

Supporting Information

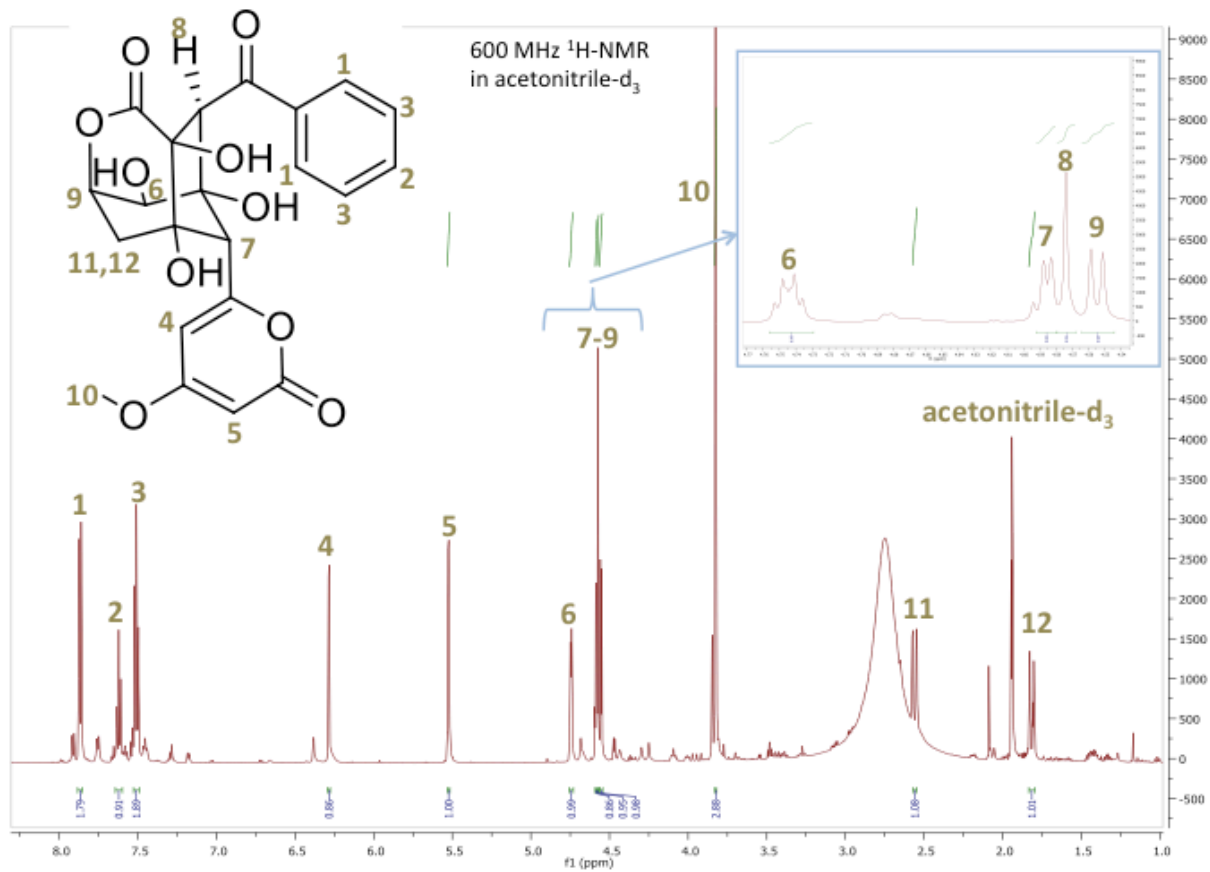
Direct Capture and Heterologous Expression of *Salinispora* Natural Product Genes for the Biosynthesis of Enterocin

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Moore^{*†‡}*

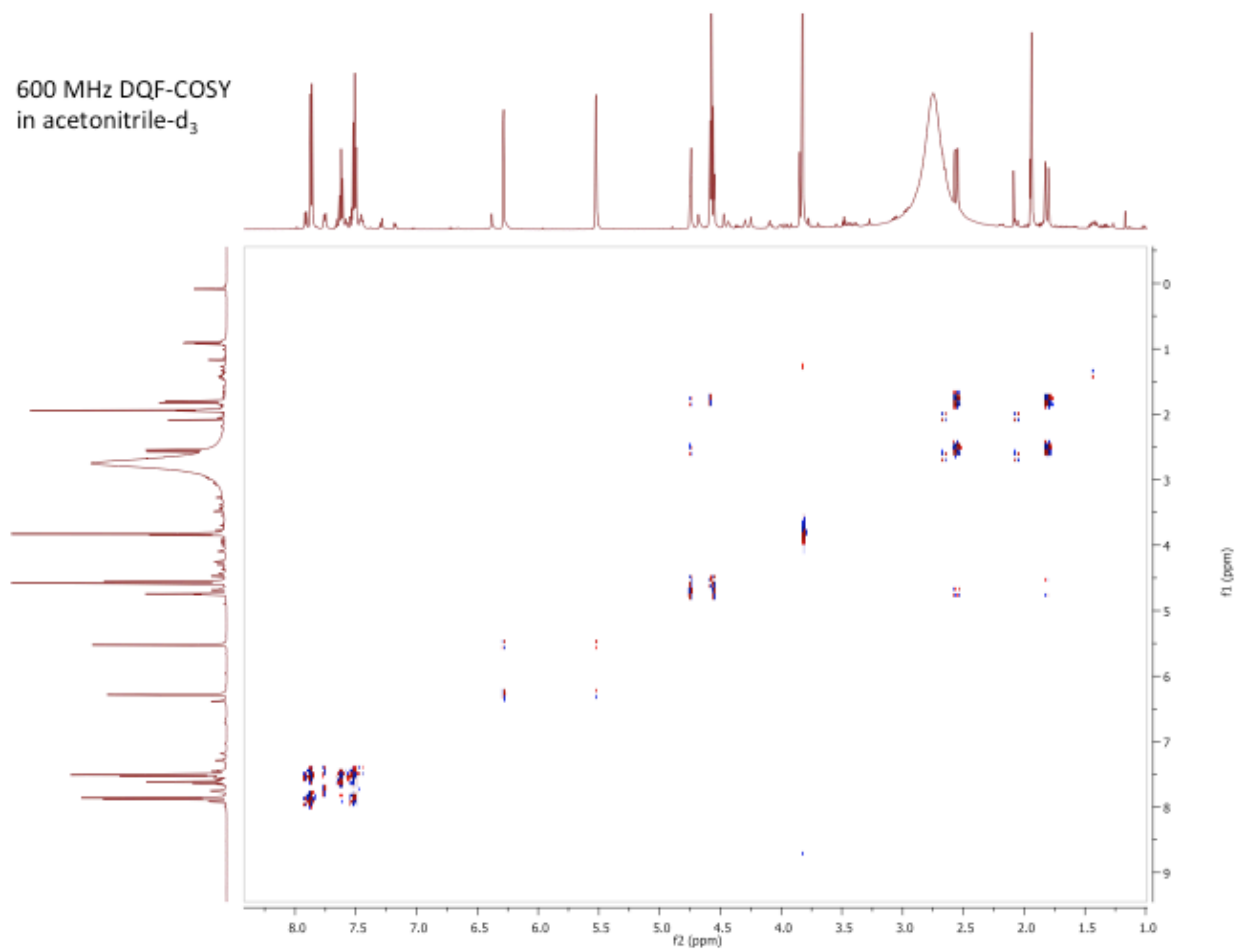
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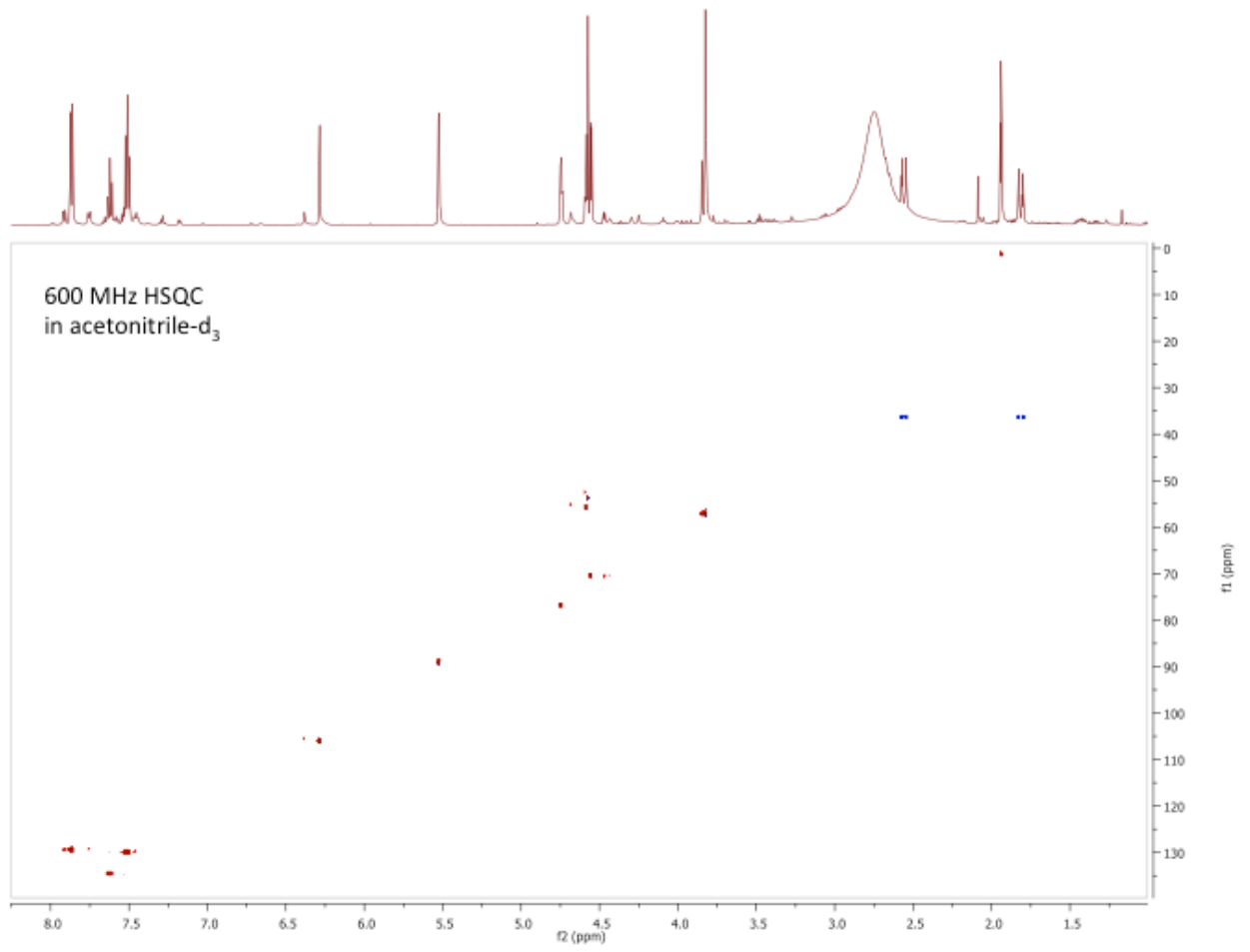
Figures S1-S4 NMR spectra of enterocin isolated from *Salinispora pacifica* CNT-150.

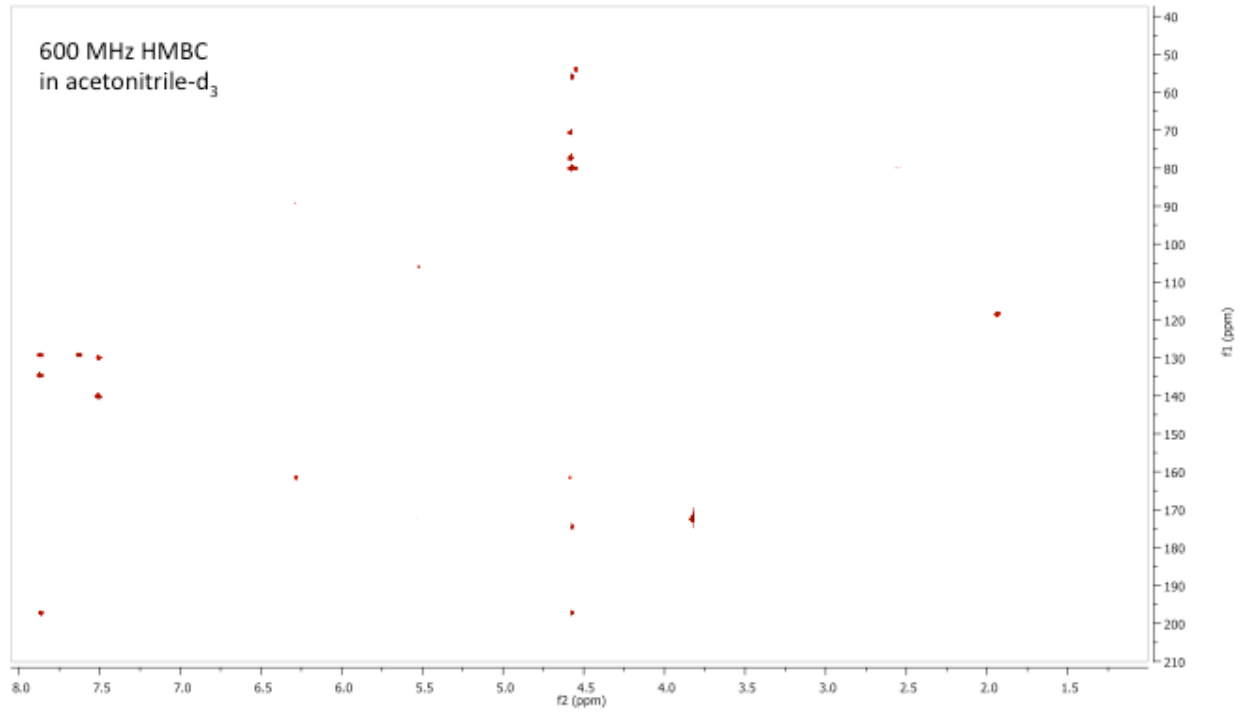
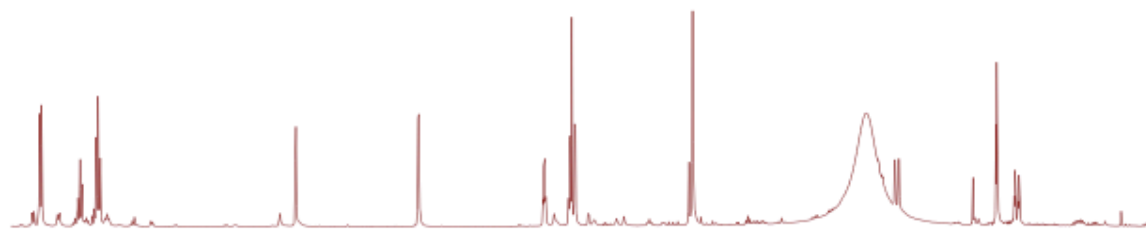
All spectra were recorded on a Bruker DRX-600.



600 MHz DQF-COSY
in acetonitrile-d₃







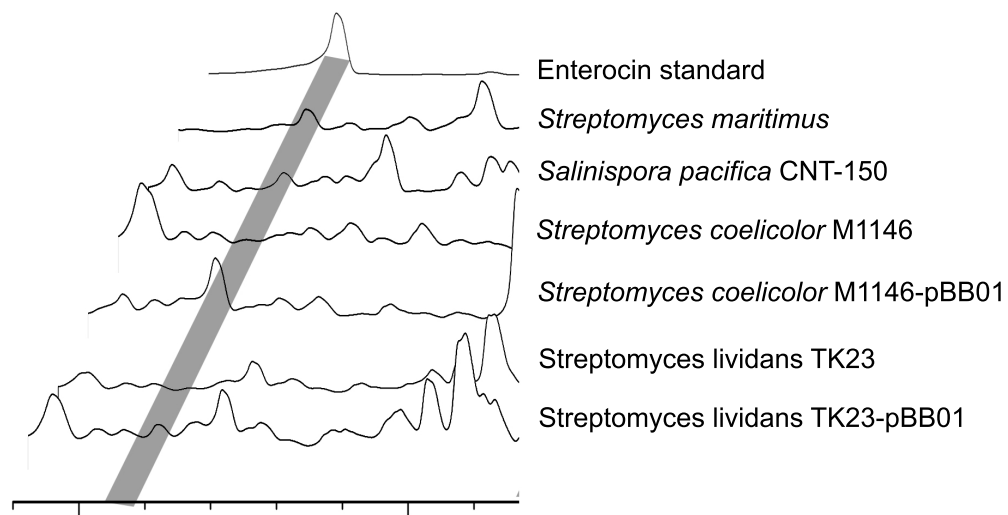


Figure S5 Heterologous expression of enterocin. HPLC chromatograms of extracts of the heterologous host *Streptomyces coelicolor* M1146 and *Streptomyces lividans* TK23 with and without the expression plasmid pBB01 as well as the natural producer strains *Streptomyces maritimus* and *Salinispora pacifica* CNT-150. Detection at 254 nm.

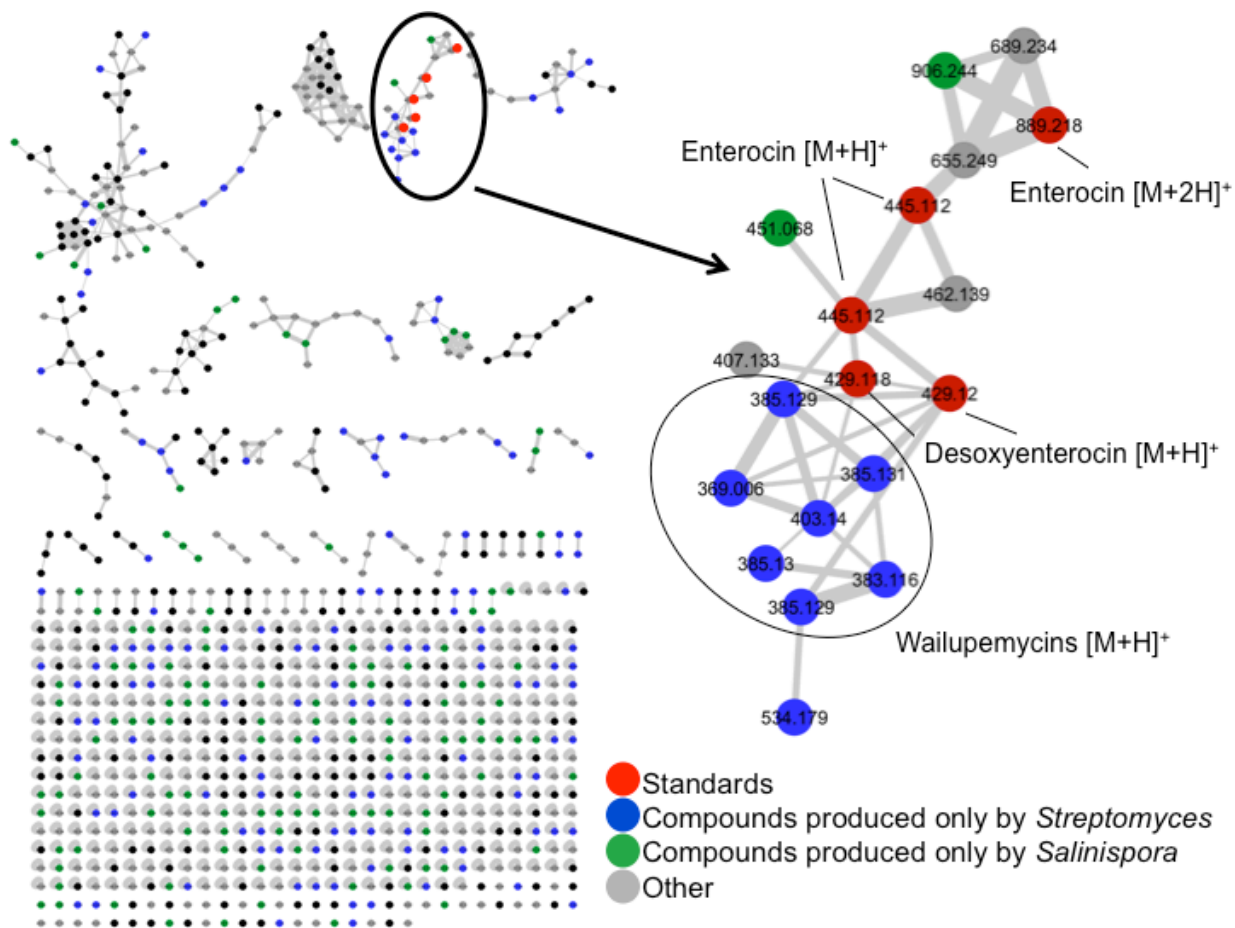


Figure S6 Molecular network of extracts from *S. coelicolor* M1146, *S. pacifica* CNT150, *S. maritimus*, and *S. coelicolor* M1146/ pBB01. Highlighted is the metabolite cluster containing enterocin and analogues.

Table S1 Strains and Plasmids used in this study.

<i>E. coli</i> Top 10	Host strain for cloning,	Invitrogen
<i>E. coli</i> ET 12567	DNA methylation deficient donor strain for conjugation	1
<i>E. coli</i> BW25113	K-12 BD792 derivative used for lambda red recombination	2
<i>S. cerevisiae</i> VL6-48	Host strain for <i>in vivo</i> homologous recombination	ATCC MYA3666
<i>S. pacifica</i> CNT-150	Marine actinomycete, enterocin producer	3
<i>S. lividans</i> TK23	Host strain for heterologous expression	4
<i>S. coelicolor</i> M1146	Host strain for heterologous expression derived from <i>S. coelicolor</i> M145: Δact , Δred , Δcpk , Δcda .	5
pCAP01	Capture vector for TAR cloning.	6
pBB01	pCAP01 derivative that carries 21kb genomic region containing the entire <i>enc</i> cluster (<i>enc</i> 1-16)	This study
pBB01 Δ 16	pBB01 derived ($\Delta enc16$): <i>enc</i> 1-15, <i>aac</i> (3)IV	This study

Reference list for supporting information

- (1) MacNeil, D. J.; Gewain, K. M.; Ruby, C. L.; Dezeny, G.; Gibbons, P. H.; MacNeil, T. *Gene* **1992**, *111*, 61–68.
- (2) Baba, T.; Ara, T.; Hasegawa, M.; Takai, Y.; Okumura, Y.; Baba, M.; Datsenko, K. A.; Tomita, M.; Wanner, B. L.; Mori, H. *Mol. Syst. Biol.* **2006**, *2*, 2006-2008.
- (3) Ziemert, N.; Lechner, A.; Wietz, M.; Millán-Aguiñaga, N.; Chavarria, K. L.; Jensen, P. R. *Proc. Natl. Acad. Sci. U. S. A.* **2014**, *111*, E1130–E1139.
- (4) Labes, G.; Bibb, M.; Wohlleben, W. *Microbiology* **1997**, *143* (Pt 5), 1503–1512.
- (5) Gomez-Escribano, J. P.; Bibb, M. J. *Microb. Biotechnol.* **2011**, *4*, 207–215.
- (6) Yamanaka, K.; Reynolds, K. A.; Kersten, R. D.; Ryan, K. S.; Gonzalez, D. J.; Nizet, V.; Dorrestein, P. C.; Moore, B. S. *Proc. Natl. Acad. Sci.* **2014**, *111*, 1957–1962.