

Supplementary Table S1. Groups identified in the phylogenetic tree obtained by maximum likelihood from *BenA* gene sequences

Group	Isolate	Genbank Access Number	Specie	Section
I	*MH614486.1 <i>A. welwitschiae</i>		<i>A. welwitschiae</i>	<i>Nigri</i>
	*MH614483.1- <i>A. welwitschiae</i>			
	*MH614497.1 <i>A. welwitschiae</i>			
	CCMFBH-845	MT410098		
	CCMFBH-848	MT410099		
	CCMFBH-849	MT410100		
	CCMFBH-852	MT410101		
	CCMFBH-855	MT410102		
	CCMFBH-883	MT410103		
	CCMFBH-901	MT410104		
	CCMFBH-903	MT410106		
	CCMFBH-926	MT410105		
	CCMFBH-928	MT410107		
	CCMFBH-932	MT410070		
	CCMFBH-934	MT410108		
	CCMFBH-936	MT410109		
	CCMFBH-939	MT410072		
	CCMFBH-942	MT410110		
	CCMFBH-944	MT410111		
	CCMFBH-949	MT410112		
	CCMFBH-975	MT410113		
	CCMFBH-981	MT410114		
	CCMFBH-983	MT410115		
	CCMFBH-988	MT410116		
	CCMFBH-994	MT410081		
	CCMFBH-997	MT410117		
II	*MN567299.1 <i>A. niger</i>		<i>A. niger</i>	<i>Nigri</i>
	*MH204824.1 <i>A. niger</i>			
	*MH208759.1 <i>A. niger</i>			
	*MK854747.1 <i>A. niger</i>			
	*MG991342.1 <i>A. niger</i>			
	CCMFBH-886	MT410061		
	CCMFBH-887	MT410062		
	CCMFBH-904	MT410063		
	CCMFBH-905	MT410064		
	CCMFBH-906	MT410065		
	CCMFBH-907	MT410066		
	CCMFBH-908	MT410067		
	CCMFBH-922	MT410068		
	CCMFBH-927	MT410069		

	CCMFBH-937 CCMFBH-946 CCMFBH-947 CCMFBH-951 CCMFBH-952 CCMFBH-954 CCMFBH-966 CCMFBH-971 CCMFBH-982	MT410071 MT410073 MT410074 MT410075 MT410076 MT410078 MT410079 MT410080		
III	*MH614464.1 <i>A. neoniger</i> CCMFBH-839 CCMFBH-857	MT410059 MT410060	<i>A. neoniger</i>	<i>Nigri</i>
IV	*KT326813.1 <i>A. tubingensis</i> *JX545086.1 <i>A. tubingensis</i> *KX231820.1 <i>A. tubingensis</i> CCMFBH-864 CCMFBH-880 CCMFBH-955 CCMFBH-979 CCMFBH-996	MT410082 MT410083 MT410084 MT410085 MT410086	<i>A. tubingensis</i>	<i>Nigri</i>
V	*MH614443.1- <i>A. heteromorphus</i> *MH614573.1 <i>A. heteromorphus</i> *HQ632678.1 - <i>A. heteromorphus</i> * AY585529.1- <i>A. heteromorphus</i> CCMFBH-836 CCMFBH-846 CCMFBH-861 CCMFBH-867 CCMFBH-868 CCMFBH-869 CCMFBH-871 CCMFBH-872 CCMFBH-875 CCMFBH-881 CCMFBH-884 CCMFBH-885 CCMFBH-900 CCMFBH-914 CCMFBH-980 CCMFBH-998 CCMFBH-999	MT410118 MY410125 MT410131 MT410134 MT410135 MT410136 MT410137 MT410138 MT410140 MT410142 MT410143 MT410144 MT410149 MT410155 MT410175 MT410180 MT410181	<i>A. heteromorphus</i>	<i>Nigri</i>
VI	*EU159220.1- <i>A. aculeatinus</i> CCMFBH-909	MT410151	<i>A. aculeatinus</i>	<i>Nigri</i>

	CCMFBH-913	MT410154		
VII	*EU076293.1- <i>A. tritici</i> CCMFBH-959	MT410168	<i>A. tritici</i>	<i>Candidi</i>
VIII	LT627280.1 <i>A. chevalieri</i> LT627272.1 <i>A. chevalieri</i> CCMFBH-912 CCMFBH-935	MT410153 MT410163	<i>A. chevalieri</i>	<i>Aspergillus</i>
IX	*KJ775050.1- <i>A. subramanianii</i> *EF661339.1- <i>A. subramanianii</i> *EF661338.1- <i>A. subramanianii</i> CCMFBH-890	MT410146	<i>A. subramanianii</i>	<i>Circumdati</i>
X	*FR839686.2- <i>A. westerdijkiae</i> *JX535306.1- <i>A. westerdijkiae</i> CCMFBH-879 CCMFBH-964 CCMFBH-995	MT410141 MT410169 MT410179	<i>A. westerdijkiae</i>	<i>Circumdati</i>
XI	*EU021662.1- <i>A. ochraceus</i> *EF661322.1- <i>A. ochraceus</i> CCMFBH-917	MT410156	<i>A. ochraceus</i>	<i>Circumdati</i>
XII	*FM995525.1 <i>A. melleus</i> *FM995526.1 <i>A. melleus</i> CCMFBH-838 CCMFBH-919 CCMFBH-930 CCMFBH-989	MT410119 MT410157 MT410161 MT410177	<i>A. melleus</i>	<i>Circumdati</i>
XIII	*EF652106.1- <i>A. wentii</i> CCMFBH-873	MT410139	<i>A. wentii</i>	<i>Cremeri</i>
XIV	*KJ777803.1- <i>A. calidoustus</i> CCMFBH-940	MT410164	<i>A. calidoustus</i>	<i>Usti</i>
XV	* KX455751.1- <i>A. versicolor</i> CCMFBH-950 CCMFBH-972	MT410167 MT410173	<i>A. versicolor</i>	<i>Versicolores</i>
XVI	* MG831183.1 - <i>A. sydowii</i> * KU737555.1 <i>A. sydowii</i> CCMFBH-835 CCMFBH-862 CCMFBH-874	MT410087 MT410088 MT410089	<i>A. sydowii</i>	<i>Versicolores</i>

	CCMFBH-889 CCMFBH-899 CCMFBH-916 CCMFBH-960 CCMFBH-973 CCMFBH-974 CCMFBH-987 CCMFBH-990	MT410090 MT410091 MT410092 MT410093 MT410094 MT410095 MT410096 MT410097		
XVII	*KJ775092.1- <i>A. templicola</i> KJ775087.1- <i>A. templicola</i> CCMFBH-967	MT410171	<i>A. templicola</i>	<i>Flavipedes</i>
XVIII	*KJ775085.1- <i>A. micronesiensis</i> CCMFBH-920 CCMFBH-965 CCMFBH-969	MT410158 MT410170 MT410172	<i>A. micronesiensis</i>	<i>Flavipedes</i>
XIX	*MG991317.1- <i>A. tamaraii</i> *MH279885.1- <i>A. tamaraii</i> CCMFBH-850 CCMFBH-853 CCMFBH-854 CCMFBH-895 CCMFBH-902 CCMFBH-911 CCMFBH-924 CCMFBH-933 CCMFBH-976 CCMFBH-985 CCMFBH-1000	MT410126 MT410127 MT410128 MT410148 MT410150 MT410152 MT410159 MT410162 MT410174 MT410176 MT410182	<i>A. tamaraii</i>	<i>Flavi</i>
XX	*AF255067.1- <i>A. nomius</i> *KP418578.1 <i>A. nomius</i> CCMFBH-866	MT410133	<i>A. nomius</i>	<i>Flavi</i>
XXI	*F669489.1 <i>A. oryzae</i> CCMFBH-888	MT410145	<i>A. oryzae</i>	<i>Flavi</i>
XXII	*MN148880.1 <i>A. flavus</i> *KY272750.1 <i>A. flavus</i> CCMFBH-837 CCMFBH-847 CCMFBH-856 CCMFBH-858 CCMFBH-870 CCMFBH-891	MT347711 MT347712 MT347713 MT347714 MT347715 MT347716	<i>A. flavus</i>	<i>Flavi</i>

	CCMFBH-892 CCMFBH-896 CCMFBH-918 CCMFBH-923 CCMFBH-925 CCMFBH-929 CCMFBH-938 CCMFBH-948 CCMFBH-956 CCMFBH-968 CCMFBH-970 CCMFBH-984 CCMFBH-986 CCMFBH-992	MT347717 MT347718 MT347719 MT347720 MT410160 MT347721 MT347722 MT347723 MT347724 MT347725 MT347726 MT347727 MT347728 MT347729		
XXIII	*MG991380.1- <i>A. fumigatus</i> *MG991403.1- <i>A. fumigatus</i> CCMFBH-876 CCMFBH-878 CCMFBH-921 CCMFBH-953 CCMFBH-958 CCMFBH-961 CCMFBH-962 CCMFBH-963 CCMFBH-977 CCMFBH-978	MT347701 MT347702 MT347703 MT347704 MT347705 MT347706 MT347707 MT347708 MT347709 MT347710	<i>A. fumigatus</i>	<i>Fumigati</i>
XXIV	*EU076336.1- <i>A. giganteus</i> *EU076337.1- <i>A. giganteus</i> *EU076338.1- <i>A. giganteus</i> CCMFBH-859 CCMFBH-860	MT410129 MT410130	<i>A. giganteus</i>	<i>Clavati</i>
XXV	* KX455765.1- <i>A. clavatus</i> * KF669483.1 - <i>A. clavatus</i> CCMFBH-841 CCMFBH-842 CCMFBH-843 CCMFBH-844 CCMFBH-863 CCMFBH-941 CCMFBH-945 CCMFBH-1001	MT410121 MT410122 MT410123 MT410124 MT410132 MT410165 MT410166 MT410183	<i>A. clavatus</i>	<i>Clavati</i>
XXVI	*HQ632671.1 <i>A. aculeatus</i>		<i>A. aculeatus</i>	<i>Nigri</i>

	CCMFBH-993	MT410178		
XXVII	*FJ491685.1- <i>A. violaceofuscus</i> *FJ491686.1- <i>A. violaceofuscus</i> CCMFBH-893	MT410147	<i>A. violaceofuscus</i>	<i>Nigri</i>

* Reference sequences used for maximum likelihood analysis