Supplementary Material

Diversity and Antimicrobial Potential of Predatory Bacteria from the Peruvian Coastline

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Supplementary Table S1. Isolated strains that showed antibiotic activity

Strain identifier	Strain name as deposited in NCBI database	Closest 16S rRNA gene sequence hit in BLAST	Identity %	Isolation bait	Isolation site
2	Tenacibacullum sp. s2	Tenacibacullum sp. QDHT-02	99	*E. coli*	Paracas
16	Tenacibaculum sp. S16	Tenacibaculum sp. sw0106-03(3)	99	*E. coli*	Paracas
17	Kocuria rosea s17	Kocuria rosea	99	*E. coli*	Paracas
21	Reichenbachiella sp. S21	Reichenbachiella agariperforans	95	*E. coli*	Paracas
23	Oceanicola marinus s23	Oceanicola marinus Sl5	99	*E. coli*	Paracas
37	Limibacter armeniacum s37	Limibacter armeniacum YM11-159	99	*E. coli*	Paracas
42	Fulvivirga sp. s42	Fulvivirga sp. ana H.e.	99	*P. inhibens*	Isla Foca
47	Porifericola rodea s47	Porifericola rhodea	99	*P. inhibens*	Paracas
48	Fulvivirga kasyanovii s48	Fulvivirga kasyanovii	99	*P. inhibens*	Isla Foca
68	Rapidithrix sp. s68	Rapidithrix sp. TISTR 1768	99	*P. inhibens*	Paracas
80	Rapidithrix sp s80	Rapidithrix sp. TISTR 1768	99	*P. inhibens*	Paracas
82	Labrenzia sp. strain s82	Labrenzia sp. strain 1334-392	98	*E. coli*	Paracas
83	Microbulbifer hydrolyticus s83	Microbulbifer hydrolyticus strain DSM 11525	99	*E. coli*	Manglares
90	Bacillus sp. s90	Bacillus thuringiensis serovar finitimus YBT-020	99	*P. inhibens*	Paracas
93	Labrenzia sp. s93	Labrenzia sp. R-66638	99	*E. coli*	Isla Foca
100	Nitratireductor sp. s100	Nitratireductor sp.	99	*E. coli*	Manglares
106	Staphylococcus succinus s106	Staphylococcus succinus	99	*P. inhibens*	Paracas
107	Microbulbifer sp. s107	Microbulbifer sp. CMC	99	*P. inhibens*	Manglares
108	Euzebyella sp. s108	Euzebyella sp. CY01	97	*P. inhibens*	Manglares
120	Streptomyces sp. s120	Streptomyces sp. NPA1	99	*E. coli*	Manglares
122	Nocardiopsis sp. s122	Nocardiopsis sp. 13-112	99	*E. coli*	Manglares
123	Nitratireductor sp. s123	Nitratireductor sp. OM-1	99	*E. coli*	Isla Foca
102[a]	Microbacterium sp. s102a	Microbacterium sp. CC4P	99	*P. inhibens*	Paracas
102b	Paenibacillus sp. s102b	Paenibacillus glucanolyticus strain 5162	99	*P. inhibens*	Paracas
118b	Echinicola shivajiensis s118b	Echinicola shivajiensis strain AK12	99	*E. coli*	Manglares
17_1c	Planomicrobium sp. s171c	Planomicrobium sp. PK32_S1	99	*E. coli*	Paracas
17_2c	Paracoccus sp. s172c	Paracoccus sp. MAR824	98	*E. coli*	Paracas
30b1	Ponticoccus sp. s30b1	Ponticoccus sp. strain 7002-260	100	*E. coli*	Paracas
49b1	Bacillus aquimaris s49b1	Bacillus aquimaris strain M12	99	*E. coli*	Paracas
49b2	Euzebyella sp. s49b2	Euzebyella sp. B39	99	*E. coli*	Paracas

Supplementary Table S2. Growth behavior at different NaCl concentrations

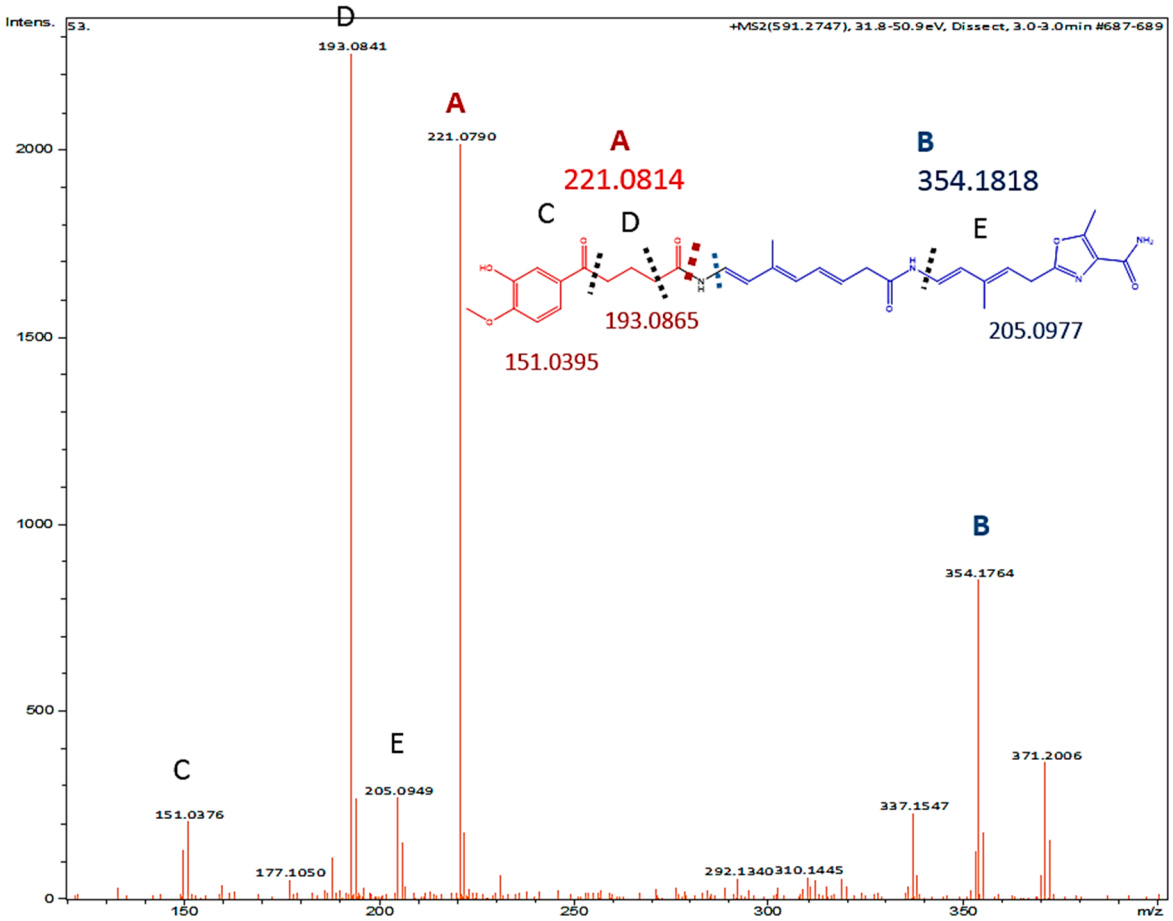
Strain identifier	% NaCl							
	0.5%	**1%**	**1.95%**	**2.14%**	**2.23%**	**3.89%**	**5%**	**10%**
2	--	++	+++	+++	++	++	--	--
16	--	+	++	+++	++	+	+	--
17	++	++	++	++	++	++	+	--
17_1c	++	++	++	++	++	++	+	--
17_2c	++	++	++	++	++	++	+	--
21	+	+	++	+++	++	++	+	+
23	--	--	--	+	++	+++	++	--
30b1	++	+++	+++	++++	+++	+++	+++	++
37	++	++	++	++	++	++	--	--
42	+	++	+++	+++	++	+	+	+
47	+	++	+++	++	++	++	--	--
48	+	++	++	++	+	--	--	--
49b1	+++	+++	+++	+++	+++	++	+	--
49b2	+	+	++	++	++	++	+	--
68	+	++	+++	+++	++	+	--	--
80	+	++	+++	+++	++	+	--	--
82	++	++	+++	+++	++	++	++	--
83	+	++	+++	+++	++	++	++	+
90	+++	+++	+++	+++	+++	+++	++	--
93	+	++	++	++	+	+	--	--
100	++	++	++	++	++	++	++	-
102a	+	++	++	++	++	+	+	+
102b	+	++	+++	+++	++	+	+	+
106	++	+++	++++	+++	+++	+++	++	++
107	+	++	+++	+++	++	+	+	+
108	+	+	++	+++	++	+	+	--
118b	--	+	++	++	+	+	+	--
120	++	++	++	++	++	++	--	--
122	+	++	++	++	++	+	+	+
123	++	+++	+++	++	++	++	+	+

Supplementary Table S3. Growth behavior at different temperatures

Strain identifier	10ºC		27 ºC		30ºC		45ºC	
	24 H	48 H	24 H	48 H	24 H	48 H	24 H	48 H
2	--	--	++	+++	++	+++	--	--
16	--	--	++	+++	++	+++	--	--
17	--	--	++	++	++	++	--	--
17_1c	--	--	++	++	++	++	+	+
17_2c	--	--	++	++	++	++	--	--
21	--	--	++	+++	++	+++	--	--
23	--	--	++	+++	++	+++	--	--
30b1	--	--	+	++	++	+++	--	--
37	--	--	++	++	++	+++	--	--
42	--	--	--	+	+	++	--	--
47	--	--	--	+	++	+++	+	+
48	--	--	--	+	+	++	--	--
49b1	--	--	+	++	+	++	+	+
49b2	--	--	--	++	++	+++	--	--
68	--	--	--	++	+	++	--	--
80	--	--	+++	+++	+++	+++	--	--
80	--	--	--	++	+	++	--	--
82	--	--	++	+++	++	+++	+	+
83	--	--	+	++	++	+++	--	+
90	--	--	++	+++	++	+++	++	++
93	--	--	+	++	+	++	+	+
100	--	--	++	++	++	++	--	--
102a	--	--	+	++	+	++	+	+
102b	--	--	+	++	+	++	+	+
106	--	--	++	++	++	+++	+++	+++
107	--	--	+	++	++	+++	+	+
108	--	--	++	+++	+++	+++	--	--
118b	--	--	--	+	+	++	+	+
120	--	--	++	+++	+++	+++	++	+++
122	--	--	+	++	+	++	+	+
123	--	--	+	++	+	++	+	+

Supplementary Table S4. Selected predatory bacteria reported in the literature

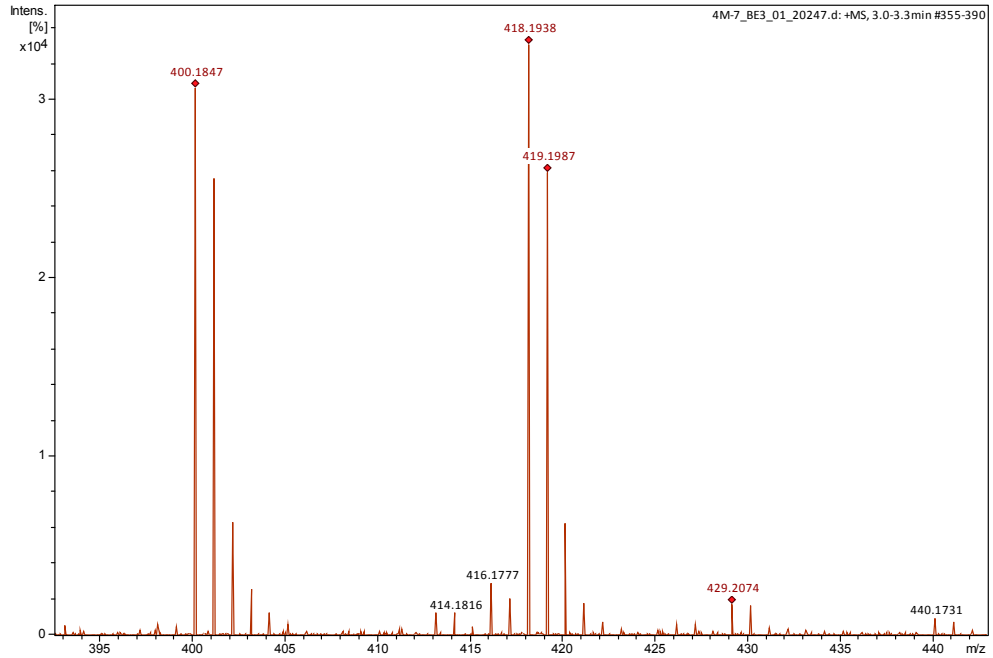
Genus and or species	**Reference**
Agromyces ramosus	[1]
Herpetosiphon	[2]
Bdellovibrio bacteriovorus	[3]
Halobacteriovorax	[4]
Myxococcus xanthus	[2]
Vampirococcus	[5]
Ensifer	[6]
Cupriavidus necator	[7]
Lysobacter	[8]
Saprospira grandis	[9]
Tenacibaculum	[10]
Olleya	[10]
Cytophaga	[11]
Rapidithrix	[12]
Porifericola rhodea	[13]
Vampirovibrio chlorellavorus	[2]
Micavibrio	[14]



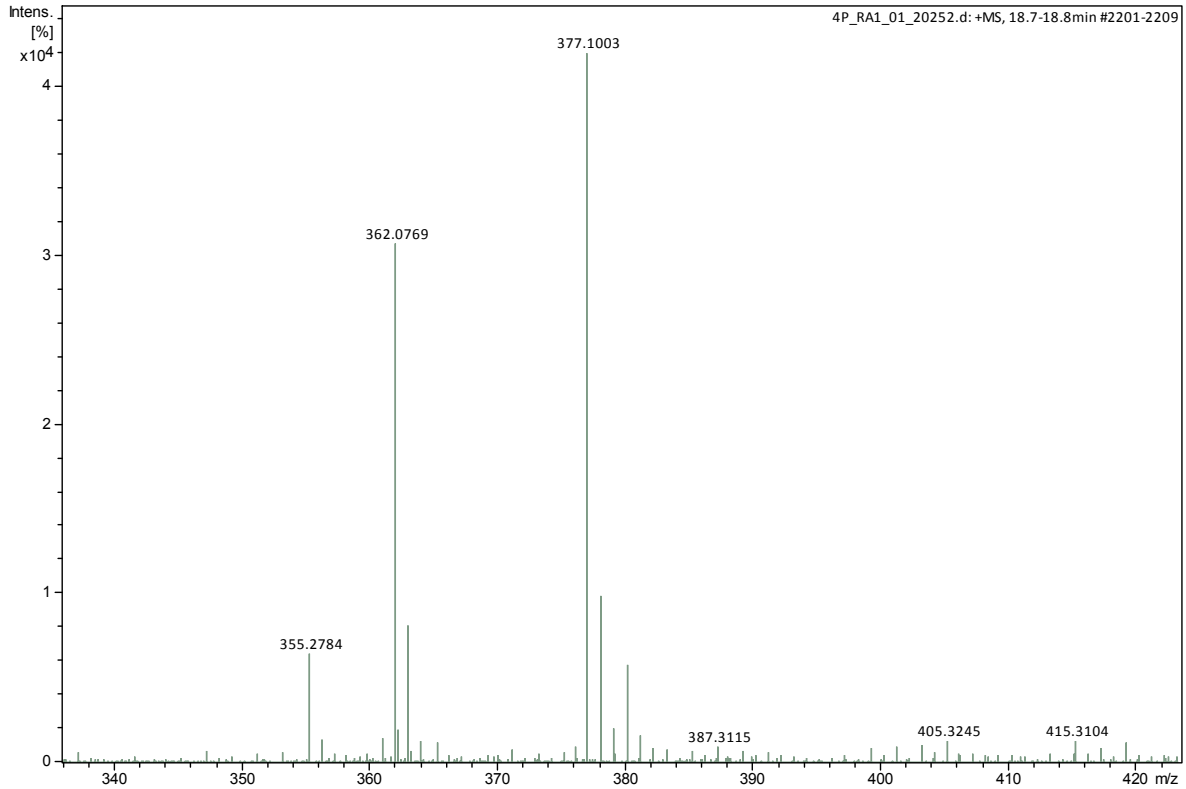
Supplementary Figure S1. MS/MS spectrum of *Rapidithrix thailandica* s80 crude extract showing the fragmentation pattern expected for ariakemicins isolated before from *Rapidithrix* sp [15].

Supplementary Table S5. Antismash bioinformatic of secondary metabolites BGC present in the genome of *Streptomyces sp*. s120 showing the presence of the naphthyridinomycin and resistomycin BGC [16].

Type	From	To	Most similar known cluster	MIBiG BGC-ID
Otherks-T1pks-Nrps	1	58334	Naphthyridinomycin_biosynthetic_gene_cluster (60% of genes show similarity)	BGC0000394_c1
Other	1	16023	Naphthyridinomycin_biosynthetic_gene_cluster (39% of genes show similarity)	BGC0000394_c1
T2pks	422	42943	Resistomycin_biosynthetic_gene_cluster (88% of genes show similarity)	BGC0000264_c1



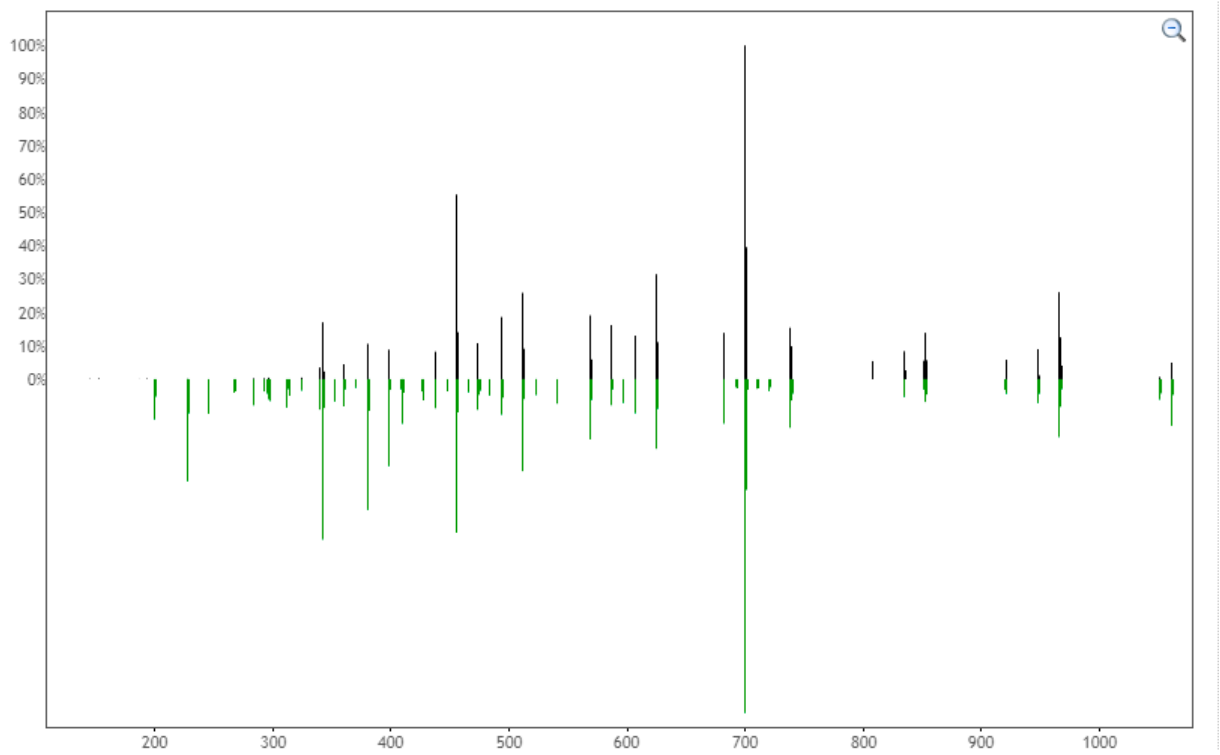
Supplementary Figure S2. MS spectrum of *Streptomyces sp*. s120 extract showing the presence of naphthyridinomycin (observed *m/z* 418.1938, expected 418.1978) [17].



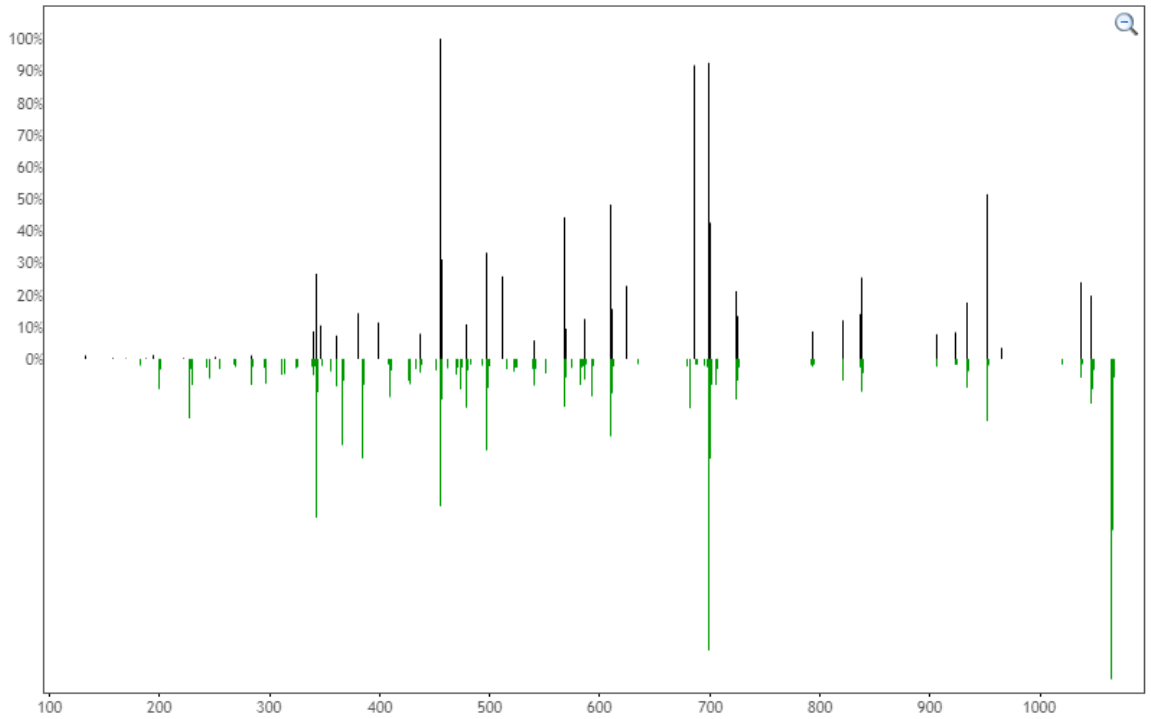
Supplementary Figure S3. MS spectrum of *Streptomyces sp*. s120 extract showing the presence of resistomycin (observed *m/z* 377.1003, expected 377.1025) [18].

Supplementary Table S6. GNPS dereplication analysis of crude extract of *Paenibacillus sp*. s102b showing the presence of pumilacidin C and E as well as surfactin [19].

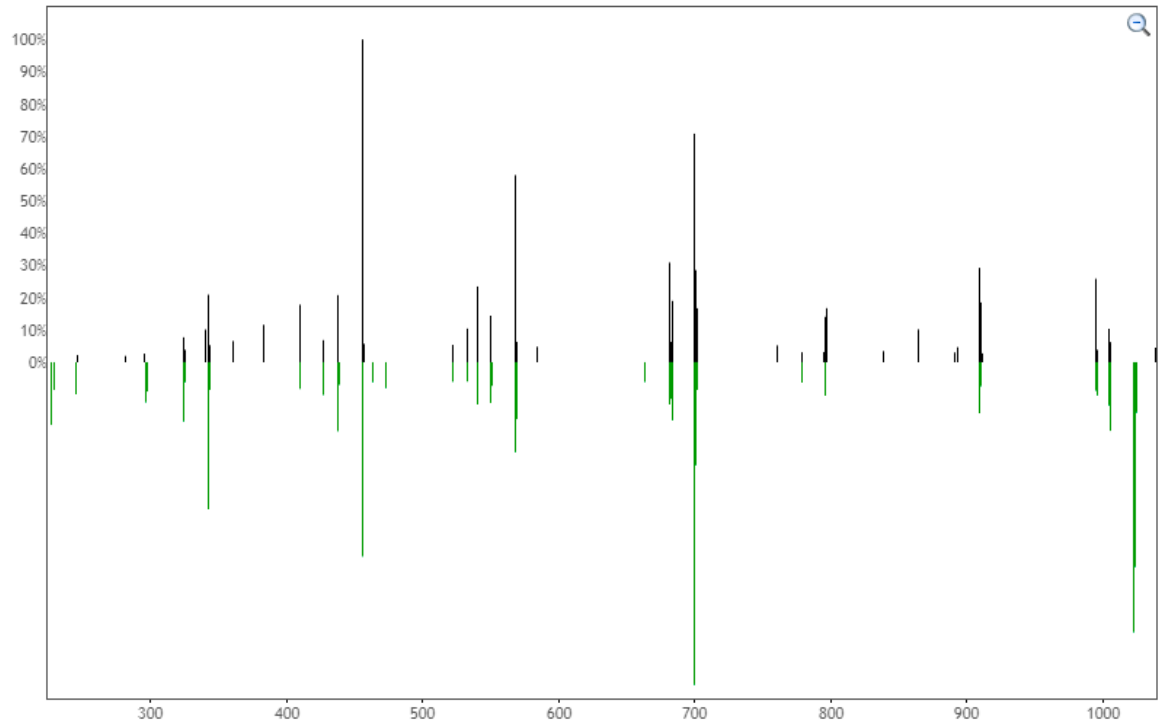
Compound_Name	Library Class	Cosine	Shared Peaks	TIC	RT	Mass Diff	SpecMZ	LibMZ	PI
pumilacidin_C_14344_dereplictor_pv_2.93242e-26	Bronze	0.82	36	6691.19	419.89	0.01	1078.75	1078.74	Pevzner
pumilacidin_E_14342_dereplictor_pv_1.13518e-25	Bronze	0.65	25	4486.22	402.57	0.02	1064.73	1064.72	Pevzner
[Ile2_4_7]Surfactin_43293_dereplictor_pv_2.3158e-16	Bronze	0.73	20	1797.96	1152.71	0.01	1022.68	1022.67	Pevzner



Supplementary Figure S4. MS/MS mirror plot of crude extract of *Paenibacillus sp*. s102b against GNPS database showing the presence of pumilacidin C [19]. Source: Green: Pumilacidin C MS/MS spectrum from GNPS database, black: Crude extract of *Paenibacillus sp*. s102b.



Supplementary Figure S5. MS/MS mirror plot of crude extract of *Paenibacillus sp*. s102b against GNPS database showing the presence of pumilacidin E [19]. Source: Green: Pumilacidin E MS/MS spectrum from GNPS database Black: Crude extract of *Paenibacillus sp*. s102b.



Supplementary Figure S6. MS/MS mirror plot of crude extract of *Paenibacillus sp*. s102b against GNPS database showing the presence of surfactin [19]. Source: Green: Surfactin MS/MS spectrum from GNPS database, black: Crude extract of *Paenibacillus sp*. s102b.

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