

Supplementary Table 1. Sequencing and processing statistics of the metagenomic samples.

Sample ID	Sequencing platform	Raw reads	Passed QC reads	Total length (bp)	NCBI Accession #
S1_metagenome	Element Aviti ONT minION	17,975,886	17,872,628 129,164	2,538,312,310 252,770,999	SRR33970704 SRR33985142
S2_metagenome	Element Aviti ONT minION	22,422,592	22,364,439 384,367	3,157,104,717 599,171,501	SRR33970703 SRR33985141
S3_metagenome	Element Aviti ONT minION	19,871,805	19,788,741 890,794	2,803,403,493 1,566,941,961	SRR33970692 SRR33985130
S4_metagenome	Element Aviti ONT minION	20,023,429	19,929,781 837,262	2,817,515,123 2,088,054,664	SRR33970689 SRR33985127
S5_metagenome	Element Aviti ONT minION	15,897,467	15,807,219 495,504	2,274,222,522 1,003,292,940	SRR33970688 SRR33985126
S6_metagenome	Element Aviti ONT minION	21,651,088	21,535,381 866,793	3,051,412,712 1,746,519,947	SRR33970687 SRR33985125
S7_metagenome	Element Aviti ONT minION	24,243,137	24,116,262 398,697	3,401,833,314 837,192,731	SRR33970686 SRR33985124
S8_metagenome	Element Aviti ONT minION	19,664,635	19,530,878 33,020	2,791,386,607 45,858,303	SRR33970685 SRR33985123
S9_metagenome	Element Aviti ONT minION	22,881,685	22,759,355 770,448	3,160,180,411 1,579,702,008	SRR33970684 SRR33985122
S10_metagenome	Element Aviti ONT minION	28,974,799	28,780,035 203,670	3,758,004,607 271,335,874	SRR33970683 SRR33985121
S11_metagenome	Element Aviti ONT minION	17,054,322	16,968,763 246,308	2,337,166,430 478,367,498	SRR33970702 SRR33985140
S12_metagenome	Element Aviti ONT minION	19,952,050	19,839,291 436,101	2,782,704,132 991,821,806	SRR33970701 SRR33985139
S13_metagenome	Element Aviti ONT minION	18,989,949	18,841,988 522,361	2,658,329,398 890,795,698	SRR33970700 SRR33985138
S14_metagenome	Element Aviti ONT minION	20,067,677	19,953,755 575,322	2,784,544,163 1,042,730,089	SRR33970699 SRR33985137
S15_metagenome	Element Aviti ONT minION	17,250,042	17,139,494 315,795	2,427,442,022 459,883,830	SRR33970698 SRR33985136
S16_metagenome	Element Aviti ONT minION	23,478,780	23,363,081 195,395	3,268,764,035 316,739,893	SRR33970697 SRR33985135
S17_metagenome	Element Aviti ONT minION	20,460,249	20,370,742 650,679	2,839,249,607 1,040,296,297	SRR33970696 SRR33985134
S18_metagenome	Element Aviti ONT minION	18,071,477	18,006,121 1,083,545	2,490,501,344 1,705,852,807	SRR33970695 SRR33985133
S19_metagenome	Element Aviti ONT minION	17,383,201	17,305,707 819,916	2,404,903,831 1,324,661,297	SRR33970694 SRR33985132
S20_metagenome	Element Aviti ONT minION	21,120,995	21,017,911 874,956	2,907,972,074 1,457,187,365	SRR33970693 SRR33985131
S21_metagenome	Element Aviti ONT minION	20,705,513	20,627,062 25,420	2,833,099,359 18,834,578	SRR33970691 SRR33985129
S22_metagenome	Element Aviti ONT minION	20,552,412	20,470,741 196,092	2,845,904,317 240,493,793	SRR33970690 SRR33985128
NEG_metagenome	Element Aviti	8,064	6,933	952,619	SRR34400844

Supplementary Table 2. Summary statistics of the metagenome (co)assemblies.

Assembly ID	Number of contigs	Total length (bp)	GC %	N50
Co_all_aviti	1,085,346	2,323,469,736	49.39	2,217
Before_aviti	493,902	1,068,958,779	46.79	2,267
After_aviti	618,692	1,290,359,328	51.95	2,267
P1_aviti	212,671	457,473,019	47.59	2,275
P2_aviti	244,194	514,304,726	46.17	2,090
P3_aviti	203,092	408,538,361	51.44	2,042
P4_aviti	243,488	521,182,794	53.28	2,076
P5_aviti	227,039	457,174,042	50.69	1,957
Co_all_minION	116,784	957,240,678	51.33	10,891

Supplementary Table 3. Sequencing and processing statistics of the metatranscriptomic samples.

Sample ID	Raw reads	Passed QC reads	Sorted reads	Total length (bp)	NCBI Accession #
S1 metatranscriptome	20,233,008	20,154,069	6,773,832	990,336,796	SRR34006962
S2 metatranscriptome	64,620,637	64,453,363	17,982,114	2,627,708,824	SRR34006961
S3 metatranscriptome	52,525,451	52,073,690	8,782,096	1,262,314,141	SRR34006952
S4 metatranscriptome	53,050,352	52,045,919	12,262,238	1,758,775,896	SRR34006951
S5 metatranscriptome	18,292,254	18,230,911	4,085,434	600,598,287	SRR34006950
S6 metatranscriptome	55,727,641	55,578,869	9,483,251	1,371,565,547	SRR34006949
S7 metatranscriptome	42,423,793	42,033,225	13,118,815	1,902,336,119	SRR34006948
S8 metatranscriptome	46,495,225	46,364,083	14,705,683	2,165,308,818	SRR34006947
S9 metatranscriptome	20,812,673	20,693,264	3,920,999	564,414,613	SRR34006946
S10 metatranscriptome	42,487,093	42,314,597	9,347,866	1,258,805,225	SRR34006945
S11 metatranscriptome	31,127,613	30,155,685	10,557,139	1,254,181,055	SRR34006960
S12 metatranscriptome	42,559,184	42,086,345	5,488,240	745,707,188	SRR34006959
S13 metatranscriptome	16,364,398	16,274,759	3,723,548	519,220,875	SRR34006958
S14 metatranscriptome	17,808,665	17,707,449	7,738,535	1,083,007,447	SRR34006957
S15 metatranscriptome	22,401,834	22,013,778	4,793,773	673,334,360	SRR34006956
S16 metatranscriptome	18,725,893	18,322,687	5,726,269	749,951,171	SRR34006955
S17 metatranscriptome	1,218,748	1,177,389	828,505	103,974,090	SRR34006954
S18 metatranscriptome	28,197,374	28,123,379	4,526,202	662,206,706	SRR34006953
NEG metatranscriptome	1,354,971	1,232,745	345,270	45,438,011	SRR34400843