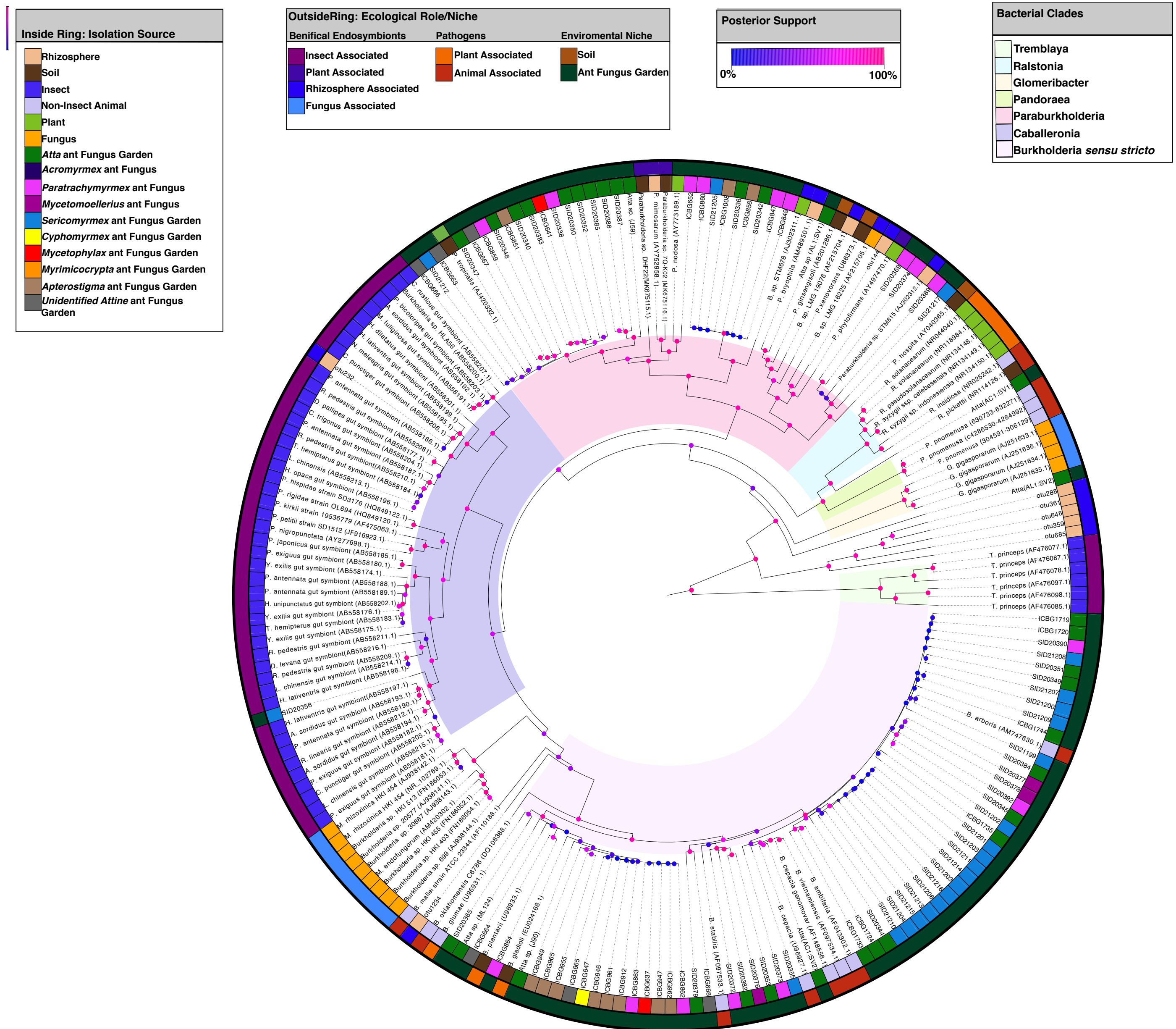


Table S1. Post-hoc pairwise Student's t-test results for the zones of inhibition of *Escovopsis* spp. by all 32 *Burkholderiaceae* isolates

	n	mean	sd	ICBG1719	ICBG1720	ICBG1735	ICBG1724	SID20373	SID20355	SID20345	SID20349	SID20390	SID20384	SID20378	SID20392	SID20365	ICBG637	ICBG955	ICBG849	SID20336	ICBG860	SID20340	SID21199	SID21202	SID21203	SID21204	SID21206	SID21208	SID21210	SID21211	SID21212	SID21213	SID21214	SID21215	SID21216		
ICBG1719	8	2.5079	0.15035		0.8007	0.7993	0.3924	0.2717	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ICBG1720	8	2.4541	0.15035	0.8007		0.9986	0.2684	0.177	0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ICBG1735	8	2.4538	0.15035	0.7993	0.9986		0.2676	0.1764	0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ICBG1724	8	2.6901	0.15035	0.3924	0.2684	0.2676		0.8066	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SID20373	8	2.7423	0.15035	0.2717	0.177	0.1764	0.8066		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
SID20355	8	1.6995	0.15035	0.0002	0.0005	0.0005	<0.001	<0.001		<0.001	<0.001	0.0002	0.0009	<0.001	<0.001	0.0022	0.0001	0.0021	<0.001	<0.001	<0.001	0.0009	0.0853	0.1161	0.1341	0.0362	<0.001	0.3252	0.1517	<0.001	0.1861	0.2488	0.0015	0.118			
SID20345	8	0.8291	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		0.0002	0.7989	0.4755	0.6445	0.8248	0.3254	0.8856	0.3306	0.0042	0.0031	0.0003	0.0103	0.9759	0.0407	0.0282	0.0234	0.1402	0.7938	0.0099	0.0327	0.0207	0.0247	0.0091	0.5704	0.0276		
SID20349	8	0.0246	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		0.0002	<0.001	<0.001	0.0011	0.0005	<0.001	0.0001	<0.001	0.3761	0.4325	0.8893	0.2346	0.0025	<0.001	<0.001	<0.001	<0.001	0.0014	<0.001	<0.001	0.2434	<0.001	<0.001	<0.001	<0.001		
SID20390	8	0.8834	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	0.0002	0.7989	<0.001		0.6462	0.4741	0.6341	0.4658	0.9116	0.4723	0.0019	0.0014	0.0001	0.0049	0.8117	0.0697	0.0497	0.0418	0.2101	0.619	0.0183	0.0554	0.011	0.0428	0.0175	0.7401	0.0488		
SID20384	8	0.9811	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	0.0009	0.4755	<0.001	0.6462		0.2407	0.3502	0.7867	0.5688	0.7948	0.0004	0.0003	<0.001	0.0011	0.54	0.1635	0.1229	0.1061	0.3941	0.3568	0.0495	0.1291	0.0031	0.1034	0.0501	0.9257	0.121		
SID20378	8	0.7309	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.6445	0.0011	0.4741	0.2407		0.8102	0.1492	0.5451	0.1522	0.0158	0.012	0.0017	0.0345	0.7289	0.0137	0.009	0.0073	0.0607	0.8683	0.003	0.0114	0.0582	0.0083	0.0025	0.3204	0.0088		
SID20392	8	0.782	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.8248	0.0005	0.6341	0.3502	0.8102		0.2287	0.715	0.2328	0.0081	0.0061	0.0008	0.0188	0.8803	0.0246	0.0166	0.0136	0.0954	0.9549	0.0057	0.02	0.0346	0.0149	0.005	0.4401	0.0162		
SID20365	8	1.0388	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	0.0022	0.3254	<0.001	0.4658	0.7867	0.1492	0.2287		0.4009	0.9916	0.0001	<0.001	<0.001	0.0004	0.4046	0.2525	0.1956	0.1714	0.5383	0.2416	0.0836	0.1999	0.0014	0.1636	0.087	0.731	0.1929		
ICBG637	8	0.8598	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	0.0001	0.8856	0.0001	0.9116	0.5688	0.5451	0.715	0.4009		0.4068	0.0027	0.0019	0.0002	0.0068	0.8826	0.0554	0.039	0.0326	0.1771	0.6932	0.0141	0.0443	0.0145	0.0339	0.0133	0.664	0.0383		
ICBG955	8	1.0365	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	0.0021	0.3306	<0.001	0.4723	0.7948	0.1522	0.2328	0.9916		0.4068		0.0001	<0.001	0.0005	0.4095	0.2485	0.1923	0.1684	0.5322	0.2456	0.082	0.1966	0.0014	0.1608	0.0852	0.7383	0.1896		
ICBG849	8	0.2133	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0042	0.3761	0.0019	0.0004	0.0158	0.0081	0.0001	0.0027	0.0001		0.92	0.92	0.4555	0.7606	0.0206	<0.001	<0.001	<0.001	0.0165	<0.001	<0.001	0.7277	<0.001	<0.001	0.0014	<0.001		
SID20336	8	0.1919	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0031	0.4325	0.0014	0.0003	0.012	0.0061	<0.001	0.0019	0.0001		0.92	0.5182	0.6854	0.0166	<0.001	<0.001	<0.001	<0.001	0.0128	<0.001	<0.001	0.6591	<0.001	<0.001	0.0001	<0.001		
ICBG860	8	0.0543	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0003	0.8893	0.0001	<0.001	0.0017	0.0008	<0.001	0.0002	<0.001	0.4555	0.5182		0.2937	0.0036	<0.001	<0.001	<0.001	0.0021	<0.001	<0.001	0.2992	<0.001	<0.001	0.0001	<0.001			
SID20340	8	0.2781	0.15035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0103	0.2346	0.0049	0.0011	0.0345	0.0188	0.0004	0.0068	0.0005	0.7606	0.6854	0.2937		0.0383	<0.001	<0.001	<0.001	0.0002	0.0338	<0.001	<0.001	0.9473	<0.001	<0.001	0.0034	<0.001		
SID21199	4	0.8213	0.21262	<0.001	<0.001	<0.001	<0.001	<0.001	0.0009	0.9759	0.0025	0.8117	0.54	0.7289	0.8803	0.4046	0.8826	0.4095	0.0206	0.0166	0.0036	0.0383		0.0813	0.0618	0.0537	0.1999	0.8492	0.0262	0.065	0.0559	0.0525	0.0268	0.6147	0.0609		
SID21202	6	1.3023	0.1736	<0.001	<0.001	<0.001	<0.001	<0.001	0.0853	0.0407	<0.001	0.0697	0.1635	0.0137	0.0246	0.2525	0.0554	0.2485	<0.001	<0.001	<0.001	0.8335	0.6581	0.0311	0.54	0.8515	<0.001	0.7698	0.5928	0.1644	0.882						
SID21203	6	1.337	0.1736	<0.001	<0.001	<0.001	<0.001	<0.001	0.1161	0.0282	<0.001	0.0497	0.1229	0.009	0.0166	0.1956	0.039	0.1923	<0.001	<0.001	<0.001	<0.001	0.0618	0.8879		0.9449	0.564	0.0218	0.6323	0.9579	<0.001	0.8743	0.6937	0.126	0.994		
SID21204	6	1.354	0.1736	<0.001	<0.001	<0.001	<0.001	<0.001	0.1341	0.0234	<0.001	0.0418	0.1061	0.0073	0.0136	0.1714	0.0326	0.1684	<0.001	<0.001	<0.001	<0.001	0.0537	0.8335	0.9449		0.5204	0.0182	0.6799	0.9895	<0.001	0.9265	0.7454	0.1099	0.9508		
SID21206	5	1.1882	0.19017	<0.001	<0.001	<0.001	<0.001	<0.001	0.0362	0.1402	<0.001	0.2101	0.3941	0.0607	0.0954	0.5383	0.1771	0.5322	<0.001	<0.001	<0.001	0.0002	0.1999	0.6581	0.564	0.5204		0.1052	0.3128	0.5467	0.0006	0.4817	0.3413	0.3759	0.5592		
SID21208	6	0.769	0.1736	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.7938	0.0014	0.619	0.3568	0.8683	0.9549	0.2416	0.6932	0.2456	0.0165	0.0128	0.0021	0.0338	0.8492	0.0311	0.0218	0.0182	0.1052		0.0079	0.025	0.0542	0.0191	0.0074	0.4383	0.0213		
SID21210	5	1.4604	0.19017	<0.001	<0.001	<0.001	<0.001	<0.001	0.3252	0.0099	<0.001	0.0183	0.0495	0.003	0.0057	0.0836	0.0141	0.082	<0.001	<0.001	<0.001	0.0262	0.654	0.6323	0.6799	0.3128		0.0079	0.6835	<0.001	0.7591	0.9179	0.0533	0.6374			
SID21211	5	1.3506	0.19017	<0.001	<0.001	<0.001	<0.001	<0.001	0.1517	0.0327	<0.001	0.0554	0.1291	0.0114	0.02	0.1999	0.0443	0.1966	<0.001	<0.001	<0.001	0.065	0.8515	0.9579	0.9895	0.5467	0.025	0.6835		<0.001	0.9195	0.7469	0.1				

A 16S rRNA phylogenetic tree



B Whole genome phylogenetic tree

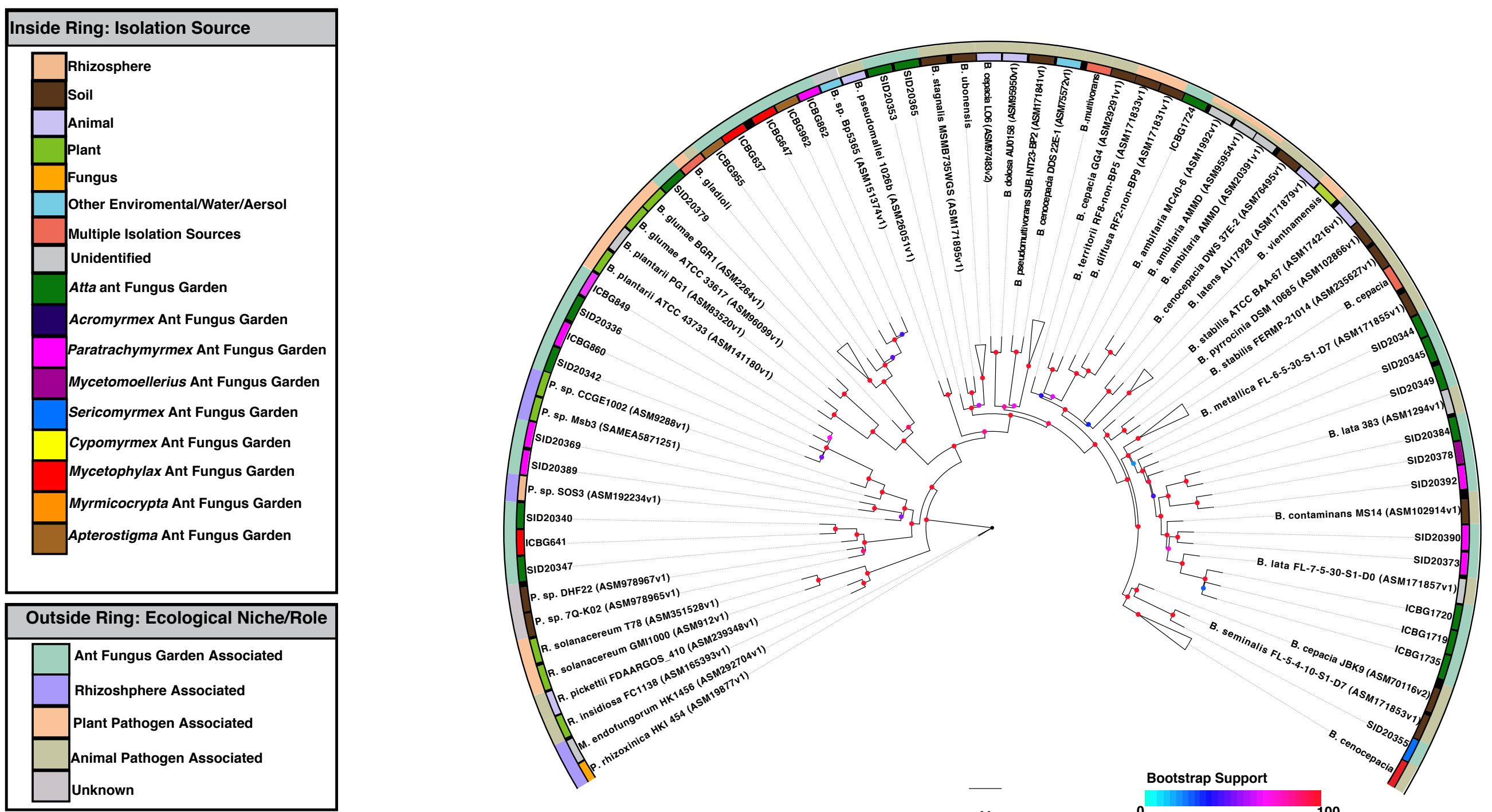


Figure S1. 16S rRNA gene (A) and whole genome (B) phylogenies of *Burkholderiaceae* isolates.

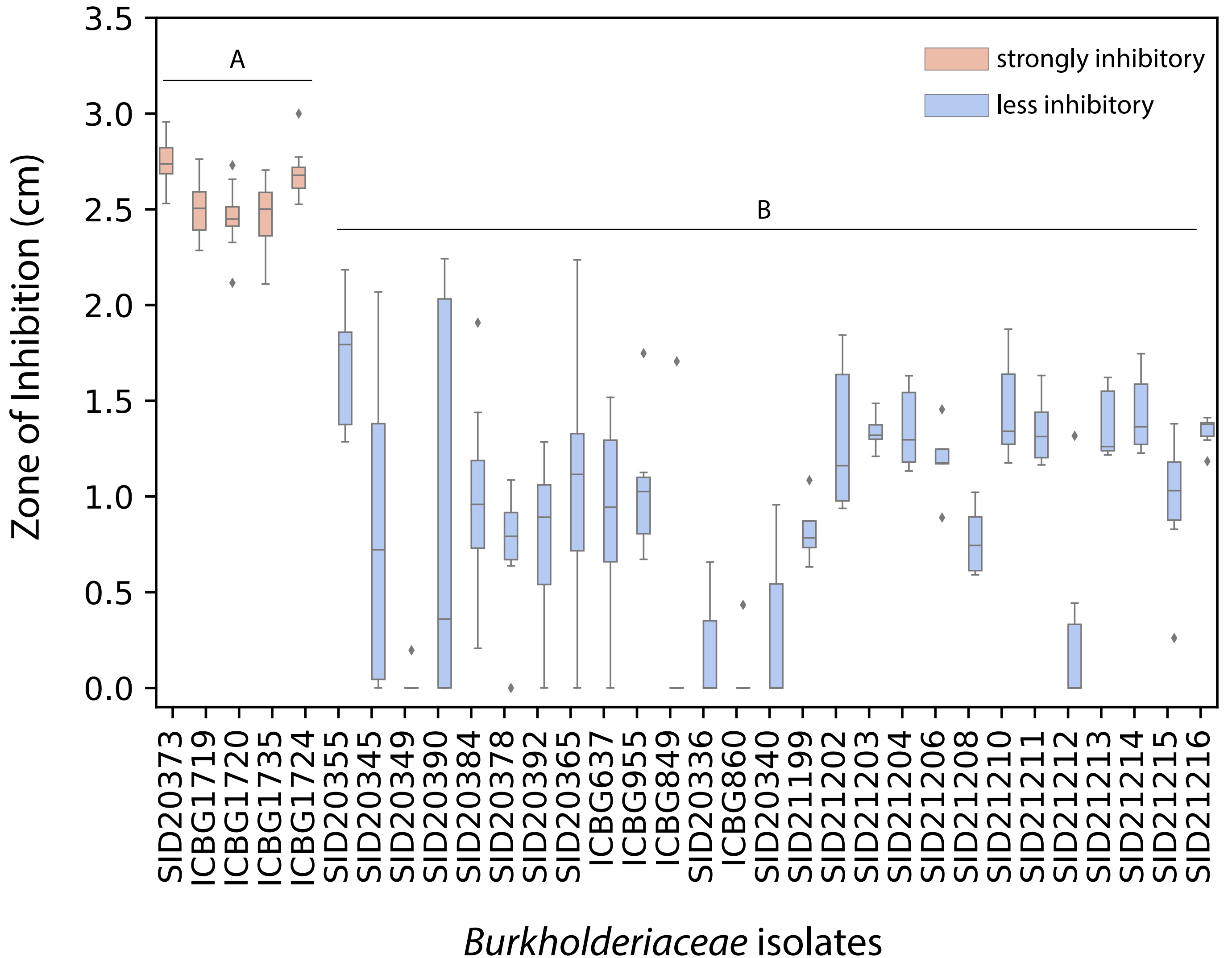


Figure S2. Zones of inhibition (ZOI) of *Escovopsis* spp. by all 32 *Burkholderiaceae* isolates. Red boxplots indicate isolates with significantly higher ZOIs (ZOI \geq 2.45 cm). Blue box-plots have significantly lower ZOIs (ZOI < 2.45 cm). A one-way ANOVA test [F(31,192)=24.41, $p < 0.0001$] was used to assess significance between strong inhibitory and less inhibitory isolates. The post-hoc Student's t-test between all pairings are provided in Table S1.

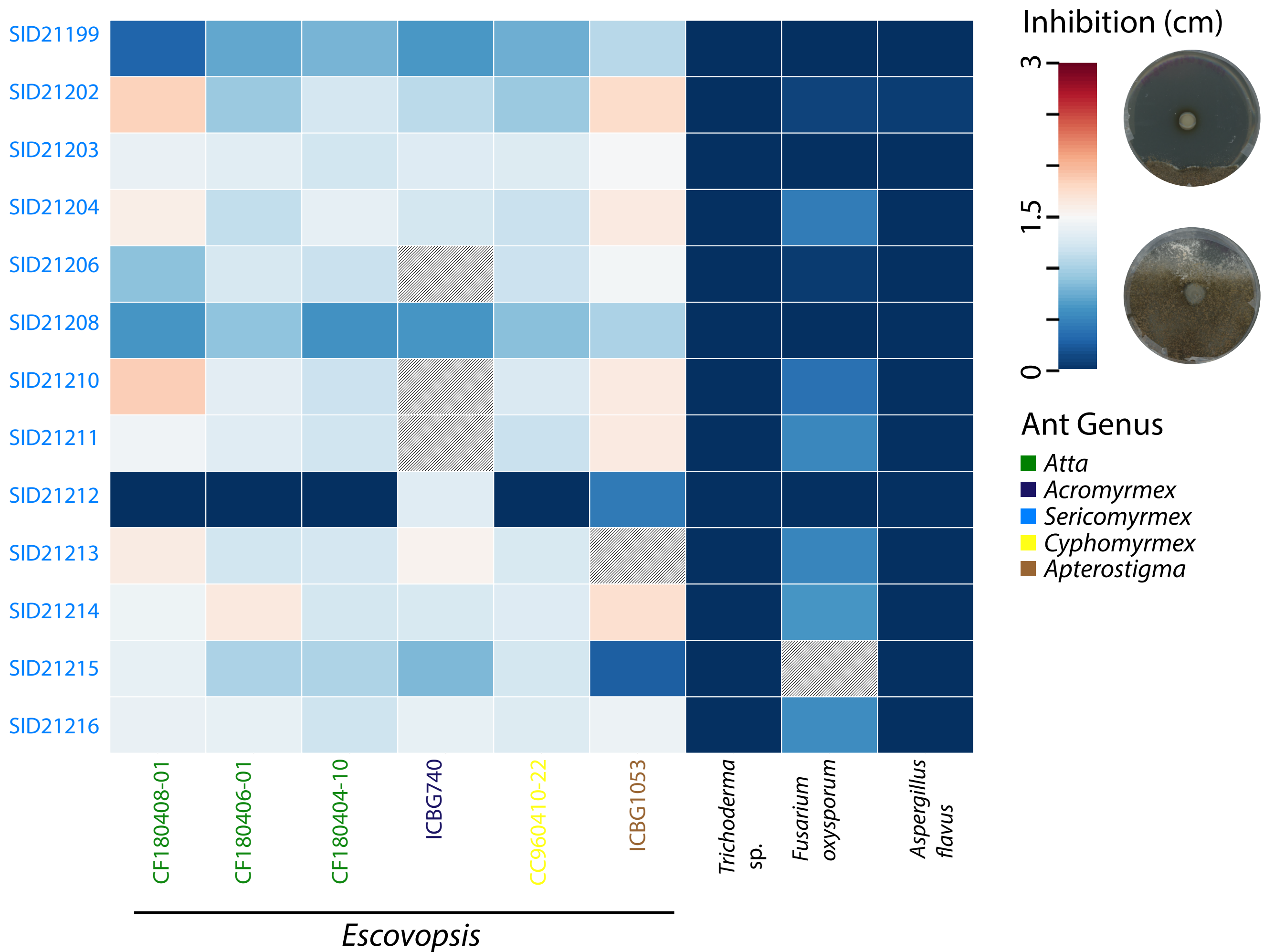
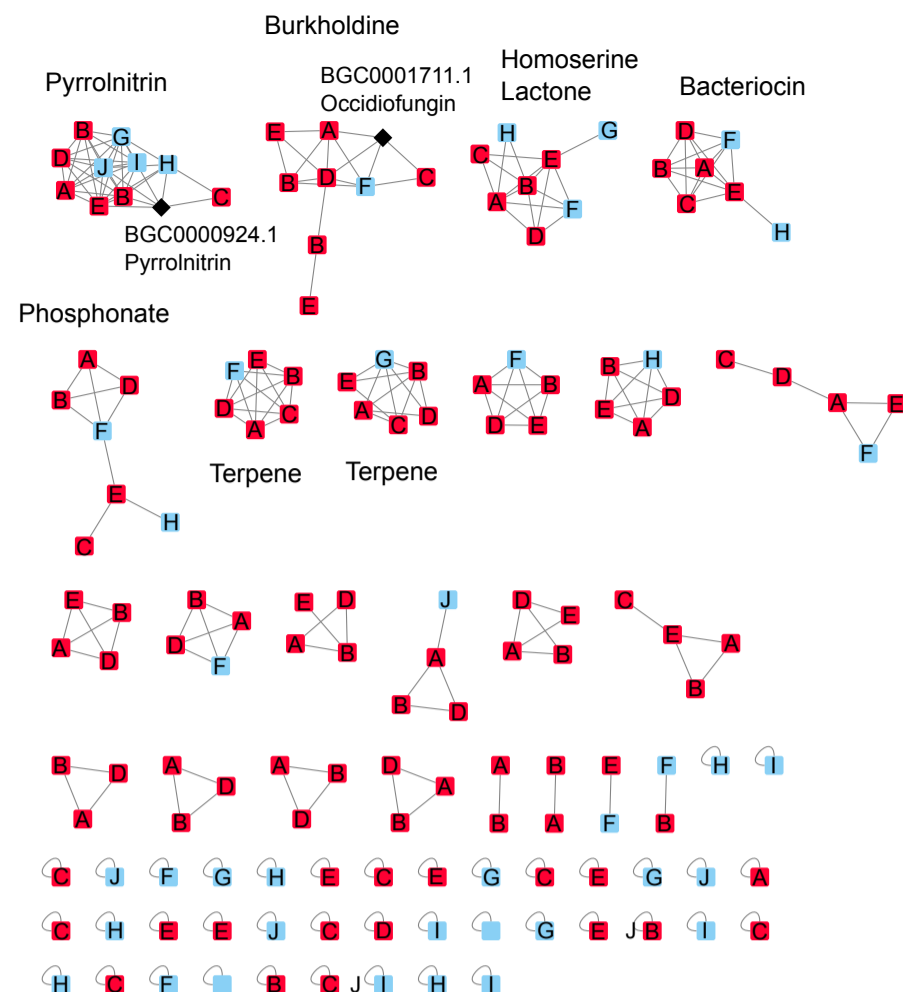


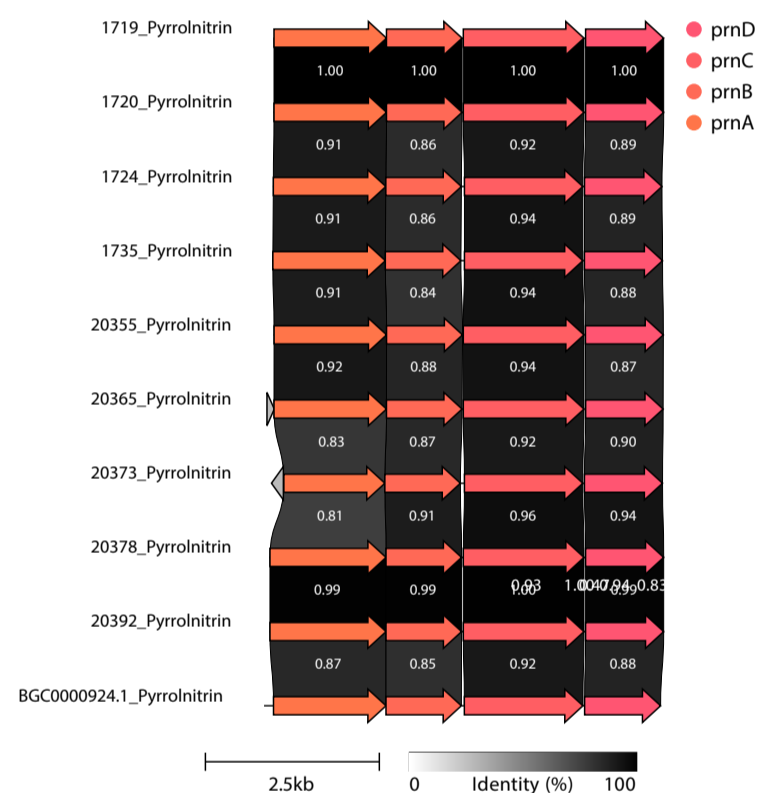
Figure S3. 13 additional *Burkholderiaceae* isolates from *Sericomyrmex amabilis* colonies were tested against *Escovopsis* spp. Hatched squares indicate the pairings that could not be measured due to various contamination and growth complications.

A

A - 1719
B - 1720
C - 1724
D - 1735
E - 20373
F - 20345
G - 20355
H - 20365
I - 20378
J - 20392



B



C

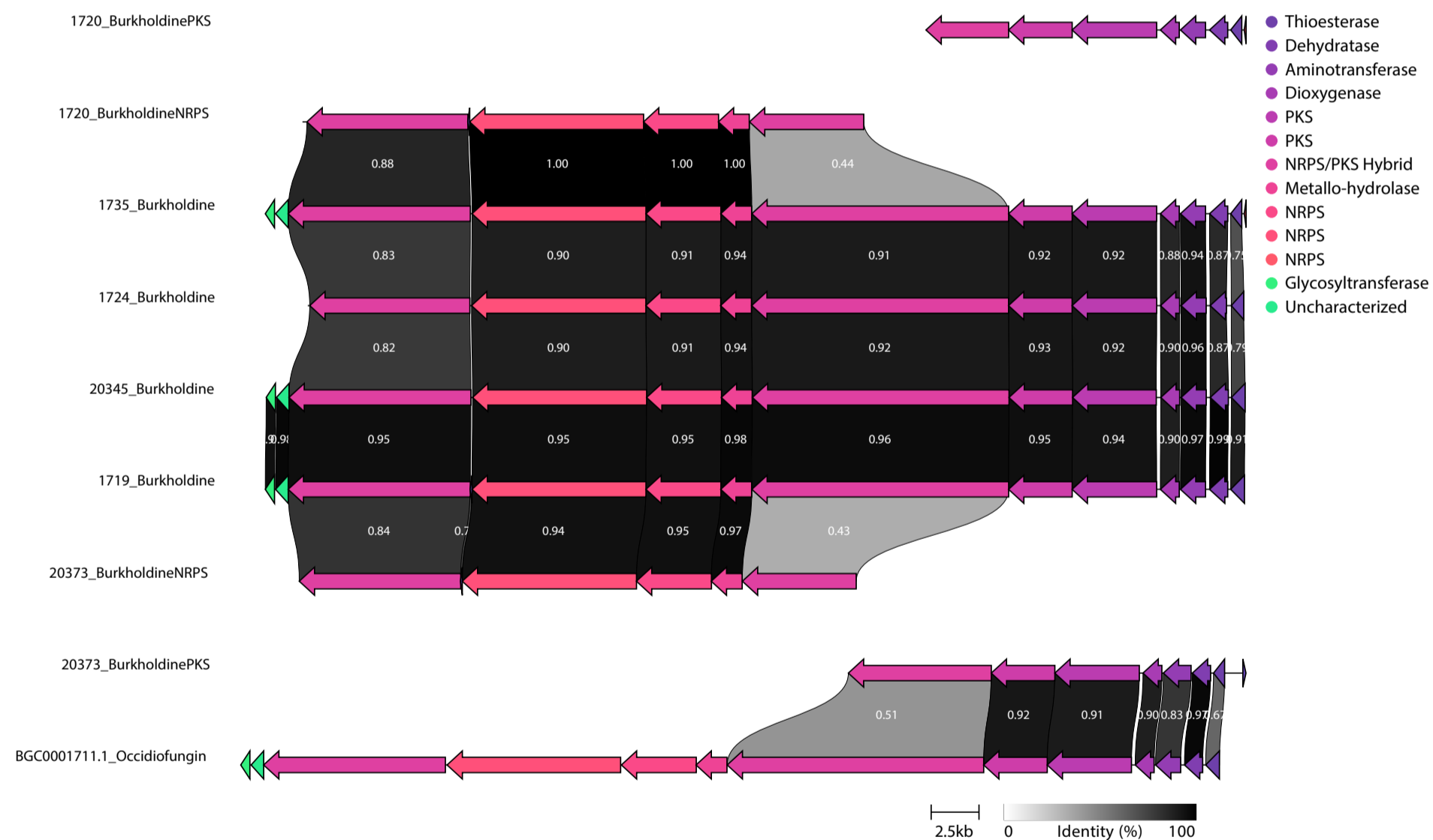


Figure S4. (A) BiG-SCAPE analysis of selected *Burkholderia* isolates. Red nodes represent biosynthetic gene clusters (BGCs) that were detected in strong inhibitory strains and blue nodes represent BGCs detected in non-inhibitory strains. Black diamond nodes represent characterized BGCs from the MIBiG database. Nodes are labeled by the genomes of the strains they were detected in and subnetworks that contain all inhibitory strains are labeled based on their antiSMASH designation or closest match to a known MIBiG BGC. (B) Alignment and percent similarity of the pyrrolnitrin BGCs identified by antiSMASH and the characterized pyrrolnitrin BGC from the MIBiG database. Arrows that are the same color represent genes that share at least 75% similarity. (C) Alignment and percent similarity of the burkholdine BGCs identified by antiSMASH and the characterized occidiofungin BGC from the MIBiG database. Arrows that are the same color represent genes that share at least 75% identity. The burkholdine BGCs for ICBG1720 and SID20373 were split across separate contigs; however, they share strong similarity to the complete BGCs in other strains.

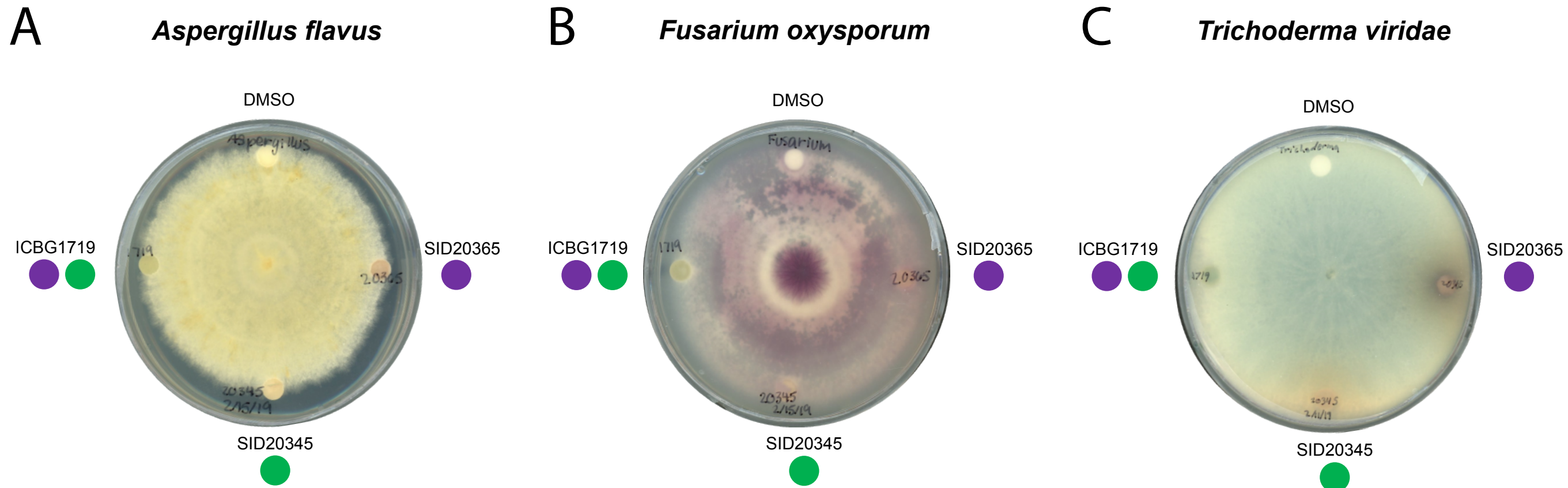


Figure S5. Disc diffusion assay of extracts from ICBG1719 (contains both pyrrolnitrin and burkholdine1213) and a combined extract of SID20345 (contains burkholdine1213) and SID20365 (contains pyrrolnitrin) against (A) *Aspergillus flavus* (B) *Fusarium oxysporum* and (C) *Trichoderma* sp. Green circles indicate the presence of burkholdine1213 and purple circles indicate the presence of pyrrolnitrin.

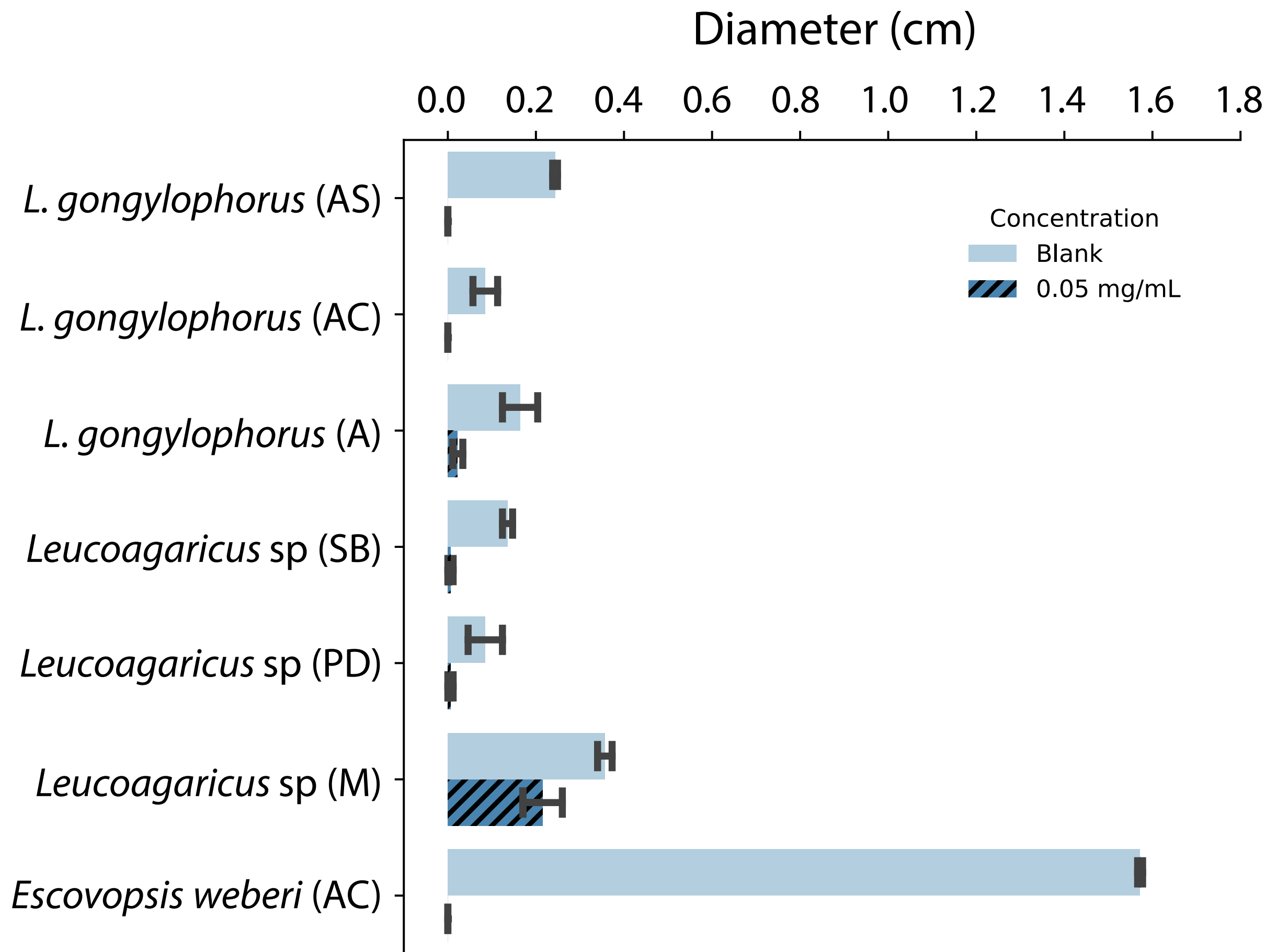


Figure S6. *Leucoagaricus* spp. and *Escovopsis weberi* (CF180408-01) grown on agar containing 0.05 mg/mL ICBG1719 extract (contains both pyrrolnitrin and burkholdine1213). Bar graph indicates the growth of *Leucoagaricus* spp. (n=2 for each strain) and *Escovopsis weberi* (n=3) after six days of growth on agar containing no extract (blank) or 0.05 mg/mL extract. AS = *Atta sexdens*, AC=*Atta cephalotes*, A=*Acromyrmex* sp., SB=*Sericomyrmex bondari*, PD=*Paratrachymyrmex diversus*, M=*Myrmicocrypta* sp.