.L.)

² Centre for Bioengineering and Biotechnology, China University of Petroleum (East China), 66 Changjiang West Road, Qingdao 266580, People's Republic of China; chweng@ipe.ac.cn (C.-H.W.); sunshiwei_1986@163.com (S.-W.S.); lihui@upc.edu.cn (H.L.)

³ Fujian Provincial University Engineering Research Center of Industrial Biocatalysis, College of Chemistry and Materials Science, Fujian Normal University, 32 Shangsang Road, Fuzhou 350007, People's Republic of China

* Correspondence: shjsun2004@126.com (S.-J.S.); zhuhu@fjnu.edu.cn (H.Z.); Tel.: +86-591-83-789-492 (S.-J.S.); +86-591-83-465-326 (H.Z.)

Short title: Cyclic dipeptides and their functions.

Table S1. NMR data of compound 4.

Carbon Atom Number	δ_C	δ_H
1	165.05	
3	45.47	3.58-3.62(2H, m)
4	22.56	1.91-2.04(2H, m)
5	28.36	2.01-2.04(1H, m) 2.33-2.35(1H, m)
6	59.14	4.09(1H, t)
7	169.37	
NH		5.59(s)
9	56.18	4.28(1H, dd) 2.78(1H, dd)
10	36.79	3.62-3.66(1H, m)
1'	135.93	7.22-7.36(5H, m)
2'	129.29	
3'	129.10	
4'	127.57	

Table S2. NMR data of compound 1.

Carbon Atom Number	δ_C	δ_H
1	165.54	
3	44.99	3.25m 2.93m
4	22.30	1.70m
5	28.28	2.0m 1.40m
6	58.84	4.03t
7	169.35	
9	56.46	4.23t
10	35.16	3.40m 2.93m
1'	127.51	
2'	131.25	7.04d
3'	115.22	6.62d
4'	156.34	
5'	115.22	6.62d
6'	131.25	7.04d
4' -OH		9.17
8-NH		7.85

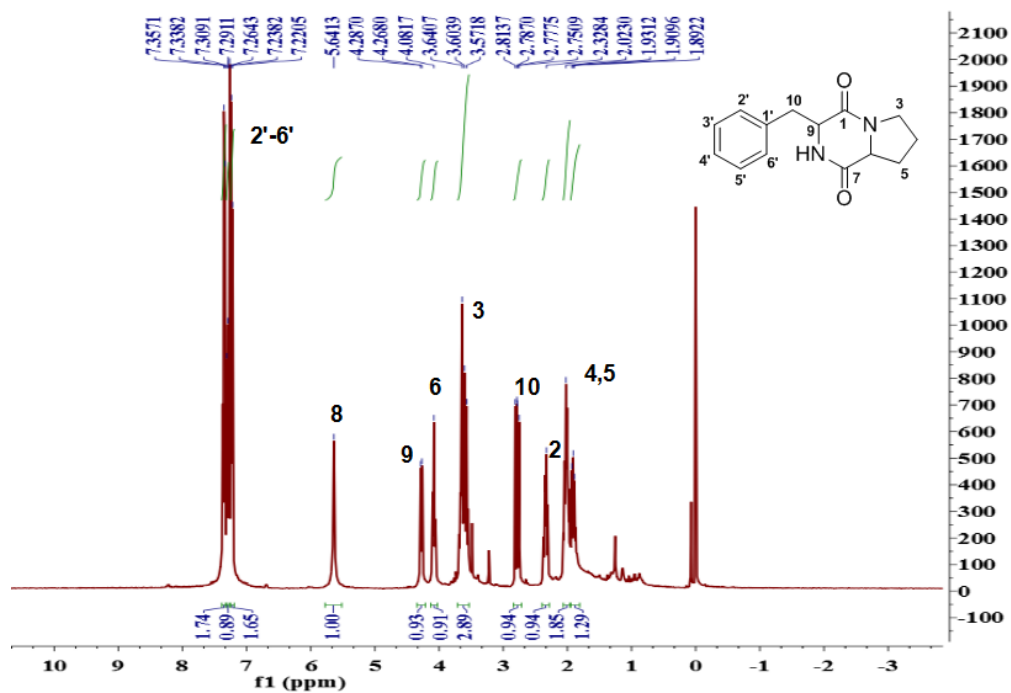


Figure S1. ^1H NMR spectra of compound 4.

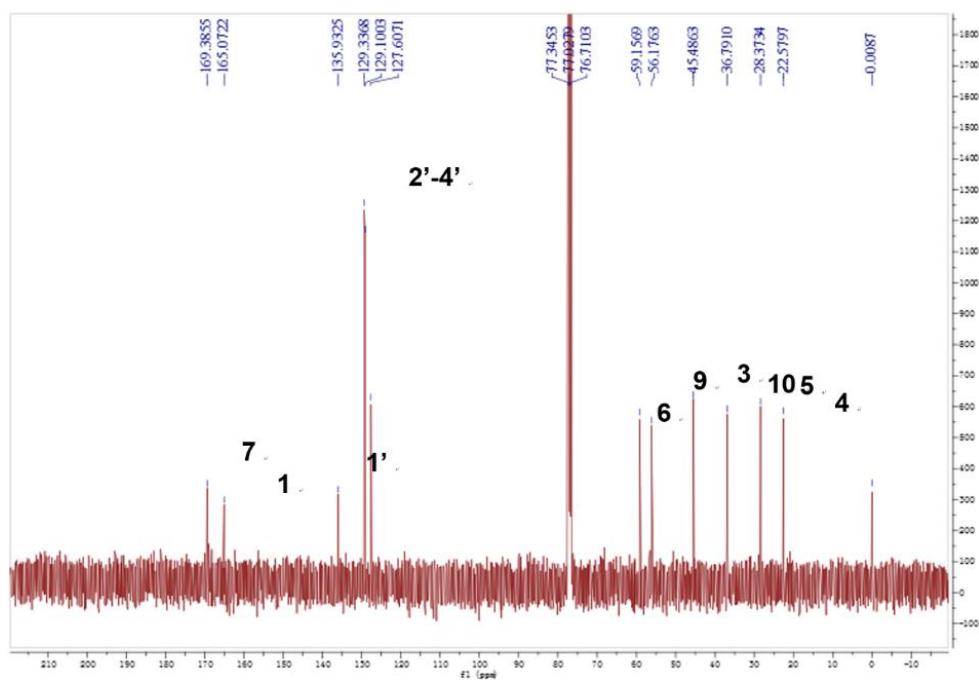


Figure S2. ^{13}C NMR spectra of compound 4.

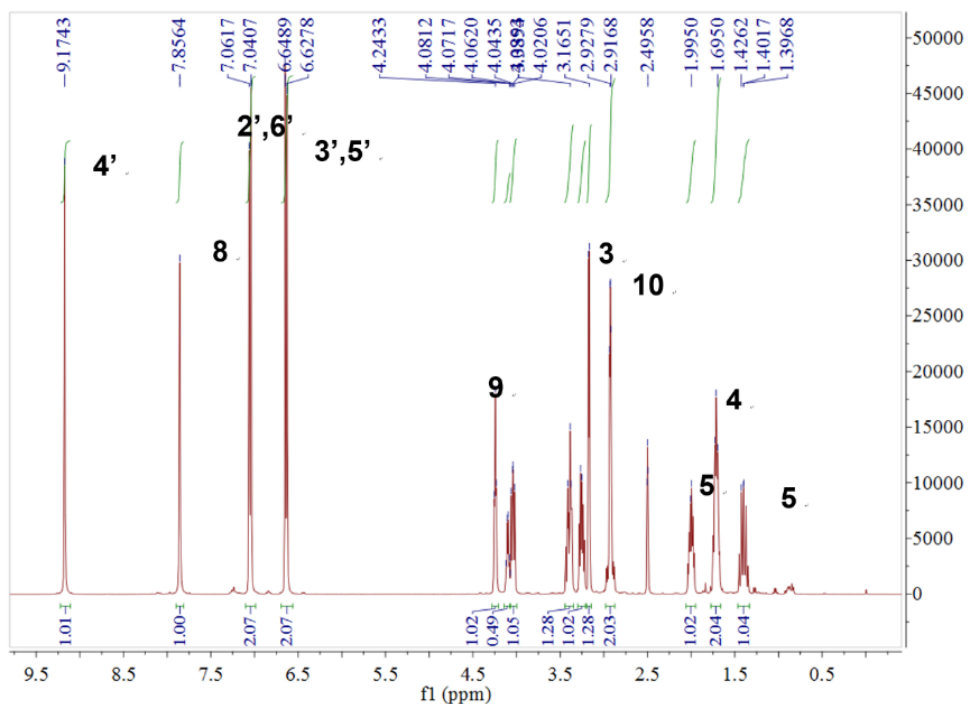


Figure S3. ^1H NMR spectra of compound 1.

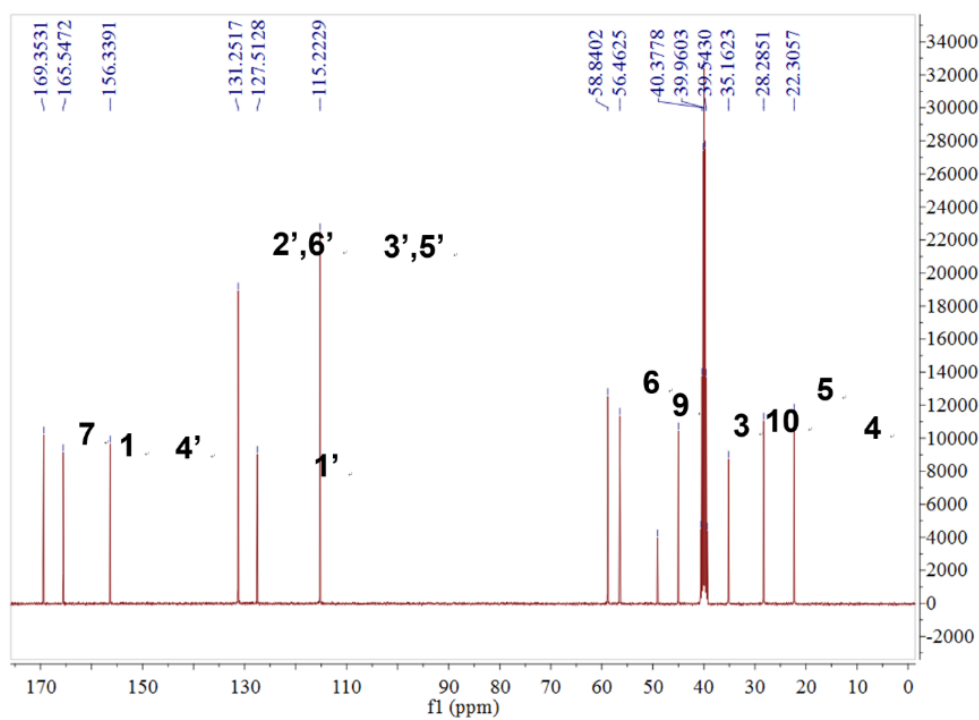
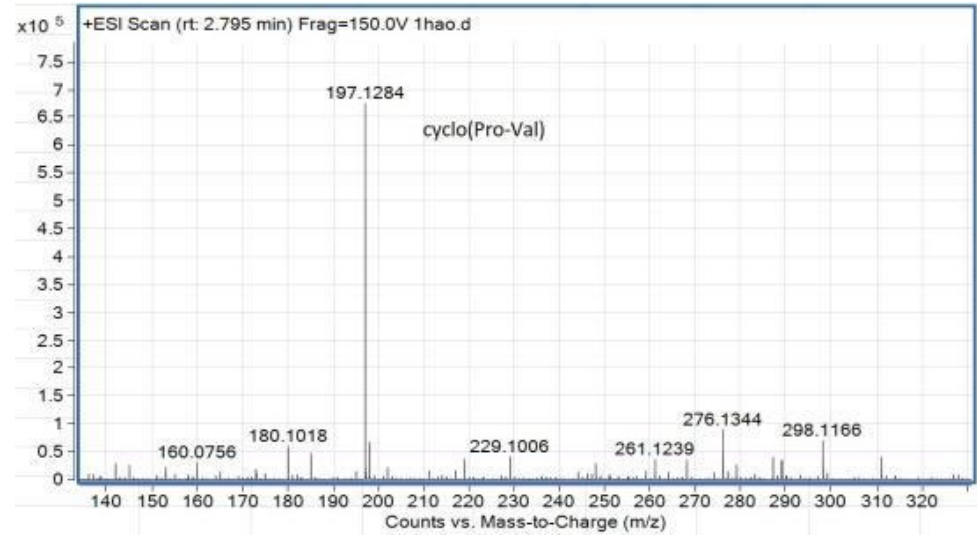
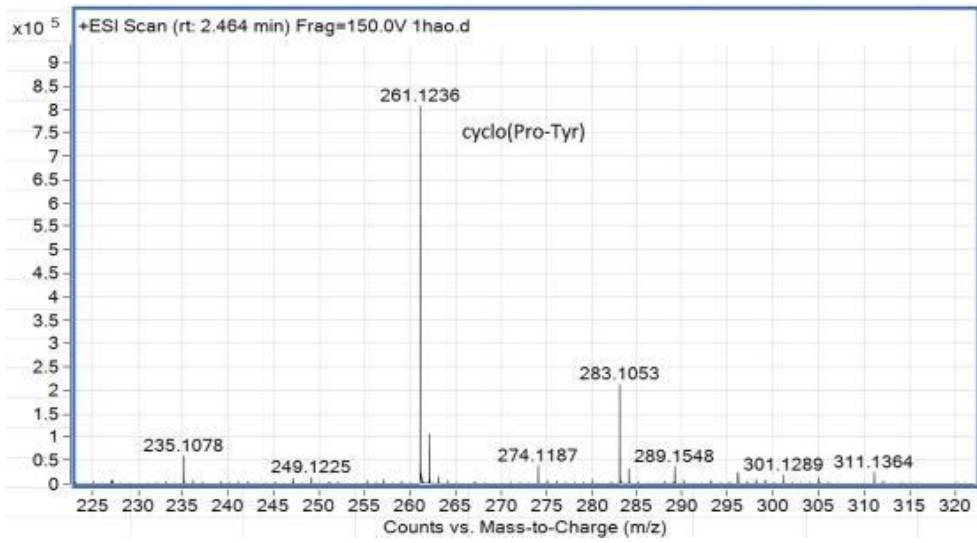
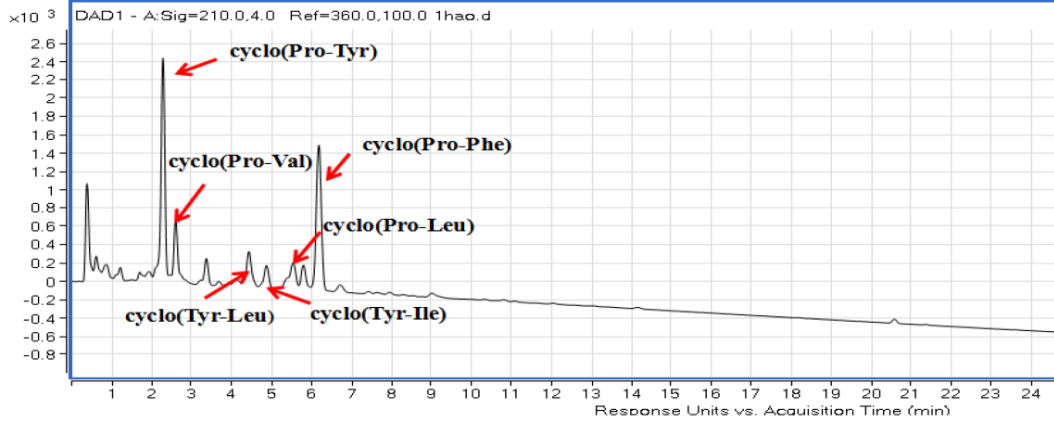
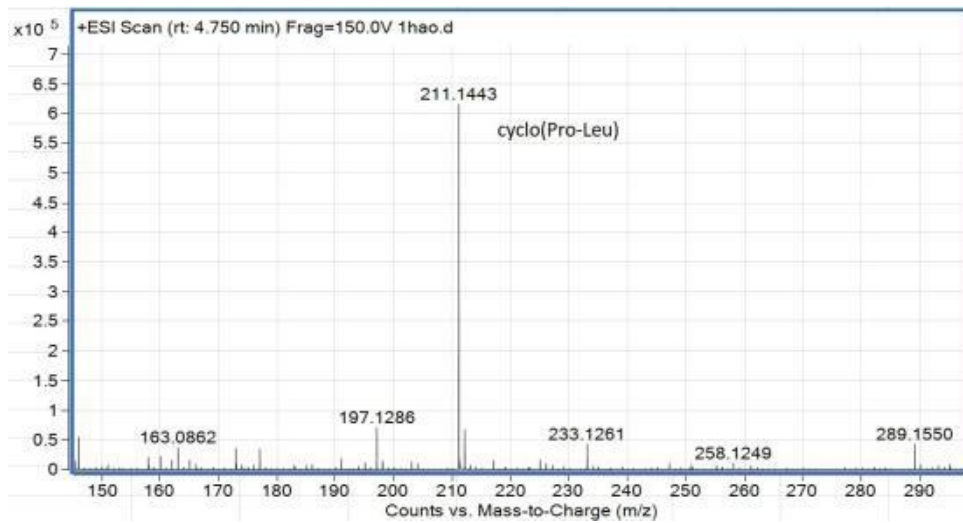
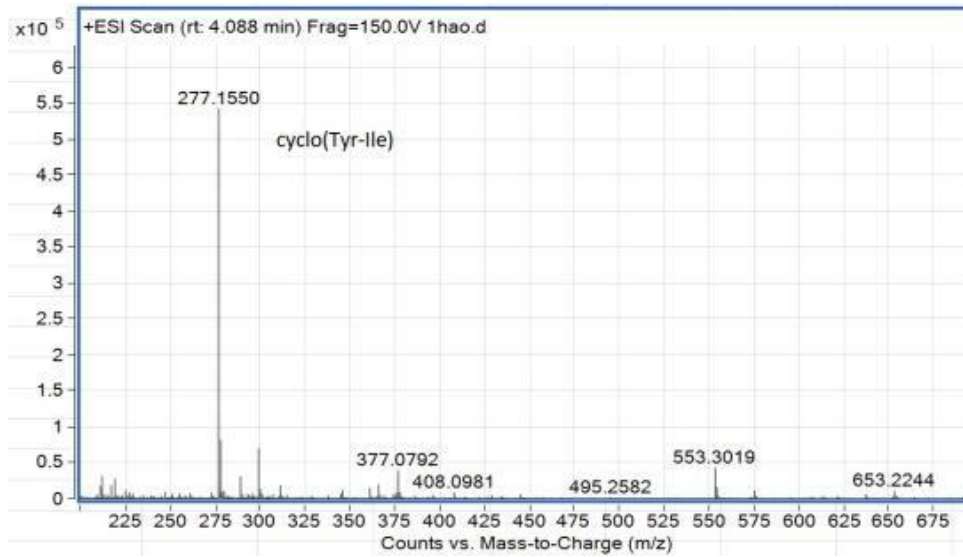
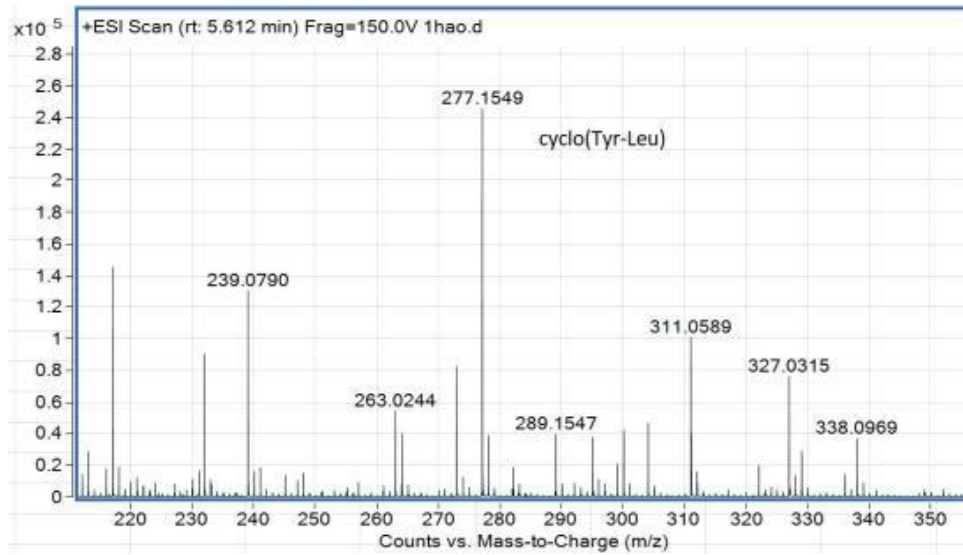


Figure S4. ^{13}C NMR spectra of compound 1.





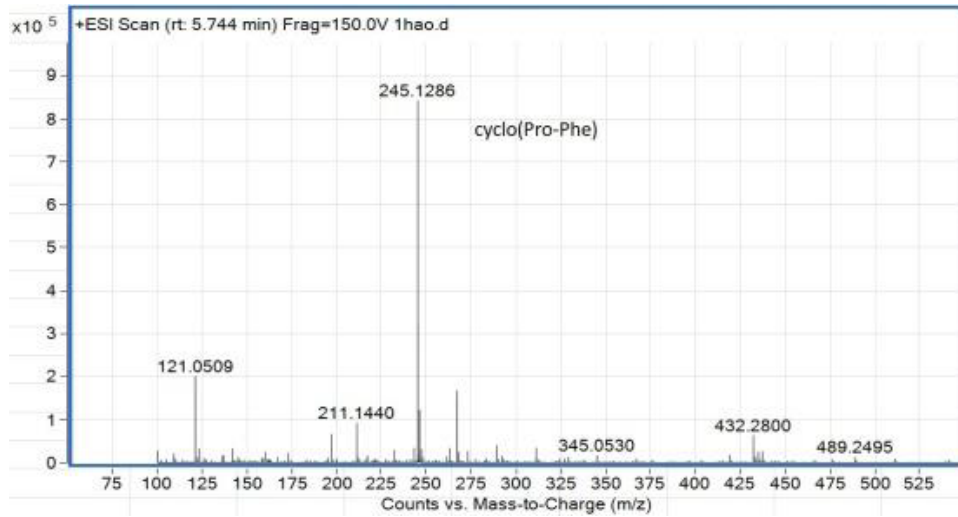


Figure S5. UPLC-MS spectra of fermentation broth extracts and identification of each compound.

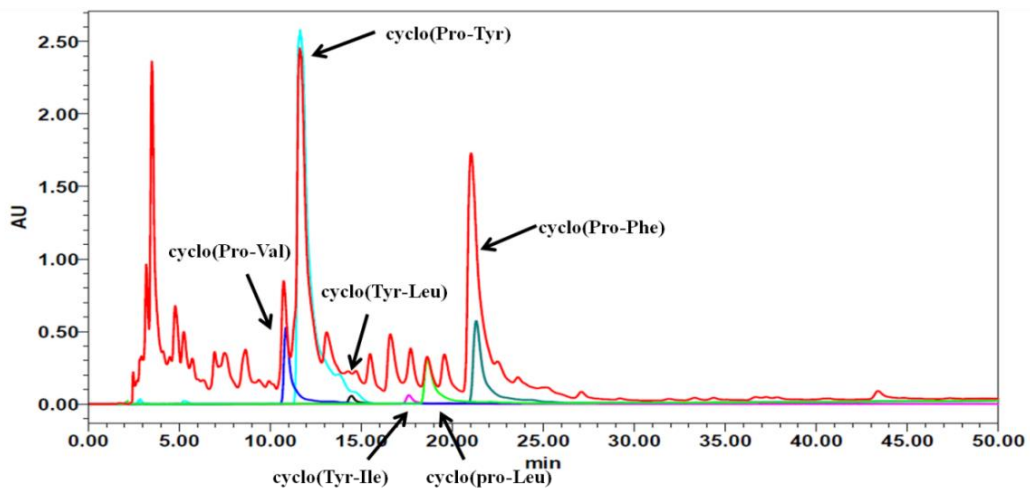


Figure S6. HPLC analysis of signaling molecules.



Figure S7. Agarose electrophoresis of the PCR-amplified NRPSs fragment. M: DNA marker DL2000; 1-2: blank control; 3-4: partial NRPSs gene fragment.



Figure S8. Agarose electrophoresis of PCR-amplified *NRPSs* fragment from the recombinant plasmid. M: DNA marker DL2000; 1-2: blank control; 3-4: partial *NRPSs* gene fragment.

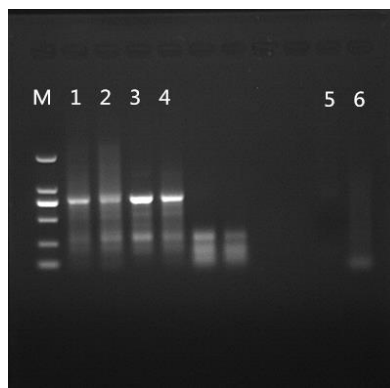


Figure S9. The identification of mutant using PCR. M: DNA marker DL2000; 1-4: Amplification of *NRPSs* fragment using genomic DNA of *Serratia odorifera* as template; 5-6: Amplification of *NRPSs* fragment using genomic DNA of *Serratia odorifera* mutant as template.