Transferring Fungi to a Deuterium-Enriched Medium Results in Extensive, Conditional Changes in Secondary Metabolite Production

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Table of Contents

Figure S1 Five Pairs of Fungal Strains (acclimated/non-acclimated) Grown in Deuterated or Non-deuterated Medium	5
Figure S2 Secondary Metabolomes of <i>Aspergillus</i> sp. Strains Grown in Deuterium/Non-deuterium -Enriched Medium	6
Figure S3 Secondary Metabolomes of <i>Fusarium solani</i> Strains Grown in Deuterium/Non-deuterium -Enriched Medium	7
Figure S4 Secondary Metabolomes of <i>Alternaria atrans</i> Strains Grown in Deuterium/Non-deuterium -Enriched Medium	8
Figure S5 Secondary Metabolomes of <i>Emericellopsis terricola</i> Strains Grown in Deuterium/Non-deuterium -Enriched Medium.....	9
Figure S6 Secondary Metabolomes of <i>Tolypocladium</i> sp. (I) Strains Grown in Deuterium/Non-deuterium -Enriched Medium	10
Figure S7 Secondary Metabolomes of <i>Aspergillus terreus</i> Strains Grown in Deuterium/Non-deuterium -Enriched Medium	11
Figure S8 Secondary Metabolomes of <i>Tolypocladium</i> sp. (II) Strains Grown in Deuterium/Non-deuterium -Enriched Medium	12
Figure S9 Secondary Metabolomes of <i>Bionectria ochroleuca</i> Strains Grown in Deuterium/Non-deuterium -Enriched Medium	13
Figure S10 High Resolution Mass for Compound 1 (ESI+).....	14
Figure S11 High Resolution Mass for Compound 1 (ESI+, m/z 305-360).....	15
Figure S12 High Resolution Mass for Compound 1 (ESI-).....	16
Figure S13 High Resolution Mass for Compound 1 (ESI-, m/z 292-334).....	17

Figure S14 ^1H NMR Spectrum for Compound 1	18
Figure S15 BilevelDec ^1H NMR Spectrum for Compound 1	19
Figure S16 ^{13}C NMR Spectrum for Compound 1	20
Figure S17 HSQC NMR Spectrum for Compound 1	21
Figure S18 INADEQUATE NMR Spectrum for Compound 1	22
Figure S19 High Resolution Mass for Compound 2 (ESI+).....	23
Figure S20 High Resolution Mass for Compound 2 (ESI+, m/z 468-535).....	24
Figure S21 ^1H NMR Spectrum for Compound 2	25
Figure S22 BilevelDec ^1H NMR Spectrum for Compound 2	26
Figure S23 ^{13}C NMR Spectrum for Compound 2	27
Figure S24 A Comparison of ^{13}C NMR Spectra for Compound 2 and Setphacidin A.....	28
Figure S25 HSQC NMR Spectrum for Compound 2	29
Figure S26 INADEQUATE NMR Spectrum for Compound 2	30
Figure S27 High Resolution Mass for Compound 3 (ESI+).....	31
Figure S28 High Resolution Mass for Compound 3 (ESI+, m/z 507-532).....	32
Figure S29 ^1H NMR Spectrum for Compound 3	33
Figure S30 BilevelDec ^1H NMR Spectrum for Compound 3	34
Figure S31 ^{13}C NMR Spectrum for Compound 3	35
Figure S32 A Comparison of ^{13}C NMR Spectra for Compound 2 and 3	36
Figure S33 HSQC NMR Spectrum for Compound 3	37
Figure S34 INADEQUATE NMR Spectrum for Compound 3	38
Figure S35 High Resolution Mass for Compound 4 (ESI+).....	39
Figure S36 High Resolution Mass for Compound 4 (ESI+, m/z 477-538).....	40

Figure S37 ^1H NMR Spectrum for Compound 4	41
Figure S38 BilevelDec ^1H NMR Spectrum for Compound 4	42
Figure S39 ^{13}C NMR Spectrum for Compound 4	43
Figure S40 A Comparison of ^{13}C NMR Spectra for Compound 2 and 4	44
Figure S41 HSQC NMR Spectrum for Compound 4	45
Figure S42 INADEQUATE NMR Spectrum for Compound 4	46
Figure S43 High Resolution Mass for Compound 5 (ESI+).....	47
Figure S44 High Resolution Mass for Compound 5 (ESI+, m/z 493-540).....	48
Figure S45 ^1H NMR Spectrum for Compound 5	49
Figure S46 BilevelDec ^1H NMR Spectrum for Compound 5	50
Figure S47 ^{13}C NMR Spectrum for Compound 5	51
Figure S48 A Comparison of ^{13}C NMR Spectra for Compound 3 and 5	52
Figure S49 HSQC NMR Spectrum for Compound 5	53
Figure S50 HMBC NMR Spectrum for Compound 5	54
Figure S51 High Resolution Mass for Compound 6 (ESI-).....	55
Figure S52 High Resolution Mass for Compound 6 (ESI-, m/z 563-635).....	56
Figure S53 ^1H NMR Spectrum for Compound 6	57
Figure S54 ^{13}C NMR Spectrum for Compound 6	58
Figure S55 HSQC NMR Spectrum for Compound 6	59
Figure S56 HMBC NMR Spectrum for Compound 6	60
Figure S57 ^{13}C - ^{13}C TOCSY NMR Spectrum for Compound 6	61
Figure S58 Primary Anti-MRSA Activity of Isolated Compounds.....	62
Table S1 NMR Data for Compounds 1-6 ^a (δ in ppm, CDCl_3 and/or $\text{DMSO}-d_6$).....	63

Figure S1 Five Pairs of Fungal Strains (acclimated/non-acclimated) Grown in Deuterated or Non-deuterated Medium

(pictures of the rest of three fungi was not shown due to unsatisfied picture quality)

Figure S2 Secondary Metabolomes of *Aspergillus* sp. Strains Grown in Deuterium/Non-deuterium -Enriched Medium

Figure S3 Secondary Metabolomes of *Fusarium solani* Strains Grown in Deuterium/Non-deuterium -Enriched Medium

Figure S4 Secondary Metabolomes of *Alternaria atrans* Strains Grown in Deuterium/Non-deuterium -Enriched Medium

Figure S5 Secondary Metabolomes of *Emericellopsis terricola* Strains Grown in Deuterium/Non-deuterium -Enriched Medium

Figure S6 Secondary Metabolomes of *Tolypocladium* sp. (I) Strains Grown in Deuterium/Non-deuterium -Enriched Medium

Figure S7 Secondary Metabolomes of *Aspergillus terreus* Strains Grown in Deuterium/Non-deuterium -Enriched Medium

Figure S8 Secondary Metabolomes of *Tolypocladium* sp. (II) Strains Grown in Deuterium/Non-deuterium -Enriched Medium

Figure S9 Secondary Metabolomes of *Bionectria ochroleuca* Strains Grown in Deuterium/Non-deuterium -Enriched Medium

Figure S10 High Resolution Mass for Compound **1** (ESI+)

Figure S11 High Resolution Mass for Compound **1** (ESI+, m/z 305-360)

Figure S12 High Resolution Mass for Compound 1 (ESI-)

Figure S13 High Resolution Mass for Compound **1** (ESI-, m/z 292-334)

Figure S14 ^1H NMR Spectrum for Compound 1

Figure S15 BilevelDec ^1H NMR Spectrum for Compound 1

Figure S16 ^{13}C NMR Spectrum for Compound 1

Figure S17 HSQC NMR Spectrum for Compound **1**

Figure S18 INADEQUATE NMR Spectrum for Compound **1**

Figure S19 High Resolution Mass for Compound **2** (ESI+)

Figure S20 High Resolution Mass for Compound **2** (ESI+, m/z 468-535)

Figure S21 ^1H NMR Spectrum for Compound **2**

Figure S22 BilevelDec ¹H NMR Spectrum for Compound 2

Figure S23 ^{13}C NMR Spectrum for Compound 2

Figure S24 A Comparison of ^{13}C NMR Spectra for Compound 2 and Setphacidin A

Figure S25 HSQC NMR Spectrum for Compound 2

Figure S26 INADEQUATE NMR Spectrum for Compound **2**

Figure S27 High Resolution Mass for Compound **3** (ESI+)

Figure S28 High Resolution Mass for Compound **3** (ESI+, m/z 507-532)

Figure S29 ^1H NMR Spectrum for Compound **3**

Figure S30 BilevelDec ¹H NMR Spectrum for Compound 3

Figure S31 ^{13}C NMR Spectrum for Compound **3**

Figure S32 A Comparison of ^{13}C NMR Spectra for Compound 2 and 3

Figure S33 HSQC NMR Spectrum for Compound **3**

Figure S34 INADEQUATE NMR Spectrum for Compound **3**

Figure S35 High Resolution Mass for Compound **4** (ESI+)

Figure S36 High Resolution Mass for Compound **4** (ESI+, m/z 477-538)

Figure S37 ^1H NMR Spectrum for Compound 4

Figure S38 BilevelDec ^1H NMR Spectrum for Compound 4

Figure S39 ^{13}C NMR Spectrum for Compound **4**

Figure S40 A Comparison of ^{13}C NMR Spectra for Compound **2** and **4**

Figure S41 HSQC NMR Spectrum for Compound **4**

Figure S42 INADEQUATE NMR Spectrum for Compound 4

Figure S43 High Resolution Mass for Compound **5** (ESI+)

Figure S44 High Resolution Mass for Compound **5** (ESI+, m/z 493-540)

Figure S45 ¹H NMR Spectrum for Compound **5**

Figure S46 BilevelDec ^1H NMR Spectrum for Compound 5

Figure S47 ^{13}C NMR Spectrum for Compound **5**

Figure S48 A Comparison of ^{13}C NMR Spectra for Compound 3 and 5

Figure S49 HSQC NMR Spectrum for Compound 5

Figure S50 HMBC NMR Spectrum for Compound **5**

Figure S51 High Resolution Mass for Compound **6** (ESI-)

Figure S52 High Resolution Mass for Compound **6** (ESI-, m/z 563-635)

Figure S53 ^1H NMR Spectrum for Compound **6**

Figure S54 ^{13}C NMR Spectrum for Compound **6**

Figure S55 HSQC NMR Spectrum for Compound 6

Figure S56 HMBC NMR Spectrum for Compound **6**

Figure S57 ^{13}C - ^{13}C TOCSY NMR Spectrum for Compound **6**

Figure S58 Primary Anti-MRSA Activity of Isolated Compounds

Table S1. NMR Data for Compounds 1-6^a (δ in ppm, CDCl₃ and/or DMSO-*d*₆)

Carbon	1		2		3		4		5		6	
	δ_C , type	δ_H	δ_C , type	δ_H	δ_C , type	δ_H	δ_C , type	δ_H	δ_C , type	δ_H	δ_C , type	δ_H
1	NH	10.85	NH	10.39	NH	5.48	NH ₂	7.37	NH	10.24	162.9, qC	
2	124.2, CH	7.18	139.5, qC		91.3, qC				180.6, qC		97.3, qC	
3	108.9, qC		103.7, qC		87.4, qC		196.3, qC		120.0, qC		155.4, qC	
4	127.3, qC		117.1, CH	7.05	123.3, CH	6.94	132.2, CH	7.51	126.4, CH	6.89	108.1, qC	
5	118.1, CH	7.57	108.2, CH	6.42	106.5, CH	6.11	104.1, CH	6.01	106.9, CH	6.36	171.6, qC	
6	117.9, CH	6.96	147.4, qC		153.6, qC		157.3, qC		152.1, qC			
7	120.4, CH	7.06	104.9, qC		104.6, qC		105.6, qC		103.9, qC		75.9, CH	4.76
8	110.8, CH	7.32	132.8, qC		145.3, qC		148.0, qC		138.7, qC		33.8, CH ₂	3.01
9	135.7, qC		121.3, qC		123.8, qC		112.0, qC		55.3, qC		132.5, qC	
10	25.4, CH ₂	3.06,3.22	23.1, CH ₂	2.57,3.30	34.0, CH ₂	2.33,2.57	35.9, CH ₂	3.06,3.27	30.5, CH ₂	2.31,2.66	116.2, CH	6.96
11	54.8, CH	4.27	59.3, qC		58.1, CH	3.70	61.9, qC		52.6, CH	3.68	140.0, qC	
12	165.5, qC		168.5, qC		165.6, qC		167.6, qC		164.1, qC		115.5, qC	
13											161.5, qC	
14	44.0, CH ₂	3.20,3.35	43.0, CH ₂	3.23,3.30	43.7, CH ₂	3.24,3.33	42.9, CH ₂	3.35	43.8, CH ₂	3.12,3.28	98.2, CH	6.70
15	20.9, CH ₂	1.53,1.63	22.9, CH ₂	1.76,1.89	22.0, CH ₂	1.75	22.8, CH ₂	1.84,1.94	20.4, CH ₂	1.60	55.3, CH ₃	3.82
16	27.1, CH ₂	1.30,1.91	28.1, CH ₂	1.78,2.47	27.1, CH ₂	1.89,2.07	27.9, CH ₂	1.73	27.1, CH ₂	1.91,2.01	19.8, CH ₃	1.55
17	58.1, CH	4.01	65.6, qC		60.4, CH	4.00	65.5, qC		57.4, CH	3.71		
18	168.9, qC		173.0, qC		172.1, qC		171.6, qC		167.5, qC			
19	NH	7.69	NH	8.62			NH	8.30	NH	6.20		
20			29.8, CH ₂	1.88,1.98	44.0, qC		34.3, CH ₂	1.72,2.11	41.7, qC			
21			48.7, CH	2.40	144.8, CH	6.21	49.5, CH	3.16	142.5, CH	5.98		
22			34.2, qC		110.2, CH ₂	4.79,4.80	142.4, qC		112.2, CH ₂	4.87,4.96		
23			27.2, CH ₃	1.26	23.3, CH ₃	1.14	115.1, CH ₂	4.71,4.77	20.1, CH ₃	0.89		
24			20.7, CH ₃	0.93	23.1, CH ₃	1.11	18.0, CH ₃	1.48	21.1, CH ₃	0.94		
25			117.8, CH	6.88	116.4, CH	6.36	116.2, CH	6.62	116.6, CH	6.57		
26			128.4, CH	5.59	127.9, CH	5.53	126.5, CH	5.53	128.8, CH	5.55		
27			74.5, qC		74.9, qC		75.4, qC		74.8, qC			
28			26.1, CH ₃	1.33	26.8, CH ₃	1.27	26.3, CH ₃	1.32	26.5, CH ₃	1.23		
29			26.5, CH ₃	1.23	27.3, CH ₃	1.30	26.7, CH ₃	1.34	26.8, CH ₃	1.36		

^aAssignments based on ¹H, ¹³C, and HSQC NMR (¹³C 125 or 150/ ¹H 500 or 600 MHz) experiments at room temperature.