Electronic Supplementary Material (ESI) for Natural Product Reports

SUPPLEMENTARY INFORMATION

Bring microbial language to light using imaging mass spectrometry

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Table S1. List of microbial natural products studied by imaging mass spectrometry.

Organism	Natural products	IMS	Ref.
Bacteria			
Bacillus amyloliquefaciens	Fengycins	TOF-SIMS	1
	Iturins	TOF-SIMS	1
		MALDI	2
	Surfactins	TOF-SIMS	1
Bacillus subtilis	Surfactins	TOF-SIMS	3
		DESI	4
		MALDI	5-8
	Plipastatins	DESI	4
		MALDI	5, 8-10
	Polyglutamate[a]	MALDI	6, 9, 10
	SKF	MALDI	7
	SDP	MALDI	7
	Subtilosin	MALDI	11
Lysobacter enzymogenes	Maltophilin	MALDI	12
	Dihydromaltophilin	MALDI	12
Paenibacillus polymyxa	LI-F antibiotics	MALDI	13
Pseudomonas aeruginosa	1-Hydroxyphenazine (1-HP)[b]	MALDI	14
	1-Methoxyphenazine (1-MP)[b]	MALDI	14
	5-*N*-Methylated PCA (5-MPCA)	MALDI	14
	Phenazine-1-carboxylic acid (PCA)	MALDI	14
	Phenazine-1-carboxamide (PCN)	MALDI	14
	Phenazine-1-sulfate[b]	MALDI	14
	Phenazine dimers[b]	MALDI	14
	Phenazine pyocyanin (PYO)	MALDI	14
	Pyochelin	MALDI	14
	Pyoverdin E	MALDI	14
	Quinolones	MALDI	11, 14
	Rhamnolipids	MALDI	11, 14
Staphylococcus aureus	PSMα1 (dPSMα1)	MALDI	15
	PSMα2	MALDI	15
	PSMα3	MALDI	5, 15
	PSMα4 (dPSMα4)	MALDI	15
	δ-Toxin	MALDI	15
Cyanobacteria			
Cyanobacterial symbiont in sponge	13-Demethylisodysidenin	MALDI	16
Lyngbya bouillonii	Viridamide B	MALDI	17
Lyngbya majuscula 3L	Curacin A	MALDI	16, 18
Lyngbya majuscula JHB	Jamaicamide A	MALDI	17
	Jamaicamide B	MALDI	17-19
	Yanucamide B	MALDI	17
Lyngbya majuscula	Palmyramide A	MALDI	20
Nostoc sp. PCC 7120	Pheophytin A	MALDI	12
Oscillatoria nigro-viridis	Curacin A	MALDI	16, 17
	Curazole	MALDI	17
Phormidium sp.	Viridamide A	MALDI	17
	Viridamide B	MALDI	17

[a] Structures are not completely determined. [b] Biotransformation products.

Table S1. List of microbial natural products studied by imaging mass spectrometry.

(continued)

Organism	Natural products	IMS	Ref.
Actinomycetes			
Actinomycete sp. CNS-575	Etamycin	MALDI	12
Amycolatopsis sp. AA4	Amychelin	MALDI	21
Beauveria bassiana	Bassianolide	MALDI	12
	Beauvericin	MALDI	12
beewolf cocoon *Streptomycetes*	Piericidin A1	LDI	22
	Piericidin B1	LDI	22
	Streptochlorin	LDI	22
leaf-cutting ant *Streptomycetes*	Valinomycin	MALDI	23
Promicromonosporaceae sp. SIO-11	Peptide 2689	MALDI	8
	Promicroferrioxamines	MALDI	8
Streptomyces albus	SAL-2242	MALDI	24
Streptomyces coelicolor	Actinorhodin	TOF-SIMS	25
		DESI	4
		MALDI	11
	Acyl-desferrioxamines	MALDI	21
	Calcium dependent antibiotic (CDA)	MALDI	9, 10
	Streptorubin B	TOF-SIMS	25
		MALDI	9
	Undecylprodigiosin	TOF-SIMS	25
		MALDI	9
	Morphogen SapB	MALDI	9
Streptomyces griseu	SGR-1832	MALDI	24
Streptomyces hygroscopicus	Stendomycin I-IV	MALDI	24
Streptomyces roseosporus	Arylomycin A2	MALDI	26
	SRO15-2212	MALDI	24
	SRO15-3108[a]	MALDI	24
Streptomyces sp. Mg1	Chalcomycin A	MALDI	6
Streptomyces sviceus	SSV-2083	MALDI	27
Tistrella mobilis	Didemnin B	MALDI	27
	Dihydrodidemnin B	MALDI	27
	Didemnin X	MALDI	27
	Didemnin Y	MALDI	27
	Nordidemin B	MALDI	27
Fungi			
Aspergillus fumigatus	Fusarinine C [Al^{3+}]	MALDI	14
	Triacetylfusarinine C [Al^{3+}] and [Fe^{3+}]	MALDI	14
Mycena metata	6-Hydroxymetatacarboline D	MALDI	28

[a] Structures are not completely determined.

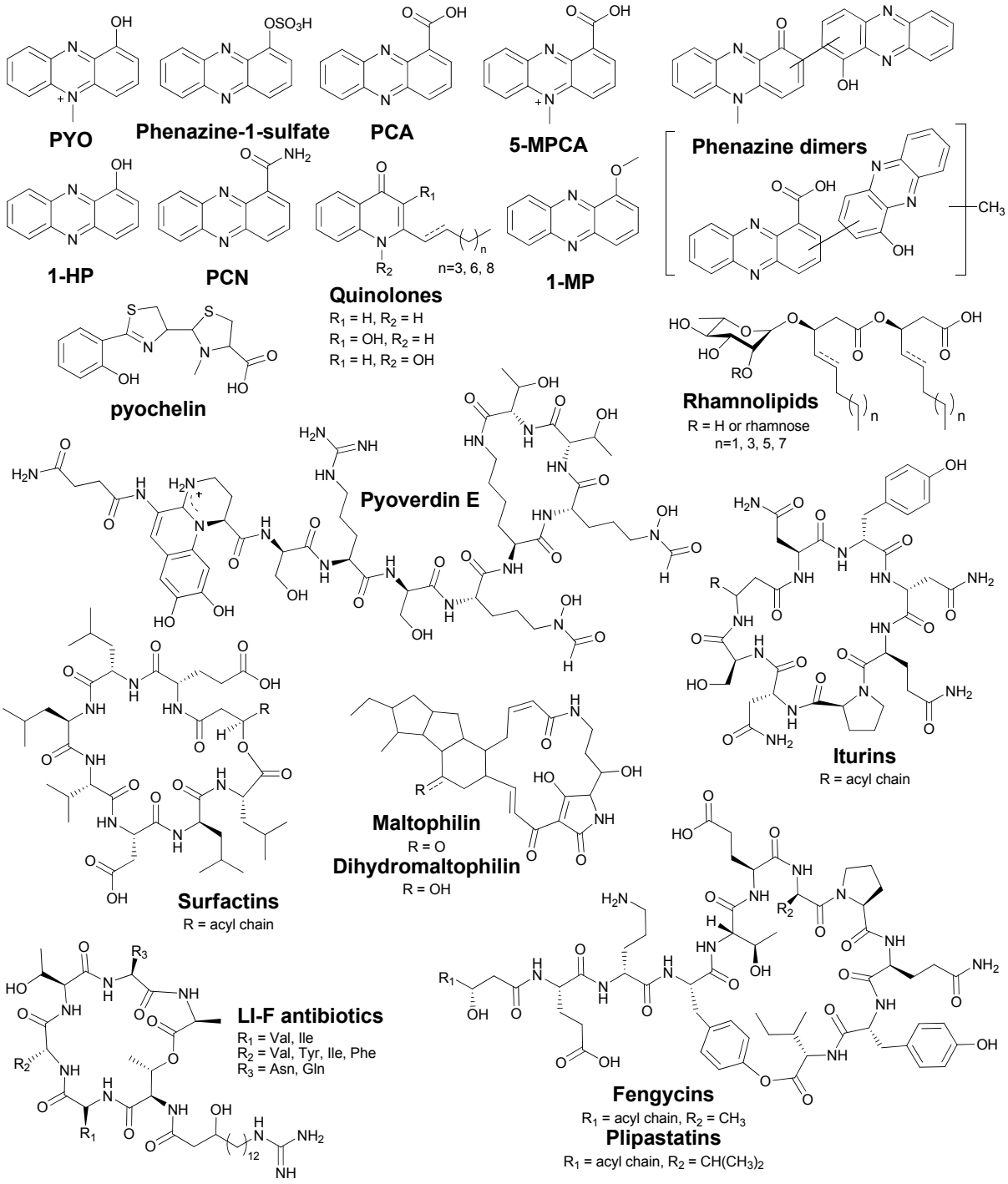

Figure S1 Chemical structures of bacterial natural products studied by IMS.

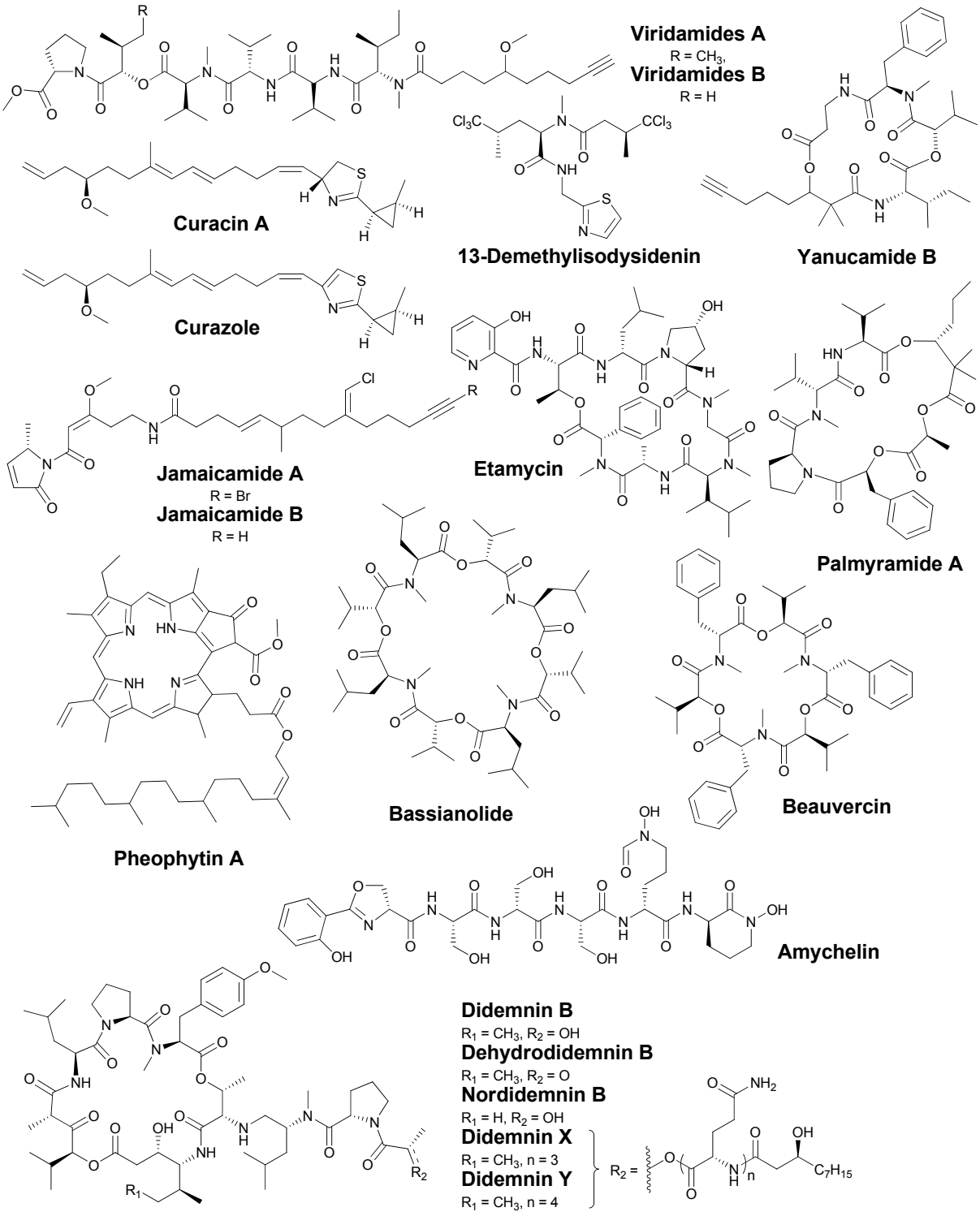

Figure S2 Chemical structures of natural products of cyanobacteria and *Actinomycetes* studied by IMS.

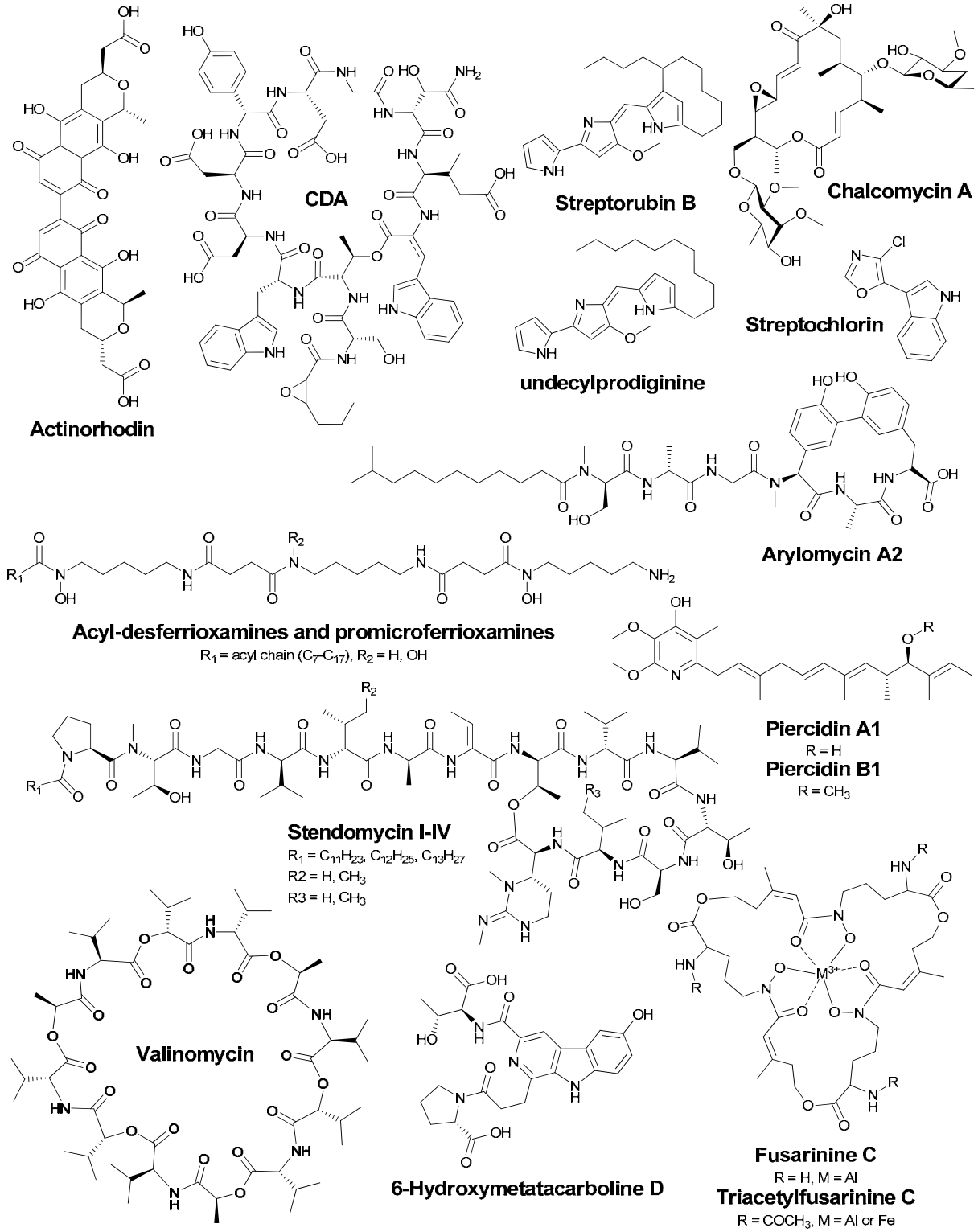

Figure S3 Chemical structures of natural products of *Streptomyces* and fungi studied by IMS.

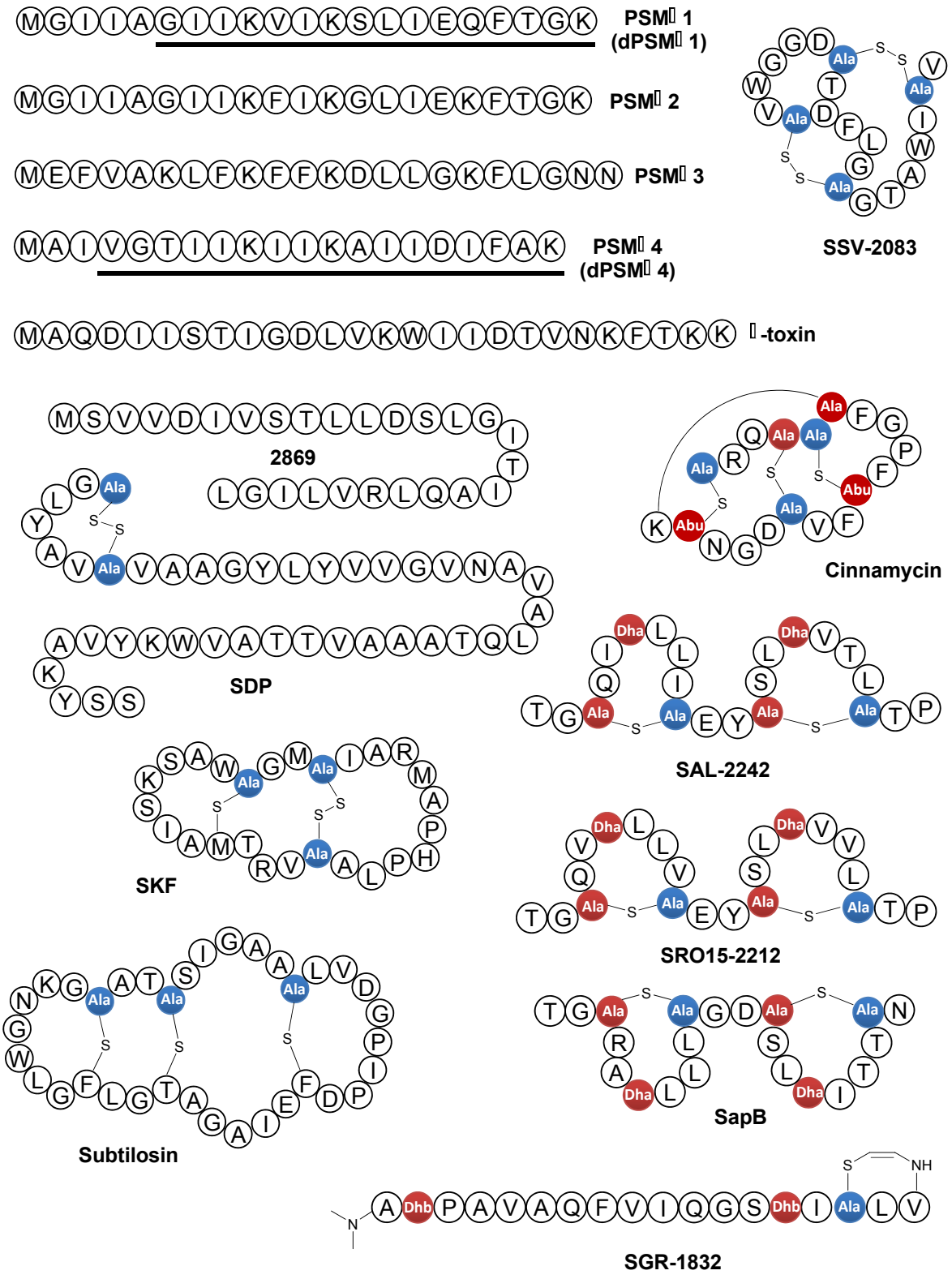

Figure S4 Chemical structures of microbial ribosomal peptides studied by IMS. The Ala marked in blue is represented as cysteine. The amino acids marked in red are originally from serine (Ala and Dha) and threonine (Abu and Dhb), respectively.

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