

SUPPLEMENTARY INFORMATION

Re-examination of species limits in *Aspergillus* section *Flavipedes* using advanced species delimitation methods and description of four new species

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Supplementary Fig. S1. The results of species delimitation by STACEY in the series *Flavipedes* with the chosen *collapseheight* parameter = 0.005 (A) and 0.0001 (B). The similarity matrices give the posterior probability of every two isolates belonging to the same multi-species coalescent cluster (tentative species). The darkest brown shade corresponds to a posterior probability of 1, while a white colour is equal to 0. The horizontal and vertical lines in the similarity matrices depicts the species boundaries proposed by the analysis. Ex-type isolates are highlighted with bold font. Presented phylogenetic trees were calculated in STACEY.

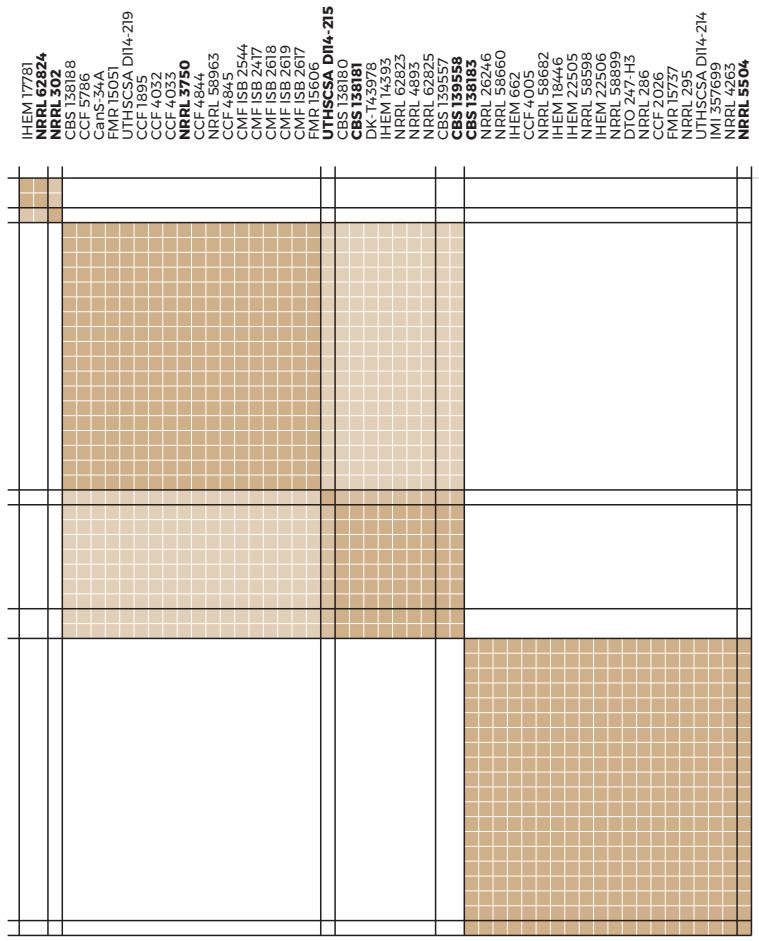
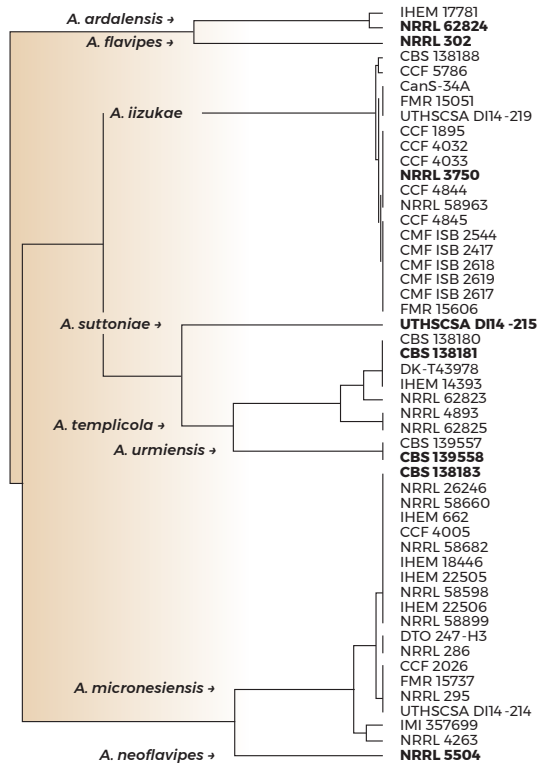
Supplementary Fig. S2. The results of species delimitation by STACEY in the series *Spelaei* with the chosen *collapseheight* parameter = 0.002 (A) and 0.00075 (B). The similarity matrices give the posterior probability of every two isolates belonging to the same multi-species coalescent cluster (tentative species). The darkest brown shade corresponds to a posterior probability of 1, while a white colour is equal to 0. The horizontal and vertical lines in the similarity matrices depicts the species boundaries proposed by the analysis. Ex-type isolates are highlighted with bold font. Presented phylogenetic trees were calculated in STACEY.

Supplementary Table S1. Delimitation of isolates into populations by BPP 4.3 with 0.9 posterior probability cutoff.

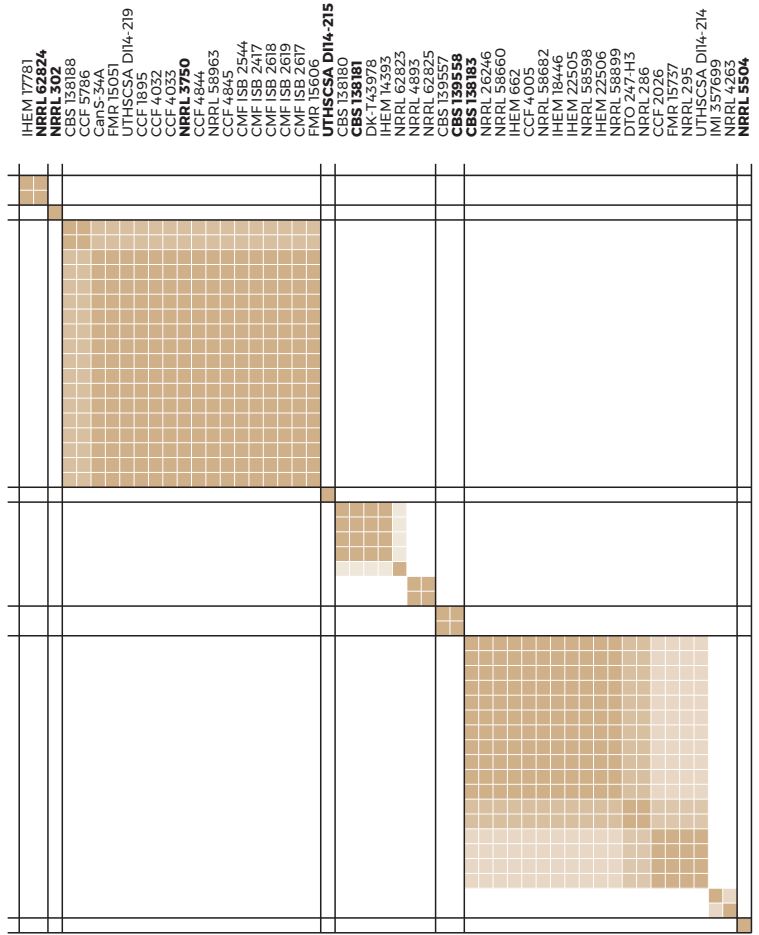
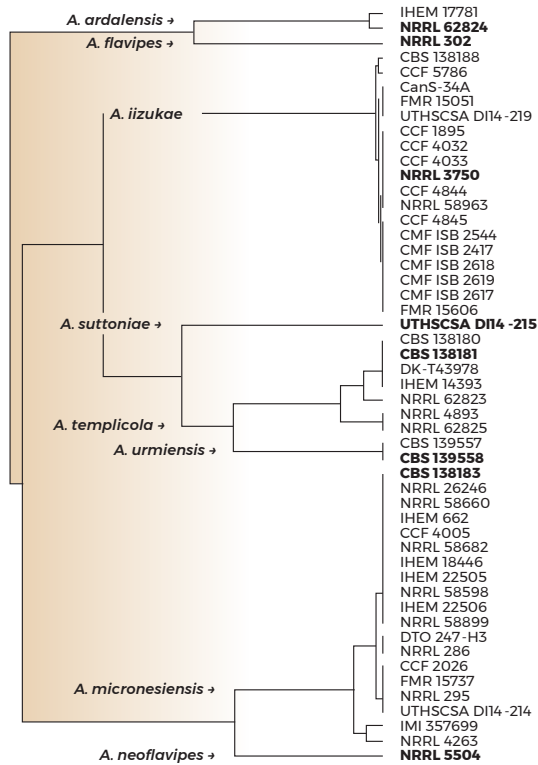
Supplementary Table S2. Minimum inhibitory concentrations determined with EUCAST E.Def.9.3 method at 37 °C for members of *Aspergillus* sect. *Flavipedes*.

Supplementary Figure S1

A collapseheight = 0.005

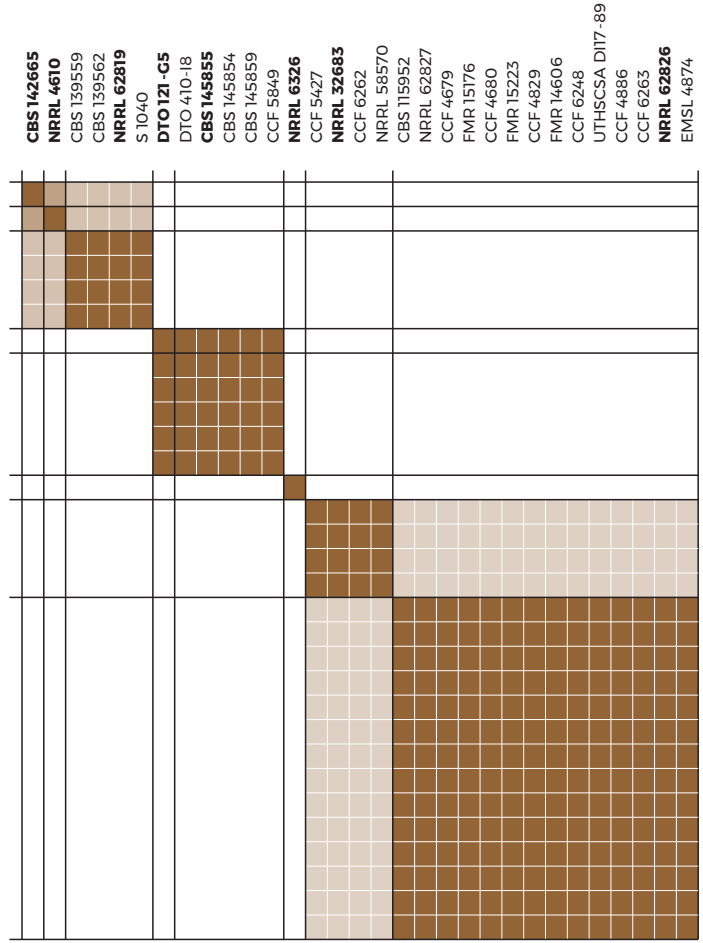
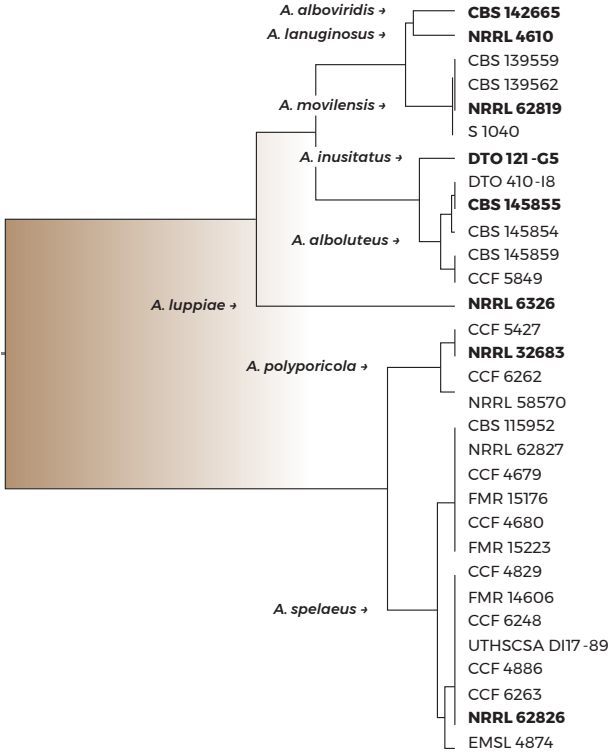


B collapseheight = 0.0001



Supplementary Figure S2

A collapseheight = 0.002



B collapseheight = 0.00075

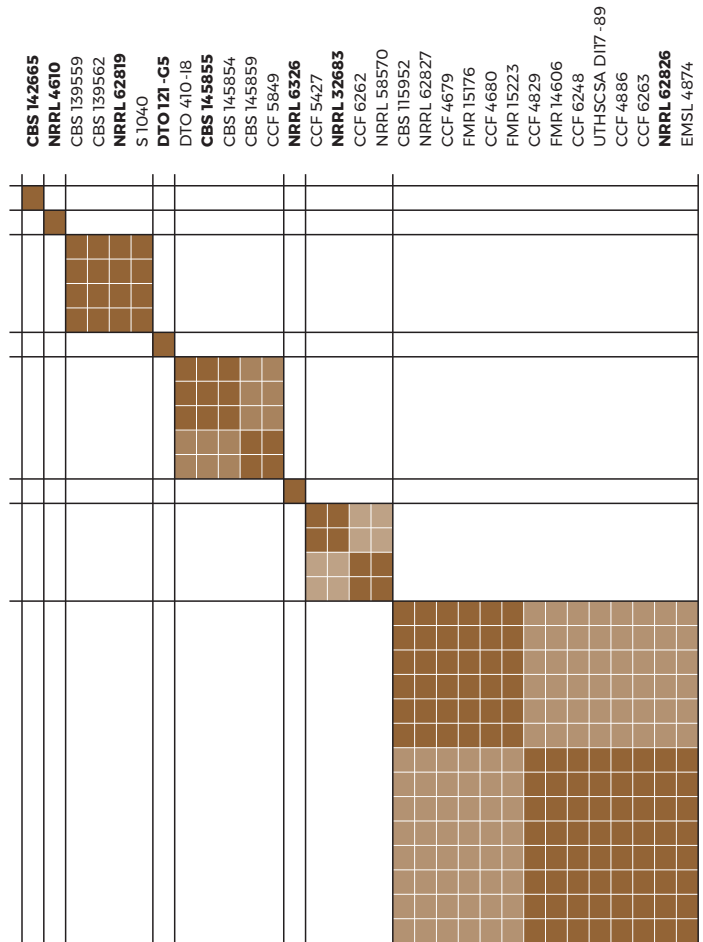
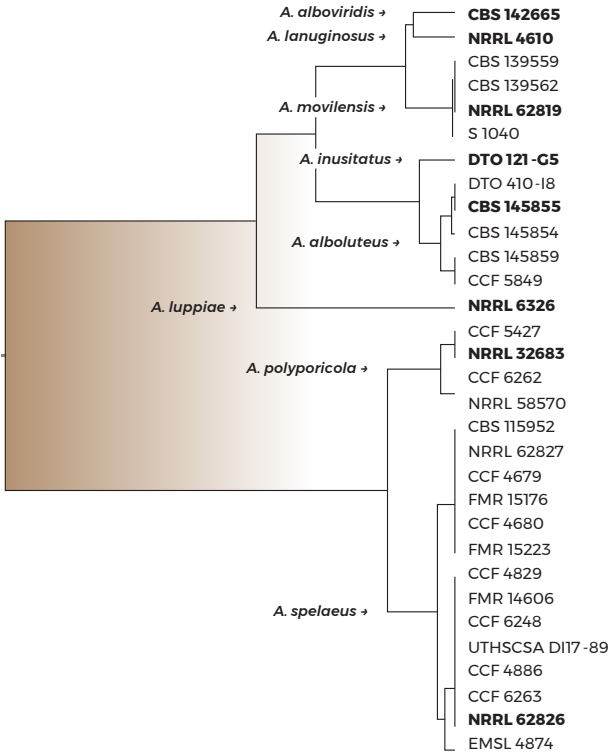


Table S1. Delimitation of isolates into populations by BPP 4.3 with 0.9 posterior probability cutoff

<i>A. alboluteus</i> population 1	CCF 5849, CBS 145859
<i>A. alboluteus</i> population 2	CBS 145854
<i>A. alboluteus</i> population 3	CBS 145855
<i>A. alboluteus</i> population 4	DTO 410-18
<i>A. alboviridis</i> population 1	CBS 142665
<i>A. ardalensis</i> population 1	IHEM 17781
<i>A. ardalensis</i> population 2	NRRL 62824
" <i>A. capensis</i> " population 1	CBS 138188
" <i>A. capensis</i> " population 2	CanS 34A
<i>A. flavipes</i> population 1	NRRL 302, NRRL 4852
<i>A. iizukae</i> population 1	CCF 5786
<i>A. iizukae</i> population 2	CCF 1895
<i>A. iizukae</i> population 3	CMF ISB 2617, FMR 15606
<i>A. iizukae</i> population 4	CCF 4845, CMF ISB 2544, CMF ISB 2417, CMF ISB 2616, CMF ISB 2618, CMF ISB 2620
<i>A. iizukae</i> population 5	CMF ISB 2619
<i>A. iizukae</i> population 6	NRRL 3750, CCF 4032, CCF 4033
<i>A. iizukae</i> population 7	CCF 4844, NRRL 58963
<i>A. iizukae</i> population 8	FMR 15051
<i>A. iizukae</i> population 9	UTHSCSA DI14-219
<i>A. inusitatus</i> population 1	DTO 121-G5
<i>A. lanuginosus</i> population 1	NRRL 4610
<i>A. luppiae</i> population 1	NRRL 6326
<i>A. micronesiensis</i> population 1	DTO 247-H3, NRRL 286
<i>A. micronesiensis</i> population 2	NRRL 58660, CBS 138183, NRRL 26246, IHEM 662, NRRL 4578
<i>A. micronesiensis</i> population 3	IHEM 18446, NRRL 58682, CCF 4005
<i>A. micronesiensis</i> population 4	NRRL 58598, IHEM 22505, IHEM 22506, NRRL 58899
<i>A. micronesiensis</i> population 5	FMR 15737
<i>A. micronesiensis</i> population 6	NRRL 295
<i>A. micronesiensis</i> population 7	CCF 2026
<i>A. micronesiensis</i> population 8	UTHSCSA DI14-214
<i>A. micronesiensis</i> population 9	IMI 357699
<i>A. micronesiensis</i> population 10	NRRL 4263
<i>A. movilensis</i> population 1	CBS 139562, NRRL 62819, CBS 139559
<i>A. movilensis</i> population 2	S1040
<i>A. neoflavipes</i> population 1	NRRL 5504
<i>A. olivimuriae</i> population 1	NRRL 66783
<i>A. polyporicola</i> population 1	NRRL 32683, CCF 5427
<i>A. polyporicola</i> population 2	CCF 6262
<i>A. polyporicola</i> population 3	NRRL 58570
<i>A. spelaeus</i> population 1	NRRL 62827, FMR 15176, CBS 115952, CCF 4679, CCF 4697
<i>A. spelaeus</i> population 2	CCF 4680, FMR 15223
<i>A. spelaeus</i> population 3	EMSL 4874
<i>A. spelaeus</i> population 4	FMR 14606, CCF 4829
<i>A. spelaeus</i> population 5	UTHSCSA_DI17-89, CCF 6248
<i>A. spelaeus</i> population 6	CCF 4886, CCF 6263
<i>A. spelaeus</i> population 7	NRRL 62826, CCF 4699
<i>A. suttoniae</i> population 1	UTHSCSA_DI14-215
<i>A. templicola</i> population 1	NRRL 62825, NRRL 4893
<i>A. templicola</i> population 2	NRRL 62823
<i>A. templicola</i> population 3	DK T43978
<i>A. templicola</i> population 4	CBS 138180, CBS 138181
<i>A. templicola</i> population 5	IHEM 14393
<i>A. urmiensis</i> population 1	CBS 139557, CBS 139558, CBS 139766

Table S2. Minimum inhibitory concentrations determined with EUCAST E.Def.9.3 method at 37 °C¹ for members of *Aspergillus* sect. *Flavipedes*

Amphotericin B	0.06	0.125	0.25	0.5	1	2	≥ 4	In total
<i>A. alboluteus</i>		1	1	1	2			5
<i>A. albobiridis</i>				1				1
<i>A. ardalensis</i>					1	1		2
<i>A. flavipes</i>				1		1		2
<i>A. iizukae</i>			1	4	4	1		10
<i>A. inusitatus</i>					1			1
<i>A. lanuginosus</i>		1						1
<i>A. luppieae</i>	1							1
<i>A. micronesiensis</i>		1		9	6			16
<i>A. movilensis</i>		2	2					4
<i>A. neoflavipes</i>				1				1
<i>A. olivimuriae</i>				1				1
<i>A. polyporicola</i>			1	1	2			4
<i>A. spelaeus</i>				5	2	2		9
<i>A. suttoniae</i>				1				1
<i>A. templicola</i>		1	1	3	1			6
<i>A. urmiensis</i>							1	1
In total	1	6	6	28	19	6	1	67

Itraconazole	0.03	0.06	0.125	0.25	0.5	1	In total
<i>A. alboluteus</i>			5				5
<i>A. albobiridis</i>				1			1
<i>A. ardalensis</i>						1	1
<i>A. flavipes</i>		1	1				2
<i>A. iizukae</i>	1		5	4			10
<i>A. inusitatus</i>		1					1
<i>A. lanuginosus</i>	1						1
<i>A. luppieae</i>		1					1
<i>A. micronesiensis</i>			5	5	6		16
<i>A. movilensis</i>	2		2				4
<i>A. neoflavipes</i>		1					1
<i>A. olivimuriae</i>		1					1
<i>A. polyporicola</i>						4	4
<i>A. spelaeus</i>				1	7	1	9
<i>A. suttoniae</i>		1					1
<i>A. templicola</i>		1	1	2	2		6
<i>A. urmiensis</i>			1	1			2
In total	4	7	20	14	20	2	67

Voriconazole	0.125	0.25	0.5	1	2	4	8	In total
<i>A. alboluteus</i>		1	4					5
<i>A. albobiridis</i>				1				1
<i>A. ardalensis</i>					1		1	2
<i>A. flavipes</i>			1	1				2
<i>A. iizukae</i>			3	7				10
<i>A. inusitatus</i>		1						1
<i>A. lanuginosus</i>	1							1
<i>A. luppieae</i>		1						1
<i>A. micronesiensis</i>		1	13	2				16
<i>A. movilensis</i>			3	1				4
<i>A. neoflavipes</i>		1						1
<i>A. olivimuriae</i>			1					1

<i>A. polyporicola</i>				3	1			4
<i>A. spelaeus</i>				4	5			9
<i>A. suttoniae</i>			1					1
<i>A. templicola</i>	1	5						6
<i>A. urmiensis</i>		2						2
In total	2	12	26	19	7	0	1	67

Terbinafine	0.06	0.125	0.25	0.5	1	2	4	In total
<i>A. alboluteus</i>			3	2				5
<i>A. alboviridis</i>							1	1
<i>A. ardalensis</i>			1		1			2
<i>A. flavipes</i>		2						2
<i>A. iizukae</i>			9	1				10
<i>A. inusitatus</i>		1						1
<i>A. lanuginosus</i>			1					1
<i>A. lupppiae</i>			1					1
<i>A. micronesiensis</i>		2	14					16
<i>A. movilensis</i>		1	3					4
<i>A. neoflavipes</i>				1				1
<i>A. olivimuriae</i>	1							1
<i>A. polyporicola</i>			2	2				4
<i>A. spelaeus</i>			4	5				9
<i>A. suttoniae</i>			1					1
<i>A. templicola</i>		2	4					6
<i>A. urmiensis</i>			2					2
In total	1	8	45	11	1	0	1	67

Posaconazole	0.03	0.06	0.125	0.25	0.5	1	In total
<i>A. alboluteus</i>			2	3			5
<i>A. alboviridis</i>				1			1
<i>A. ardalensis</i>				1		1	2
<i>A. flavipes</i>			1	1			2
<i>A. iizukae</i>	1			8	1		10
<i>A. inusitatus</i>	1						1
<i>A. lanuginosus</i>	1						1
<i>A. lupppiae</i>			1				1
<i>A. micronesiensis</i>				7	6	3	16
<i>A. movilensis</i>	4						4
<i>A. neoflavipes</i>			1				1
<i>A. olivimuriae</i>			1				1
<i>A. polyporicola</i>					2	2	4
<i>A. spelaeus</i>					5	4	9
<i>A. suttoniae</i>			1				1
<i>A. templicola</i>	1	1	2	2			6
<i>A. urmiensis</i>				1	1		2
In total	8	8	24	17	9	1	36

Isavuconazole	0.125	0.25	0.5	1	2	4	8	In total
<i>A. alboluteus</i>			2	3				5
<i>A. alboviridis</i>				1				1
<i>A. ardalensis</i>							2	2
<i>A. flavipes</i>			1	1				2
<i>A. iizukae</i>				1	2	3	4	10
<i>A. inusitatus</i>			1					1
<i>A. lanuginosus</i>		1						1
<i>A. lupppiae</i>				1				1

<i>A. micronesiensis</i>	1	10	4	1		16
<i>A. movilensis</i>		3	1			4
<i>A. neoflavipes</i>	1					1
<i>A. olivimuriae</i>	1					1
<i>A. polyporicola</i>		3	1			4
<i>A. speleus</i>		3	6			9
<i>A. suttoniae</i>		1				1
<i>A. templicola</i>	1	5				6
<i>A. urmiensis</i>		2				2
In total	1	9	33	14	4	67

¹MIC determinations performed with 25 °C incubation due to absence of growth at 37 °C (*A. polyporicola* and *A. speleus*)

Quality Control (QC)	AMB	ITRA	POSA	VORI	ISAVU	TER
<i>A. fumigatus</i> ATCC 204305	0,5	0,25	0.125	1	1	4
<i>A. fumigatus</i> ATCC 204305	0,5	0,25	0.125	1	1	2
QC Target	0.5	0.25	0.06-0.125	0.5		
QC Range	0.25-1	0.125-0.5	0.03-0.25	0.25-1		