Fermentation in Minimal Media and Fungal Elicitation Enhance Violacein and Deoxyviolacein Production in Two *Janthinobacterium* Strains

SUPPLEMENTAL INFORMATION

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Supplementary Table S1. Yield of violacein and deoxyviolacein in *J. lividum* and *J. agaricidamnosum*

(a)

Identified secondary metabolite regions using strictness 'relaxed'

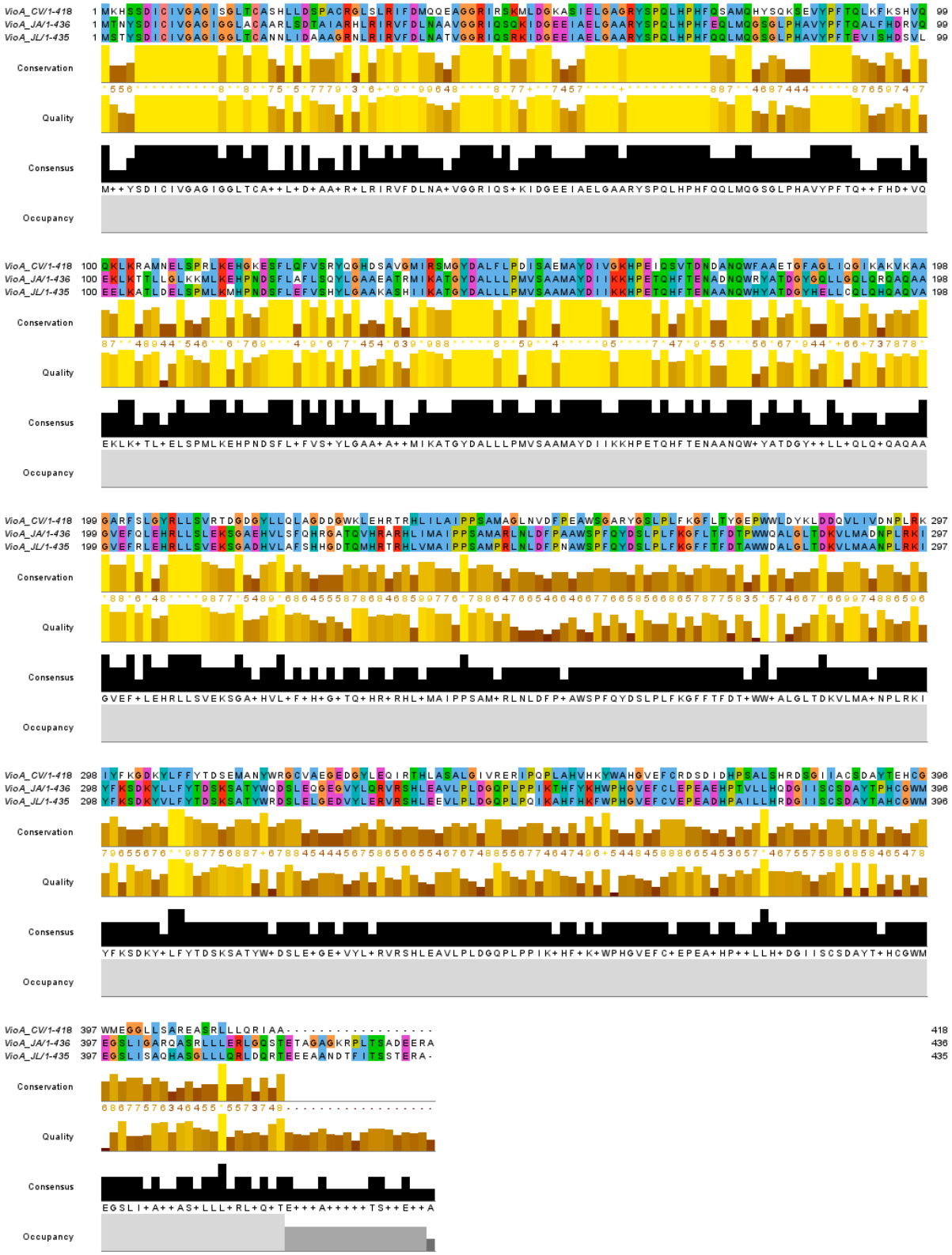
Region	Type	From	To	Most similar known cluster		Similarity
Region 5.1	NRPS	358	68,026	crochelin A	NRP + Polyketide	42%
Region 15.1	RiPP-like	45,112	56,755			
Region 19.1	NRPS	1	36,692			
Region 19.2	thiopeptide	65,990	105,670			
Region 19.3	RiPP-like	111,176	122,027			
Region 32.1	terpene	49,091	70,832			
Region 39.1	acyl_amino_acids	35,199	86,595	O-antigen	Saccharide	14%
Region 60.1	indole	2,716	25,766	violacein	Alkaloid	100%
Region 69.1	NRPS, T1PKS	1	46,113			
Region 79.1	NRPS	1	24,487	lysocin	NRP	9%
Region 91.1	NRPS	14,036	59,590	jagaricin	NRP	46%
Region 93.1	RiPP-like	1	5,933			
Region 95.1	NRPS	13,157	52,116	myxochelin A / myxochelin B	NRP	41%
Region 156.1	NRPS-like	1	1,701	rhizomide A / rhizomide B / rhizomide C	NRP	100%

(b)

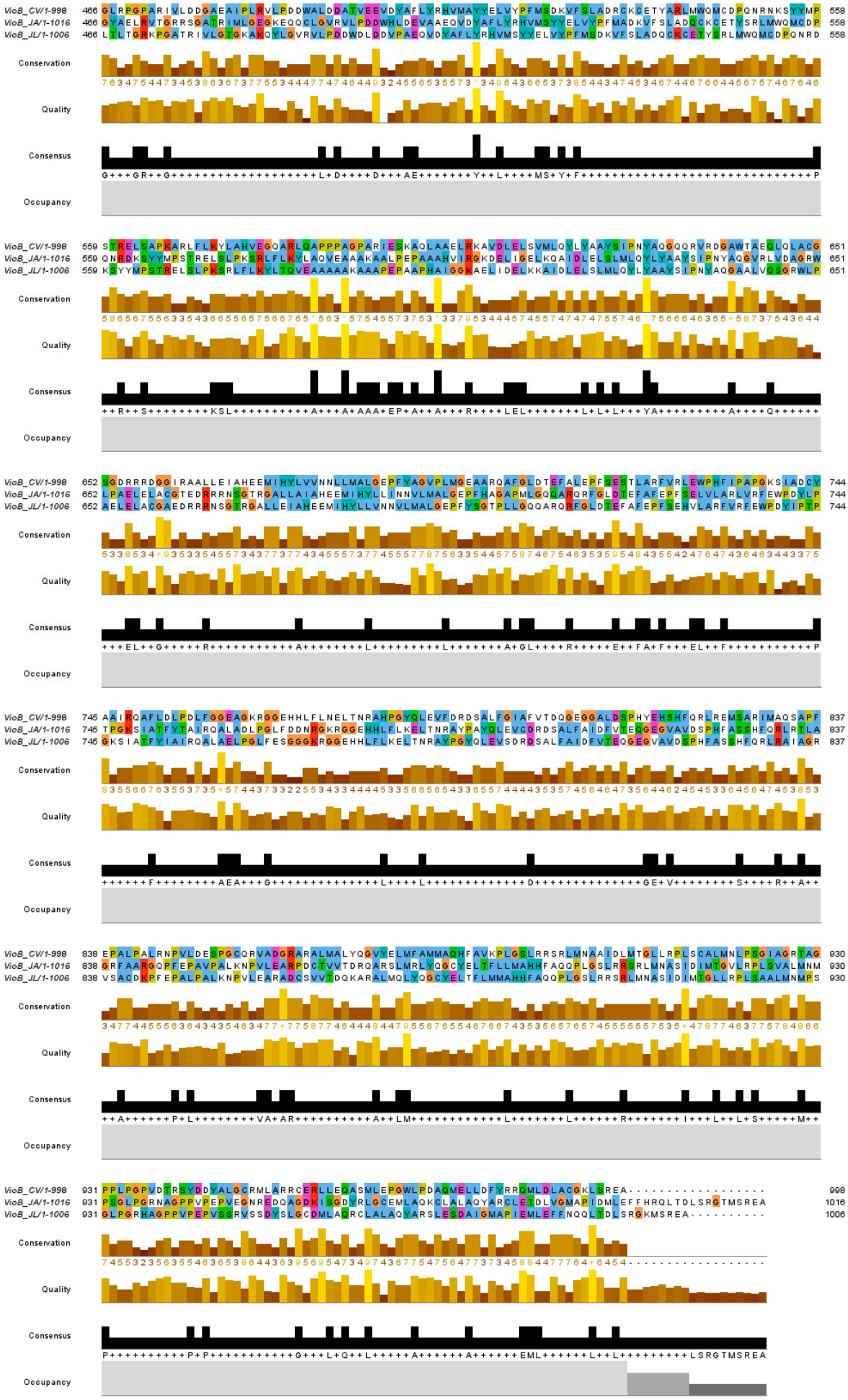
Identified secondary metabolite regions using strictness 'relaxed'

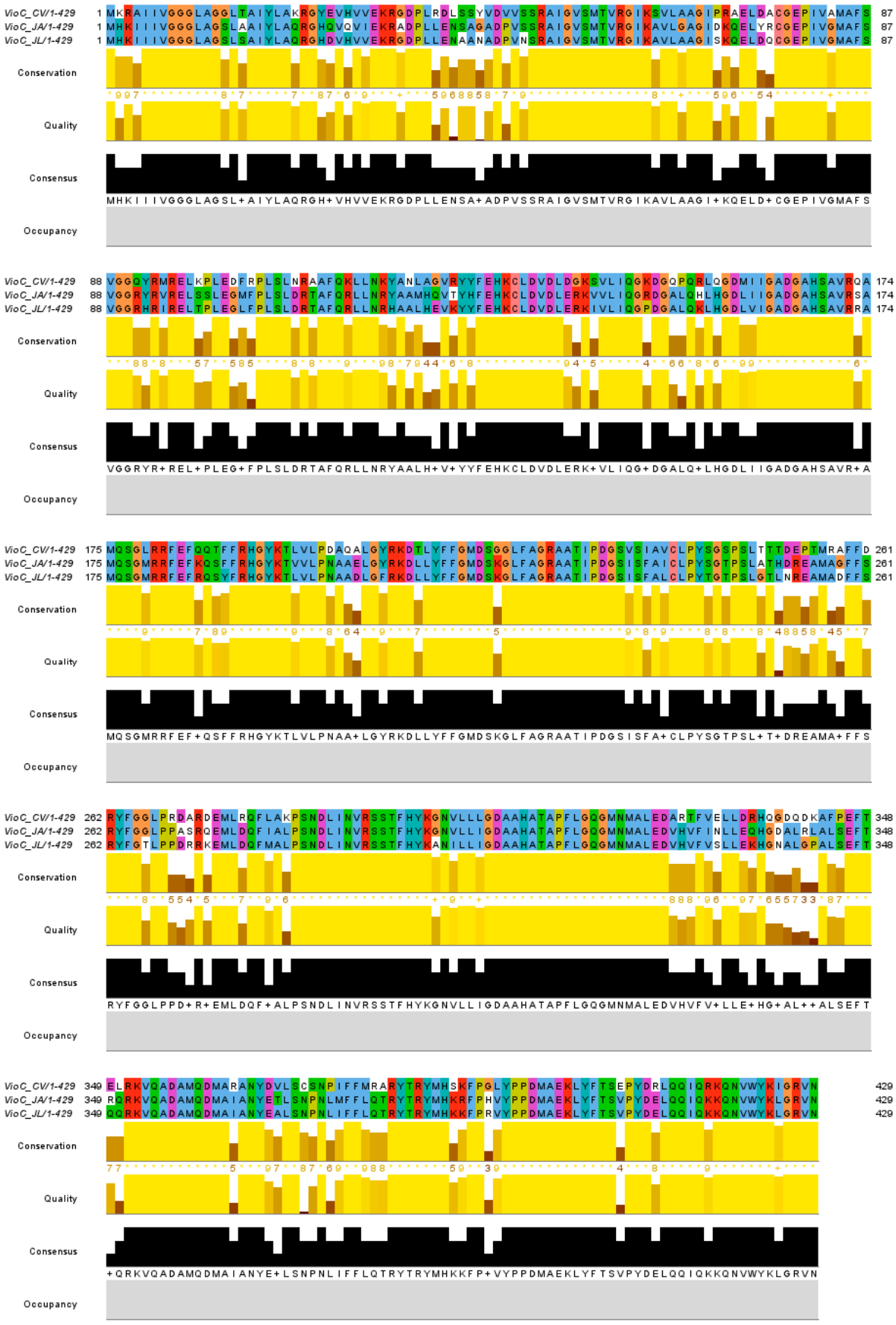
Region	Type	From	To	Most similar known cluster		Similarity
Region 3.1	RiPP-like	12,988	23,917			
Region 8.1	NRPS	1	4,167	cupriachelin	NRP:NRP siderophore	17%
Region 10.1	NRPS	1	6,465	BE-43547A1 / BE-43547A2 / BE-43547B1 / BE-43547B2 / BE-43547B3 / BE-43547C1 / BE-43547C2	NRP:Cyclic depsipeptide + Polyketide:Modular type I	20%
Region 26.1	T1PKS	31,020	62,781	enacyloxin IIa	NRP + Polyketide	25%
Region 37.1	thioamide-NRP, acyl_amino_acids	1	80,898	O-antigen	Saccharide	14%
Region 38.1	NRPS-like	1	10,869	cupriachelin	NRP:NRP siderophore	35%
Region 49.1	terpene	2,379	24,140			
Region 53.1	RiPP-like	97,971	108,825	burkholderic acid	NRP + Polyketide:Modular type I	6%
Region 54.1	indole	6,357	29,377	violacein	Alkaloid	100%
Region 59.1	RiPP-like	65,691	77,313			
Region 61.1	RiPP-like	89,267	100,127			
Region 78.1	T1PKS, transAT-PKS-like, hserlactone	1	63,982	enacyloxin IIa	NRP + Polyketide	58%
Region 94.1	hserlactone	1	6,477			
Region 96.1	NRPS	1	3,157			

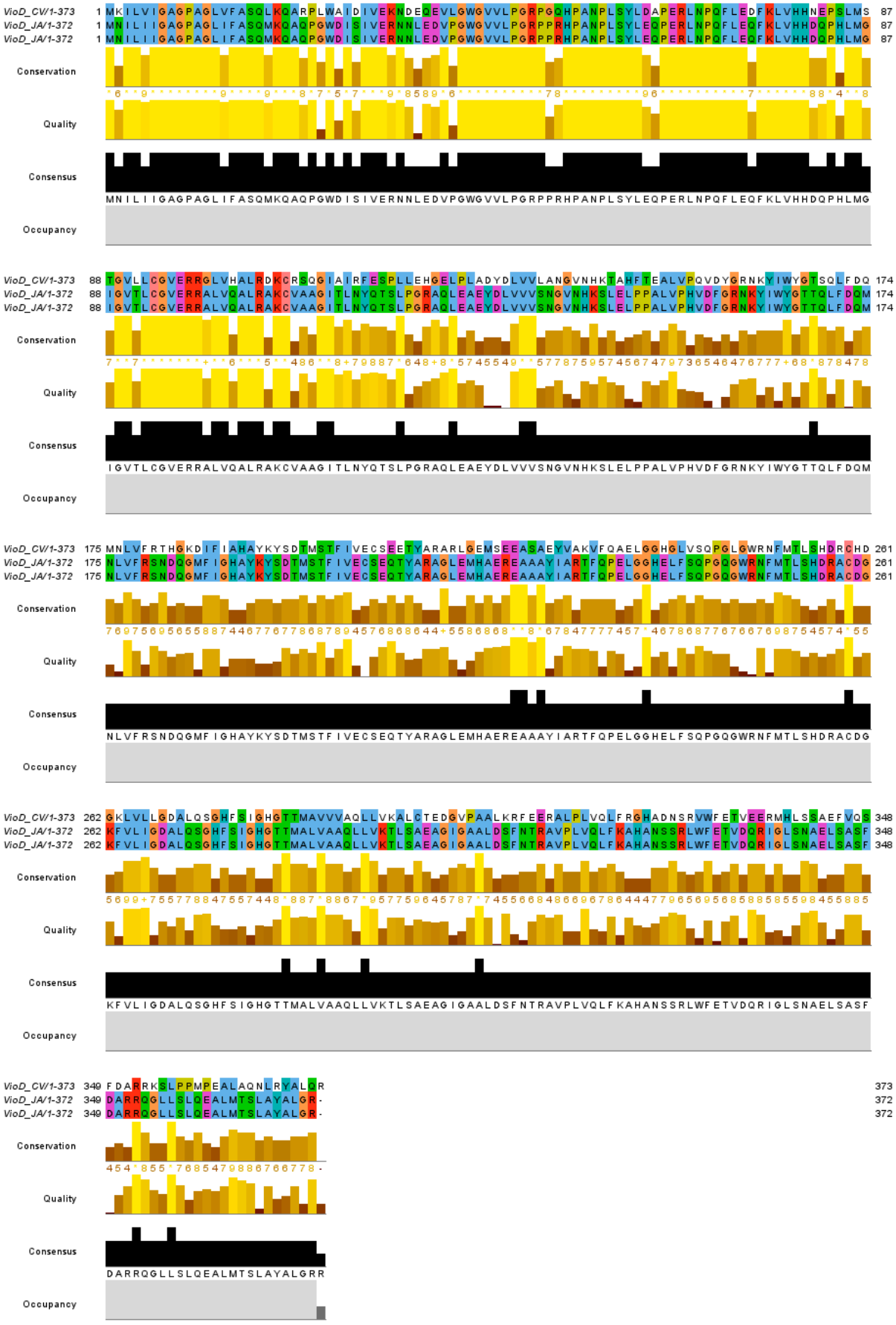
Suplementary Figure S1. Biosynthetic Gene Clusters (BGCs) found in *Janthinobacterium agaricidamnosum* DSM 9628 and *J. lividum* DSM 1552 through antiSMASH v6.0 analysis.

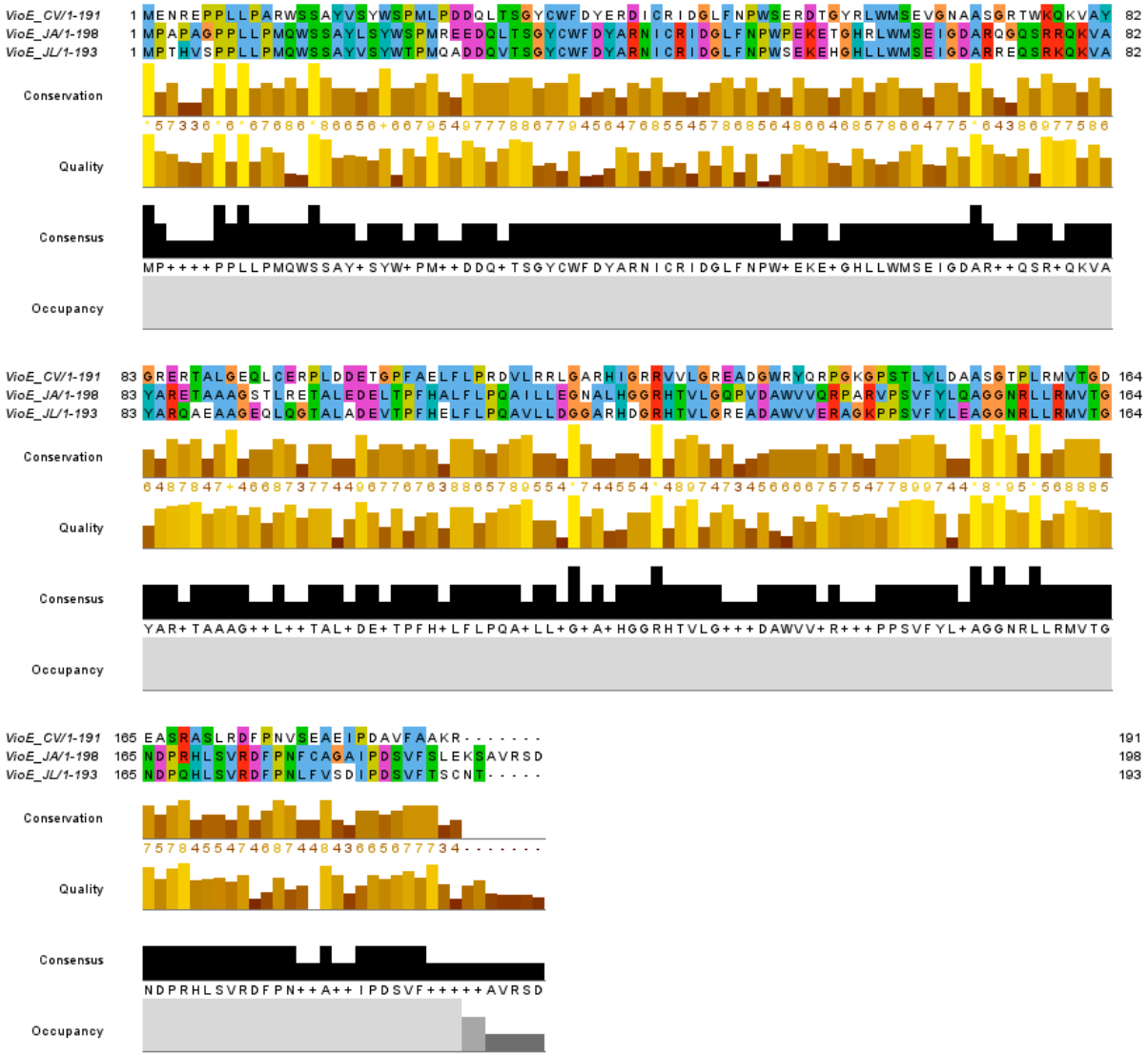

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VioA_JA1-436
VioA_JL1-435
Conservation
Quality
Consensus
Occupancy


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VioB_JA1-1016
VioB_JL1-1006
Conservation
Quality
Consensus
Occupancy
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VioB_CW1-998
VioB_JA1-1016
VioB_JL1-1006
Conservation
Quality
Consensus
Occupancy

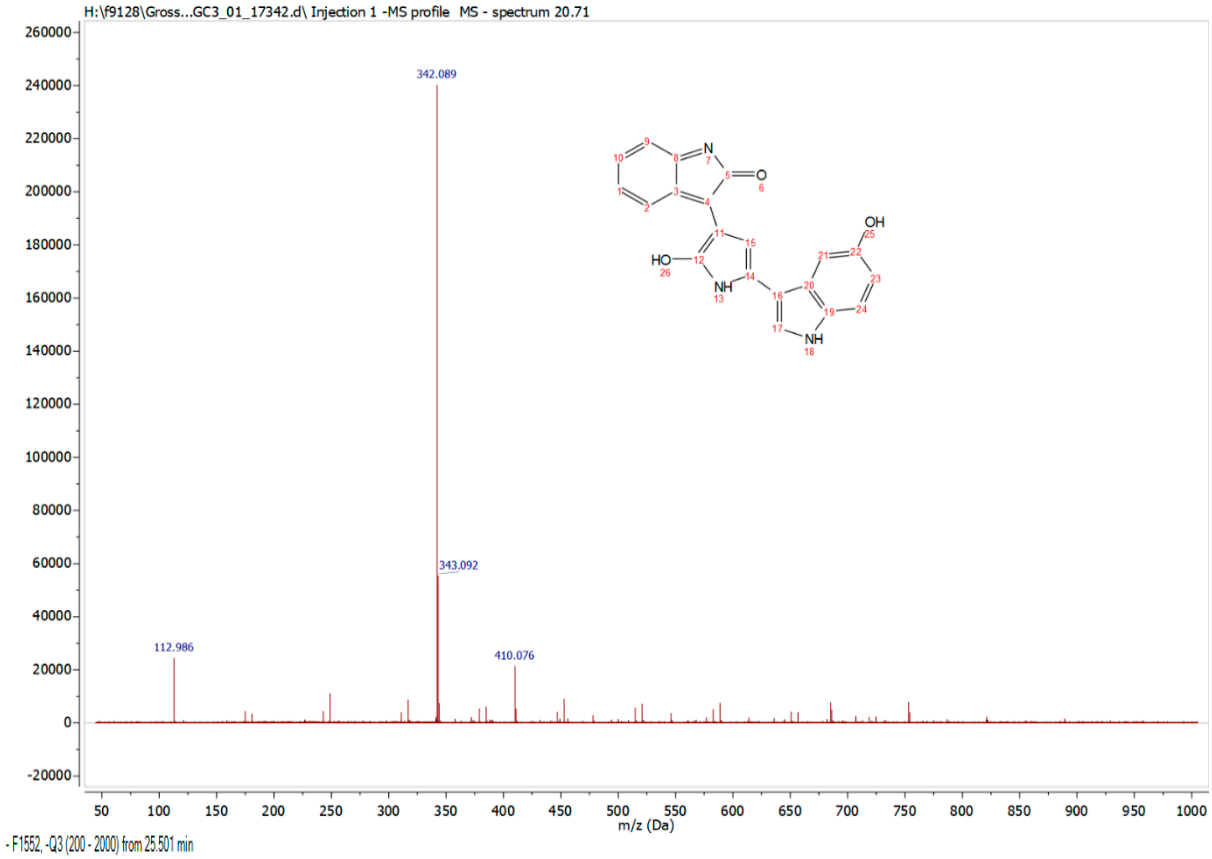

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Conservation
Quality
Consensus
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Occupancy
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Conservation
Quality
Consensus
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Quality
Consensus
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Conservation
Quality
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Occupancy

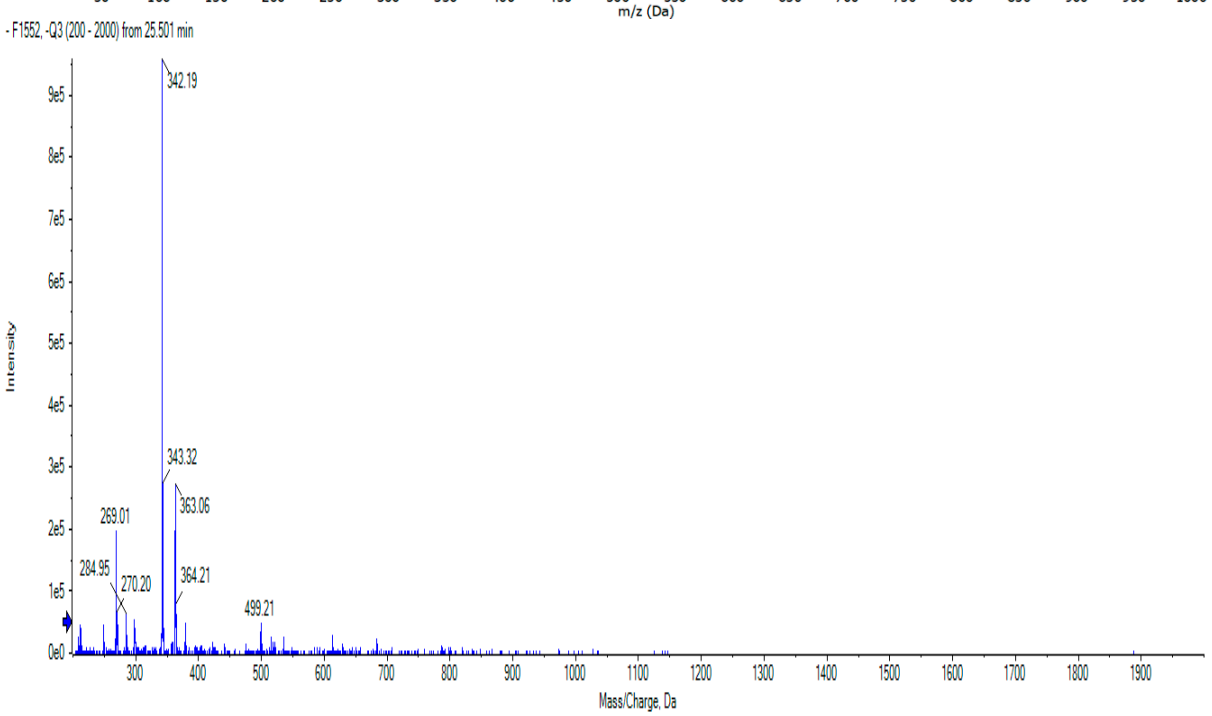

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Quality
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Quality
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Occupancy
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Quality
Consensus
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Quality
Consensus
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Occupancy



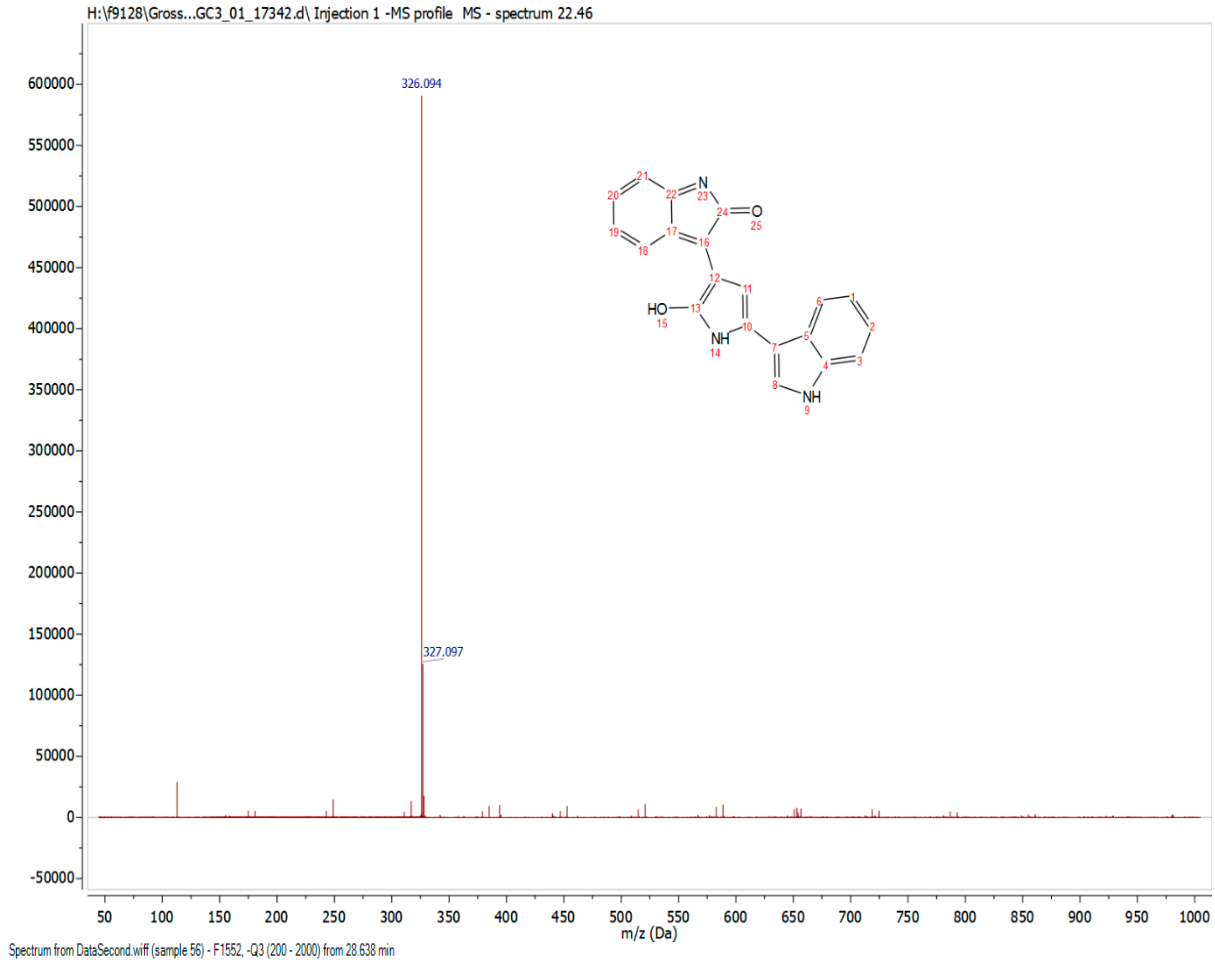
Suplementary Figure S2. Amino acid sequence alignment between *violacein ABCDE* operon in *Chromobacterium violaceum* ATCC 12472 with *J. agaricidamnosum* DSM 9628 and *Janthinobacterium lividum* DSM 1552.

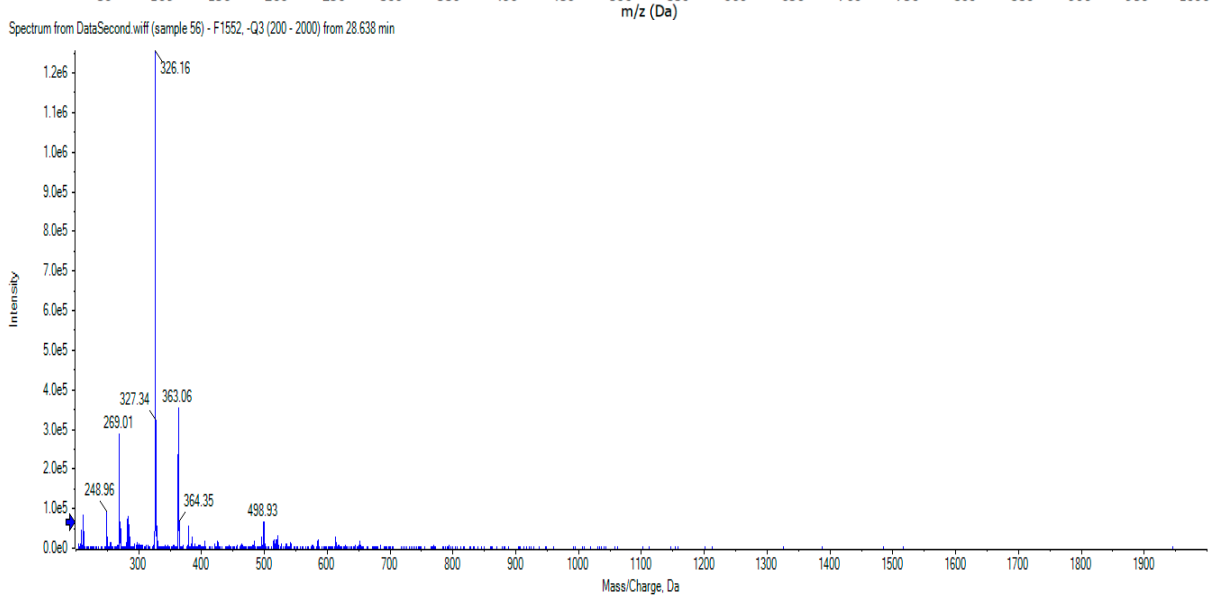
(a)


H:\f9128\Gross...GC3_01_17342.d\ Injection 1 -MS profile MS - spectrum 20.71
342.089
343.092
112.986
410.076
m/z (Da)


- F1552, -Q3 (200 - 2000) from 25.501 min
342.19
343.32
363.06
269.01
284.95
270.20
364.21
499.21
Intensity
Mass/Charge, Da

(b)





Supplementary Figure S3. Extracted ion chromatograms (EIC) of violacein (A) and deoxyviolacein (B) in *J. lividum***.** Red EIC was collected from high-resolution ESI-MS, and blue EIC was collected from low-resolution ESI-MS. Note: violacein and deoxyviolacein in *J. lividum, J. agaricidamnosum*, and mixed pure compounds has a similar EIC.

Supplementary Table S1. Production of violacein and deoxyviolacein in *J. lividum* and *J. agaricidamnosum*.

Violacein

Media	JL (control)	JA (control)	JL (+fungi)	JA (+fungi)	JA (+agitation)	JL (+agitation)
LB	0.180 ± 0.010	0.180 ± 0.090	0.320 ± 0.070	0.410 ± 0.080	0.100 ± 0.010	0.100 ± 0.010
NB	0.210 ± 0.110	0.220 ± 0.120	0.200 ± 0.100	0.200 ± 0.090	0.100 ± 0.100	0.170 ± 0.100
KB	0.211 ± 0.100	0.240 ± 0.001	0.140 ± 0.090	0.120 ± 0.021	0.130 ± 0.090	0.100 ± 0.090
DMBgly	10.890 ± 0.100	9.800 ± 0.300	6.670 ± 0.150	6.290 ± 0.100	1.740 ± 0.150	1.330 ± 0.100
MDMBgly	11.670 ± 0.300	9.230 ± 0.340	6.622 ± 0.310	6.360 ± 0.220	2.000 ± 0.200	1.400 ± 0.200
SBM	8.300 ± 0.340	7.430 ± 0.330	3.450 ± 0.210	2.990 ± 0.320	1.670 ± 0.140	1.430 ± 0.150
MSBM	8.410 ± 0.230	7.340 ± 0.110	3.468 ± 0.230	3.210 ± 0.220	1.150 ± 0.020	1.230 ± 0.040
MM9	6.100 ± 0.100	5.500 ± 0.210	5.990 ± 0.100	4.760 ± 0.223	0.980 ± 0.010	0.770 ± 0.020

Deoxyviolacein

Media	JL (control)	JA (control)	JL (+fungi)	JA (+fungi)	JA (+agitation)	JL (+agitation)
LB	0.090 ± 0.010	0.090 ± 0.010	0.160 ± 0.010	0.130 ± 0.020	0.100 ± 0.010	0.100 ± 0.010
NB	0.080 ± 0.000	0.080 ± 0.010	0.100 ± 0.010	0.140 ± 0.010	0.100 ± 0.010	0.150 ± 0.010
KB	0.000 ± 0.000	0.000 ± 0.000	0.140 ± 0.010	0.150 ± 0.010	0.080 ± 0.010	0.090 ± 0.010
DMBgly	1.170 ± 0.090	0.820 ± 0.092	0.690 ± 0.010	0.650 ± 0.030	0.430 ± 0.010	0.450 ± 0.030
MDMBgly	0.940 ± 0.090	0.770 ± 0.070	0.740 ± 0.010	0.730 ± 0.010	0.433 ± 0.010	0.330 ± 0.010
SBM	0.430 ± 0.080	0.320 ± 0.077	0.550 ± 0.010	0.450 ± 0.012	0.090 ± 0.010	0.029 ± 0.012
MSBM	0.350 ± 0.073	0.267 ± 0.110	0.670 ± 0.110	0.690 ± 0.120	0.020 ± 0.001	0.034 ± 0.001
MM9	0.900 ± 0.090	0.560 ± 0.080	0.760 ± 0.110	0.790 ± 0.030	0.230 ± 0.010	0.330 ± 0.020

JL: *Janthinobacterium lividum*

JA: *Janthinobacterium agaricidamnosum*