SUPPLEMENTARY MATERIAL for:

From proteins to polysaccharides; lifestyle and genetic evolution of *Coprothermobacter proteolyticus*.

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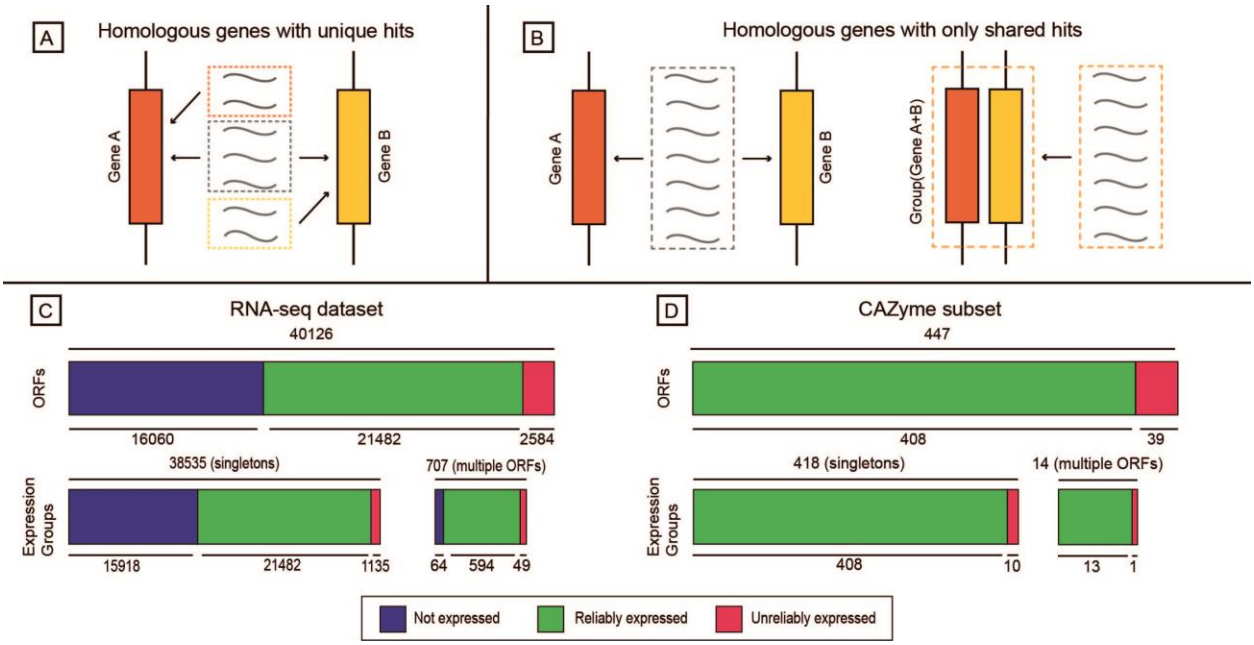
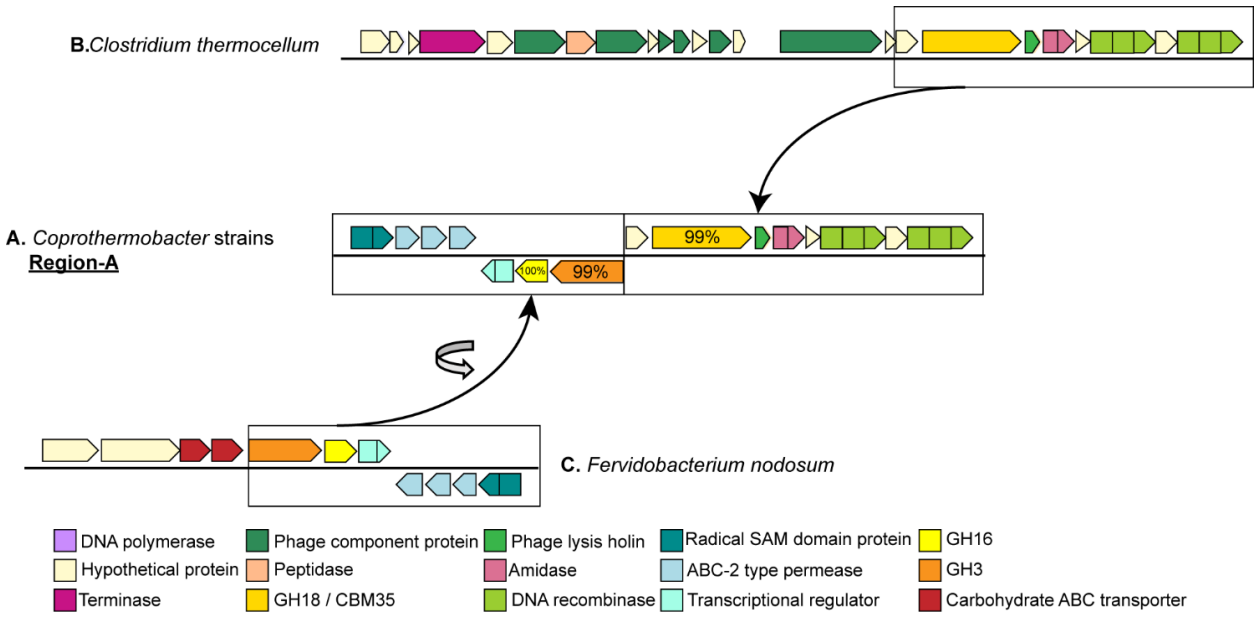
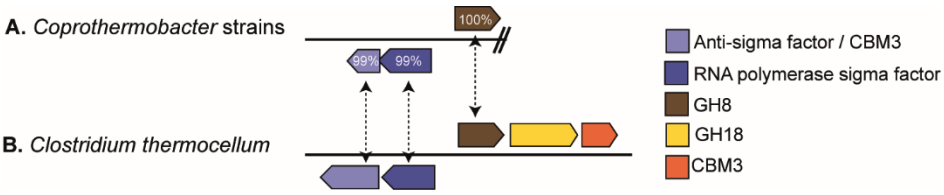
This PDF file includes:



Supplementary Figure 1. Workflow used for RNA-seq quantification and generation of expression groups. **A** and **B** illustrate (respectively) the grouping of genes when unique reads are present (**A**) and when there are not (**B**). In **A,** genes A and B are homologous, and a set of reads maps uniquely to either gene A or to gene B. The subsequent unique sets can be used to sort the ambiguous reads that map on both genes. In **B**, genes A and B are homologous and no unique reads map exclusively to either gene. The two genes cannot be separated and thus their expression cannot be reliably estimated. Instead of losing the information, the genes are merged into an expression group. **C** and **D** represent the effect of collapsing genes into expression groups on the total dataset (**C**), and the reduced dataset focused on CAZymes (**D**).



Supplementary Figure 2. Gene synteny of CAZymes within region-A encoded in *BWF2A* and *SW3C* genomes. **A, B** and **C** represent the gene organization of CAZymes within region-A encoded in *BWF2A* and *SW3C* (see **Figure 3**), as well as similar operons found in *C. thermocellum* and *Fervidobacterium nodosum.* Gene similarity is indicated in selected examples, and can be found in detail in **Supplementary Table 5**.



Supplementary Figure 3. Gene organization of selected cellulosomal genes found in the *BWF2A* (A), compared against a similar operon found in *C. thermocellum* (B). Gene similarity is indicated.

Supplementary Table 1. Anaerobic biogas reactors with reported *Coprothermobacter proteolyticus*-affiliated populations. Date, location, reactor substrate and the presence /absence of cellulose are listed. The SEM1b consortium from this study is highlighted in yellow.

Date	Location	Substrate	Cellulose	Hemicellulose	16S	Reference
2018	Norway I	Cellulose (C)	YES (88.3%)	YES (9.3 %)	YES	This study
2017	Denmark	Food waste, Grass clippings (FW, C)	YES	YES	YES	(Fitamo *et al.*, 2017)
2017	Singapore	wastewater treatment plant sludge (S)	YES	n.a.	YES	(Chen *et al.*, 2017)
2017	Japan I	Acetate/sludge (Ac/S)	NO	NO	YES	(Kouzuma *et al.*, 2017)
2016	Norway II	Food waste (FW)	YES	YES	YES	(Hagen *et al.*, 2017)
2016	Korea	Seaweeds (SW)	YES	NO	YES	(Azizi *et al.*, 2016)
2016	Australia I	wastewater treatment plant sludge (S)	n.a.	n.a.	YES	(Ho *et al.*, 2016)
2016	China I	Food waste (FW)	Yes	n.a.	YES	(Chen *et al.*, 2016)
2015	Michigan	wastewater treatment plant sludge (S)	n.a.	n.a.	YES	(Sun *et al.*, 2015)
2015	China II	wastewater treatment plant sludge (S)	n.a.	n.a.	YES	(Yu *et al.*, 2015)
2015	Roma Italy	wastewater treatment plant sludge (S)	NO	NO	YES	(Gagliano *et al.*, 2015)
2014	France	Municipal Solid Waste / Office Paper (C)	YES (70%)	YES (30%)	YES	(Lü *et al.*, 2014)
2013	Australia II	wastewater treatment plant sludge (S)	n.a.	n.a.	YES	(Pervin *et al.*, 2013)
2008	Japan II	wastewater treatment plant sludge (S)	NO	NO	YES	(Kobayashi *et al.*, 2008)

Supplementary Table 2. 16S rRNA analysis of the SEM1b consortium. Taxonomic composition of two separate samples (D1B and D2B), collected from a continuous SEM1b culture. D2B is 15 generations older than D1B. Consensus lineage was determined via QIIME. Closest relatives were determined using BLASTn.

OTU ID	D1B (%)	D2B (%)	Average (%)	Consensus Lineage	Closest relative (BlastN)
OTU-1.1	55.3 (+/- 2.4)	45.2 (+/- 0.2)	50.2	*Clostridium*	*C. thermocellum*
OTU-2.1	26.5 (+/- 1.3)	31.4 (+/- 0.1)	29	*Coprothermobacter*	*C. proteolyticus*
OTU-2.2	10.6 (+/- 0.3)	12.6 (+/- 0.1)	11.6	*Coprothermobacter*	*C. proteolyticus*
OTU-3.1	0	6.9 (+/- 0.04)	3.5	*Anaerobaculum*	*Acetomicrobium mobile*
OTU-4	1.5 (+/- 0.2)	2.8 (+/- 0.1)	2.2	*Tepidimicrobium*	*Tepidimicrobium*
OTU-5	3.7 (+/- 1)	0	1.9	*Clostridium*	*Uncultured bacterium*
OTU-2.3	0.4 (+/- 0.1)	0.4 (+/- 0.03)	0.4	*Coprothermobacter*	*C. proteolyticus*
OTU-3.2	0	0.6 (+/- 0)	0.3	*Anaerobaculum*	*Uncultured Anaerobaculum*
OTU-6.1	1.2 (+/- 0.2)	0	0.6	*Thermoanaerobacterales*	*Tepidanaerobacter*
OTU-6.2	0.7 (+/- 0.2)	0	0.35	*Thermoanaerobacterales*	*Tepidanaerobacter*
OTU-1.2	0.1 (+/- 0)	0	0.05	*Clostridium*	*C. thermocellum*
OTU-7	0.02 (+/- 0.006)	0.02 (+/- 0.005)	0.02	*Methanothermobacter*	*Methanothermobacter*

Supplementary Table 3. CheckM and ANI analyses. Statistics of the metagenome-recovered genomes (MAGs) from the SEM1b consortium as assessed by CheckM and average nucleotide identities (ANI), which were calculated against their closest relative.

MAG Id	Completeness	Contamination	Heterogeneity	Size (Mb)	Closest relative	ANI (%)
RCLO1	98.7	0.0	0.0	3.2	*C. thermocellum* ATCC27405	99.8
COPR1	98.2	5.4	100.0	1.8	*C proteolyticus* DSM5265	97.8
COPR2	0.0	0.0	0.0	0.3	n.a.	n.a.
COPR3	0.0	0.0	0.0	0.3	n.a.	n.a.
SYNG1	86.4	0.0	0.0	1.4	*Acetomicrobium mobile* DSM13181	98.6
SYNG2	13.6	5.1	100.0	0.8	n.a.	n.a.
TISS1	97.9	0.0	0.0	2.1	*Tepidimicrobium xylanilyticum* DSM23310	75.1
TEPI1	82.2	1.7	0.0	1.9	*Tepidanaerobacter acetatoxydans* Re1	74.4
TEPI2	87.0	11.8	14.3	2.4	*Tepidanaerobacter acetatoxydans* Re1	74.6
CLOS1	98.6	1.4	0.0	3.0	*Clostridium Stercorarium* DSM8532	79.1
METH1	99.9	0.0	0.0	1.7	*Methanothermobacter thermautrophicus*	98.2
Unbinned				7.7	n.a.	n.a.

Supplementary Table 4. CAZyme profiles for selected MAGs and genomes. The total number of annotated domains per CAZy family for each SEM1b MAG/genome are listed. * CAZyme profile for *C. proteolyticus* DSM 5265

CAZy family	RCLO1	CLOS1	TISS1	COPR1	COPR2	COPR3	*BWF2A*	*SW3C*	DSM5265*
AA3	0	0	2	0	0	0	0	0	0
AA6	3	1	3	0	0	0	0	0	0
CBM3	24	0	0	0	0	0	2	1	0
CBM4	8	0	0	0	0	0	0	0	0
CBM6	15	2	0	0	0	0	0	0	0
CBM9	0	1	0	0	0	0	0	0	0
CBM11	1	0	0	0	0	0	0	0	0
CBM13	2	0	0	0	0	0	0	0	0
CBM16	5	1	0	0	0	0	0	0	0
CBM22	4	3	0	0	0	0	0	0	0
CBM25	3	1	0	0	0	0	0	0	0
CBM30	4	0	0	0	0	0	0	0	0
CBM31	1	0	0	0	0	0	0	0	0
CBM32	3	1	0	0	0	0	0	0	0
CBM34	1	0	0	0	0	0	1	1	0
CBM35	6	1	0	0	0	0	1	1	0
CBM37	2	1	0	0	0	0	0	0	0
CBM40	1	0	0	0	0	0	0	0	0
CBM42	2	0	0	0	0	0	0	0	0
CBM44	4	0	0	0	0	0	0	0	0
CBM48	3	2	0	0	0	0	0	0	0
CBM50	15	10	10	0	0	0	0	0	0
CBM54	1	1	0	0	0	1	0	0	0
CBM62	1	0	0	0	0	0	0	0	0
CBM66	0	1	0	1	0	0	0	1	0
CBM67	0	2	0	0	0	0	0	0	0
CE1	3	2	1	2	0	0	2	2	0
CE2	1	0	0	0	0	0	0	0	0
CE3	2	1	0	0	0	0	0	0	0
CE4	5	6	3	4	0	0	2	3	2
CE6	1	0	0	0	0	0	0	0	0
CE7	1	2	0	0	0	0	0	0	0
CE8	1	1	0	0	0	0	0	0	0
CE9	1	2	0	2	0	0	2	2	2
CE10	2	3	2	1	0	0	1	1	0
CE12	2	1	0	0	0	0	0	0	0
CE14	1	0	0	1	0	0	1	1	0
CE15	0	2	0	0	0	0	0	0	0
cohesin	17	0	0	0	0	0	0	0	0
dockerin	61	1	0	0	0	0	4	0	0
GH1	2	1	0	0	0	0	0	0	0
GH2	1	7	0	0	0	0	0	0	0
GH3	2	5	1	0	0	0	1	1	1
GH4	0	5	0	0	0	1	0	0	0

GH5	10	1	0	0	0	0	0	0	0
GH8	1	0	0	0	0	0	2	1	0
GH9	16	1	0	0	0	0	1	1	0
GH10	5	4	0	0	0	0	0	0	0
GH11	2	0	0	0	0	0	0	0	0
GH13	2	3	0	1	0	0	2	2	2
GH15	1	1	0	0	0	0	0	0	0
GH16	2	0	0	0	0	0	1	1	0
GH18	3	4	1	0	0	0	2	2	0
GH23	2	2	1	3	0	0	3	3	3
GH26	3	1	0	0	0	0	0	0	0
GH28	1	1	0	0	0	0	0	0	0
GH29	0	2	0	0	0	0	0	0	0
GH30	1	1	0	0	0	0	0	0	0
GH31	0	3	0	0	0	0	0	0	0
GH35	0	2	0	0	0	0	0	0	0
GH36	0	4	0	0	0	0	0	0	0
GH38	0	2	0	0	0	0	0	0	0
GH39	0	1	0	0	0	0	0	0	0
GH42	0	2	0	0	0	0	0	0	0
GH43	5	9	0	0	0	0	0	0	0
GH44	1	0	0	0	0	0	0	0	0
GH48	2	0	0	0	0	0	0	0	0
GH51	1	3	0	0	0	0	0	0	0
GH53	1	0	0	0	0	0	0	0	0
GH57	0	0	0	3	0	0	3	3	3
GH63	0	1	0	0	0	0	0	0	0
GH67	0	1	0	0	0	0	0	0	0
GH73	0	1	0	1	0	0	1	1	1
GH74	3	0	0	4	0	0	2	2	0
GH78	0	2	0	0	0	0	0	0	0
GH81	1	0	0	0	0	0	0	0	0
GH88	0	2	0	0	0	0	0	0	0
GH94	3	1	1	0	0	0	0	0	0
GH95	0	5	0	0	0	0	0	0	0
GH105	0	6	0	0	0	0	0	0	0
GH106	0	3	0	0	0	0	0	0	0
GH109	2	10	4	7	3	1	3	3	0
GH112	0	1	0	0	0	0	0	0	0
GH115	0	1	0	0	0	0	0	0	0
GH120	0	1	0	0	0	0	0	0	0
GH124	3	0	0	0	0	0	0	0	0
GH126	1	0	0	0	0	0	0	0	0
GH127	0	1	0	0	0	0	0	0	0
GH130	1	4	0	0	0	0	0	0	0
GH133	1	1	0	0	0	0	0	0	0
PL1	2	0	0	0	0	0	0	0	0
PL9	1	1	0	0	0	0	0	0	0

PL11	1	1	0	0	0	0	0	0	0
PL12	0	2	0	0	0	2	0	0	0
PL22	0	1	0	0	0	0	0	0	0
Total	290	160	29	30	3	5	37	33	14

Supplementary Table 5. Selected CAZymes that were acquired within BWF2A and SW3C. The CAZymes are listed for the two strains (IMG genome ID: 2731957509 and 2731957514, respectively) with their respective Gene IMG IDs. CAZymes found in region-A (**Figure 3**) are shaded in purple. CAZy family assignment and similarity % with their closest relative are indicated.

Gene IMG ID (BWF2A)	CAZy family	Best hit and similarity (%)	Gene ID (SW3C)	CAZy family	Best hit and similarity (%)
2731988480_Ga0187557_1002248	GH16	*F. nodosum* (100)	2731996536_Ga0187564_10674	GH16	*F. nodosum* (100)
2731988481_Ga0187557_1002249	GH3	*F. nodosum* (99)	2731996537_Ga0187564_10675	GH3	*F. nodosum* (99)
2731988483_Ga0187557_1002251	GH18-CBM35	*C. thermocellum* (99)	2731996539_Ga0187564_10677	GH18-CBM35	*C. thermocellum* (99)
2731989281_Ga0187557_10084	GH8	*C. thermocellum* (99)	2731996671_Ga0187564_1131	GH36	*C. thermocellum* (98)
2731989282_Ga0187557_10091	GH9-doc	*C. thermocellum* (99)	2731996673_Ga0187564_1133	GH9	*C. thermocellum* (100)
2731989288_Ga0187557_10111	GH36	*C. thermocellum* (100)	2731996687_Ga0187564_1201	GH8	*C. thermocellum* (99)
2731989293_Ga0187557_10122	CBM3	*C. thermocellum* (100)	2731996693_Ga0187564_1232	GH18-doc	*C. thermocellum* (99)
2731989294_Ga0187557_10123	GH18-doc	*C. thermocellum* (96)	2731996702_Ga0187564_1292	CBM3	*C. thermocellum* (100)
2731989310_Ga0187557_10201	CBM3	*C. thermocellum* (100)			
2731989313_Ga0187557_10212	GH8-doc	*C. thermocellum* (100)			

Supplementary Table 6. Clusters of expression groups. The table shows the gene IMG ID and the CAZy family assignment of each expression group together with the genome and cluster. Groups composed of several ORFs contain a "+" between the gene IDs and the names of the organisms. CAZymes in expression groups without uniquely mapping reads (unique hits) are not part of the clustering and were labelled as "n.a.".

Expression Groups (Gene IMG ID)	CAZY	Genome	Cluster
Ga0196617_10001933	CBM25	RCLO1	I
Ga0196617_100013115	GH109	TISS1	I
Ga0196617_1002411	GH109	COPR2	I
Ga0196617_1002669	GH4	COPR3	I
Ga0187557_1002157	GH109	BWF2A	I
Ga0187557_1003280	GH73	BWF2A	I
Ga0187564_102294	GH109	SW3C	I
Ga0187564_103104	CE14	SW3C	I
Ga0187564_104108	GH23	SW3C	I
Ga0187564_10645	GH109	SW3C	I
Ga0187564_10677	CBM35	SW3C	I
Ga0187564_10677	GH18	SW3C	I
Ga0187557_100270+Ga0187564_103120	CE9	SW3C + BWF2A	I
Ga0196617_1000499	GH23	COPR1	II
Ga0196617_1000628	CE9	COPR1	II
Ga0196617_10022612	GH109	COPR1	II
Ga0196617_1003256	CE1	COPR1	II
Ga0196617_1006634	GH109	COPR1	II
Ga0196617_1009191	GH109	COPR1	II
Ga0187557_1002223	GH109	BWF2A	II
Ga0187564_10257	SLH	SW3C	II
Ga0187564_10257	SLH	SW3C	II
Ga0187564_1201	GH8	SW3C	II
Ga0187557_1002314+Ga0187564_106139	CBM34	SW3C + BWF2A	II
Ga0187557_1002314+Ga0187564_106139	GH13	SW3C + BWF2A	II
Ga0187564_101146+Ga0187557_1001161	GH23	SW3C + BWF2A	II
Ga0196617_1000454	CBM6	RCLO1	III
Ga0196617_1000454	CE1	RCLO1	III
Ga0196617_1000454	dockerin	RCLO1	III
Ga0196617_10009713	CBM50	RCLO1	III
Ga0196617_10014620	CE4	COPR1	III
Ga0196617_1004347	GH74	COPR1	III
Ga0196617_1005644	GH109	COPR1	III
Ga0196617_10005857	AA6	TISS1	III
Ga0187557_100358	SLH	BWF2A	III
Ga0187557_100358	SLH	BWF2A	III
Ga0187564_10258	SLH	SW3C	III
Ga0187564_10258	SLH	SW3C	III
Ga0187564_103147	GH57	SW3C	III
Ga0187564_10471	GH13	SW3C	III
Ga0187564_10493	CE4	SW3C	III
Ga0196617_100009115	CBM13	RCLO1	IV

Ga0196617_100009115	GH43	RCLO1	IV
Ga0196617_100009116	dockerin	RCLO1	IV
Ga0196617_100009116	dockerin	RCLO1	IV
Ga0196617_100009116	GH81	RCLO1	IV
Ga0196617_100009143	CBM48	RCLO1	IV
Ga0196617_100009158	CBM3	RCLO1	IV
Ga0196617_100009158	GH9	RCLO1	IV
Ga0196617_100009159	CBM30	RCLO1	IV
Ga0196617_100009159	CBM44	RCLO1	IV
Ga0196617_100009159	GH44	RCLO1	IV
Ga0196617_100009159	GH9	RCLO1	IV
Ga0196617_100009203	CBM3	RCLO1	IV
Ga0196617_100009203	GH9	RCLO1	IV
Ga0196617_100009224	CE4	RCLO1	IV
Ga0196617_10000923	CBM3	RCLO1	IV
Ga0196617_10000923	dockerin	RCLO1	IV
Ga0196617_10000923	GH9	RCLO1	IV
Ga0196617_10000935	cohesin	RCLO1	IV
Ga0196617_10000935	cohesin	RCLO1	IV
Ga0196617_10000935	cohesin	RCLO1	IV
Ga0196617_10000935	cohesin	RCLO1	IV
Ga0196617_10000935	cohesin	RCLO1	IV
Ga0196617_10000935	cohesin	RCLO1	IV
Ga0196617_10000935	cohesin	RCLO1	IV
Ga0196617_10000936	cohesin	RCLO1	IV
Ga0196617_100014143	CBM30	RCLO1	IV
Ga0196617_100014143	GH9	RCLO1	IV
Ga0196617_100014145	CBM32	RCLO1	IV
Ga0196617_100014145	dockerin	RCLO1	IV
Ga0196617_100014145	GH5	RCLO1	IV
Ga0196617_10001446	dockerin	RCLO1	IV
Ga0196617_10001449	CBM32	RCLO1	IV
Ga0196617_10001451	CBM22	RCLO1	IV
Ga0196617_10001451	CBM22	RCLO1	IV
Ga0196617_10001451	CE1	RCLO1	IV
Ga0196617_10001451	GH10	RCLO1	IV
Ga0196617_1000146	CBM25	RCLO1	IV
Ga0196617_10001484	GH23	RCLO1	IV
Ga0196617_10001497	AA6	RCLO1	IV
Ga0196617_10001610	CBM3	RCLO1	IV
Ga0196617_10001610	CBM40	RCLO1	IV
Ga0196617_10001610	SLH	RCLO1	IV
Ga0196617_10001610	SLH	RCLO1	IV
Ga0196617_10001610	SLH	RCLO1	IV
Ga0196617_100016105	SLH	RCLO1	IV
Ga0196617_100016107	SLH	RCLO1	IV
Ga0196617_100016107	SLH	RCLO1	IV
Ga0196617_1000162	CBM37	RCLO1	IV

Ga0196617_1000162	SLH	RCLO1	IV
Ga0196617_1000162	SLH	RCLO1	IV
Ga0196617_1000162	SLH	RCLO1	IV
Ga0196617_10001654	GH51	RCLO1	IV
Ga0196617_10001684	CBM22	RCLO1	IV
Ga0196617_10001684	dockerin	RCLO1	IV
Ga0196617_10001684	dockerin	RCLO1	IV
Ga0196617_10001684	GH10	RCLO1	IV
Ga0196617_100019129	CBM31	RCLO1	IV
Ga0196617_10001939	CE4	RCLO1	IV
Ga0196617_100023113	GH109	RCLO1	IV
Ga0196617_10002318	CBM11	RCLO1	IV
Ga0196617_10002318	dockerin	RCLO1	IV
Ga0196617_10002318	dockerin	RCLO1	IV
Ga0196617_10002318	GH26	RCLO1	IV
Ga0196617_10002318	GH5	RCLO1	IV
Ga0196617_10002319	GH5	RCLO1	IV
Ga0196617_10002366	GH1	RCLO1	IV
Ga0196617_10002394	GH53	RCLO1	IV
Ga0196617_10002396	GH74	RCLO1	IV
Ga0196617_10002396	GH74	RCLO1	IV
Ga0196617_10002396	GH74	RCLO1	IV
Ga0196617_100024103	CBM3	RCLO1	IV
Ga0196617_100024106	SLH	RCLO1	IV
Ga0196617_100024106	SLH	RCLO1	IV
Ga0196617_100024106	SLH	RCLO1	IV
Ga0196617_100024109	SLH	RCLO1	IV
Ga0196617_100024109	SLH	RCLO1	IV
Ga0196617_100024109	SLH	RCLO1	IV
Ga0196617_10002441	GH133	RCLO1	IV
Ga0196617_10002447	dockerin	RCLO1	IV
Ga0196617_10002490	CBM3	RCLO1	IV
Ga0196617_10002490	GH48	RCLO1	IV
Ga0196617_100025109	SLH	RCLO1	IV
Ga0196617_10002537	dockerin	RCLO1	IV
Ga0196617_10002537	dockerin	RCLO1	IV
Ga0196617_10002556	CBM37	RCLO1	IV
Ga0196617_100026113	CBM4	RCLO1	IV
Ga0196617_100026113	dockerin	RCLO1	IV
Ga0196617_100026113	GH28	RCLO1	IV
Ga0196617_10002620	GH10	RCLO1	IV
Ga0196617_10002651	dockerin	RCLO1	IV
Ga0196617_10002651	dockerin	RCLO1	IV
Ga0196617_10002651	GH48	RCLO1	IV
Ga0196617_10003331	CBM50	RCLO1	IV
Ga0196617_10003331	CBM50	RCLO1	IV
Ga0196617_10003331	GH18	RCLO1	IV
Ga0196617_10003345	GH15	RCLO1	IV

Ga0196617_100035100	CBM30	RCLO1	IV
Ga0196617_100035100	CBM3	RCLO1	IV
Ga0196617_100035100	CBM4	RCLO1	IV
Ga0196617_100035100	dockerin	RCLO1	IV
Ga0196617_100035100	GH9	RCLO1	IV
Ga0196617_100035101	dockerin	RCLO1	IV
Ga0196617_100035101	GH9	RCLO1	IV
Ga0196617_10003560	cohesin	RCLO1	IV
Ga0196617_10003575	dockerin	RCLO1	IV
Ga0196617_10003578	GH124	RCLO1	IV
Ga0196617_10003580	CBM3	RCLO1	IV
Ga0196617_10003580	GH9	RCLO1	IV
Ga0196617_10003947	SLH	RCLO1	IV
Ga0196617_10003947	SLH	RCLO1	IV
Ga0196617_10003947	SLH	RCLO1	IV
Ga0196617_10003956	GH3	RCLO1	IV
Ga0196617_10003979	CBM50	RCLO1	IV
Ga0196617_10004017	GH94	RCLO1	IV
Ga0196617_10004018	dockerin	RCLO1	IV
Ga0196617_10004018	dockerin	RCLO1	IV
Ga0196617_10004018	GH9	RCLO1	IV
Ga0196617_10004022	GH18	RCLO1	IV
Ga0196617_10004023	dockerin	RCLO1	IV
Ga0196617_10004023	dockerin	RCLO1	IV
Ga0196617_10004023	GH8	RCLO1	IV
Ga0196617_10004025	CBM3	RCLO1	IV
Ga0196617_10004046	CBM35	RCLO1	IV
Ga0196617_10004046	PL11	RCLO1	IV
Ga0196617_10004053	dockerin	RCLO1	IV
Ga0196617_10004053	dockerin	RCLO1	IV
Ga0196617_10004125	CBM25	RCLO1	IV
Ga0196617_10004148	CBM35	RCLO1	IV
Ga0196617_10004148	CE12	RCLO1	IV
Ga0196617_10004149	CE12	RCLO1	IV
Ga0196617_10004149	dockerin	RCLO1	IV
Ga0196617_10004156	dockerin	RCLO1	IV
Ga0196617_10004156	dockerin	RCLO1	IV
Ga0196617_10004167	SLH	RCLO1	IV
Ga0196617_10004167	SLH	RCLO1	IV
Ga0196617_10004167	SLH	RCLO1	IV
Ga0196617_10004178	GH130	RCLO1	IV
Ga0196617_1000447	SLH	RCLO1	IV
Ga0196617_1000447	SLH	RCLO1	IV
Ga0196617_1000447	SLH	RCLO1	IV
Ga0196617_10004476	cohesin	RCLO1	IV
Ga0196617_10004476	SLH	RCLO1	IV
Ga0196617_10004476	SLH	RCLO1	IV
Ga0196617_10004476	SLH	RCLO1	IV

Ga0196617_1000451	CBM6	RCLO1	IV
Ga0196617_1000451	dockerin	RCLO1	IV
Ga0196617_1000451	dockerin	RCLO1	IV
Ga0196617_1000452	CBM6	RCLO1	IV
Ga0196617_1000452	GH43	RCLO1	IV
Ga0196617_10004521	CBM35	RCLO1	IV
Ga0196617_10004521	GH124	RCLO1	IV
Ga0196617_10004521	PL1	RCLO1	IV
Ga0196617_10004521	PL9	RCLO1	IV
Ga0196617_1000453	CBM6	RCLO1	IV
Ga0196617_1000453	dockerin	RCLO1	IV
Ga0196617_1000453	dockerin	RCLO1	IV
Ga0196617_10004533	GH126	RCLO1	IV
Ga0196617_10004546	SLH	RCLO1	IV
Ga0196617_10004546	SLH	RCLO1	IV
Ga0196617_10004546	SLH	RCLO1	IV
Ga0196617_1000455	CBM6	RCLO1	IV
Ga0196617_1000455	dockerin	RCLO1	IV
Ga0196617_1000455	dockerin	RCLO1	IV
Ga0196617_1000455	GH43	RCLO1	IV
Ga0196617_10004552	CBM16	RCLO1	IV
Ga0196617_10004553	CBM3	RCLO1	IV
Ga0196617_10004553	GH5	RCLO1	IV
Ga0196617_1000456	CBM13	RCLO1	IV
Ga0196617_1000456	CBM62	RCLO1	IV
Ga0196617_1000456	CBM6	RCLO1	IV
Ga0196617_1000456	dockerin	RCLO1	IV
Ga0196617_1000456	dockerin	RCLO1	IV
Ga0196617_1000456	GH5	RCLO1	IV
Ga0196617_1000458	CBM48	RCLO1	IV
Ga0196617_1000458	CBM48	RCLO1	IV
Ga0196617_1000458	GH13	RCLO1	IV
Ga0196617_1000459	CE9	RCLO1	IV
Ga0196617_10004620	GH3	RCLO1	IV
Ga0196617_10004621	CBM3	RCLO1	IV
Ga0196617_10004621	CBM4	RCLO1	IV
Ga0196617_10004635	CBM6	RCLO1	IV
Ga0196617_10004635	CBM6	RCLO1	IV
Ga0196617_10004635	dockerin	RCLO1	IV
Ga0196617_10004635	dockerin	RCLO1	IV
Ga0196617_10004635	GH43	RCLO1	IV
Ga0196617_10004637	CBM42	RCLO1	IV
Ga0196617_10006312	CBM16	RCLO1	IV
Ga0196617_10006312	CBM16	RCLO1	IV
Ga0196617_10006336	SLH	RCLO1	IV
Ga0196617_1000635	dockerin	RCLO1	IV
Ga0196617_1000635	GH9	RCLO1	IV
Ga0196617_10006355	CBM3	RCLO1	IV

Ga0196617_10006355	GH9	RCLO1	IV
Ga0196617_10006356	CBM3	RCLO1	IV
Ga0196617_10006356	CBM3	RCLO1	IV
Ga0196617_10006356	dockerin	RCLO1	IV
Ga0196617_10006356	dockerin	RCLO1	IV
Ga0196617_10006356	GH9	RCLO1	IV
Ga0196617_1000636	CBM35	RCLO1	IV
Ga0196617_1000636	GH26	RCLO1	IV
Ga0196617_1000731	CBM44	RCLO1	IV
Ga0196617_1000731	CBM44	RCLO1	IV
Ga0196617_1000731	SLH	RCLO1	IV
Ga0196617_1000731	SLH	RCLO1	IV
Ga0196617_1000731	SLH	RCLO1	IV
Ga0196617_10007916	CBM6	RCLO1	IV
Ga0196617_10007916	CE1	RCLO1	IV
Ga0196617_10007916	GH10	RCLO1	IV
Ga0196617_10007950	SLH	RCLO1	IV
Ga0196617_10007951	SLH	RCLO1	IV
Ga0196617_10007951	SLH	RCLO1	IV
Ga0196617_10008049	CBM6	RCLO1	IV
Ga0196617_10008049	GH30	RCLO1	IV
Ga0196617_1000831	CBM44	RCLO1	IV
Ga0196617_1000831	GH124	RCLO1	IV
Ga0196617_10008313	CE4	RCLO1	IV
Ga0196617_10008321	CBM6	RCLO1	IV
Ga0196617_10008321	CBM6	RCLO1	IV
Ga0196617_10008321	SLH	RCLO1	IV
Ga0196617_10008321	SLH	RCLO1	IV
Ga0196617_1000954	CBM22	RCLO1	IV
Ga0196617_1000954	dockerin	RCLO1	IV
Ga0196617_1000954	dockerin	RCLO1	IV
Ga0196617_1000954	GH10	RCLO1	IV
Ga0196617_1000961	CBM30	RCLO1	IV
Ga0196617_1000961	CBM4	RCLO1	IV
Ga0196617_10009628	dockerin	RCLO1	IV
Ga0196617_1000968	dockerin	RCLO1	IV
Ga0196617_1000968	dockerin	RCLO1	IV
Ga0196617_1000968	GH5	RCLO1	IV
Ga0196617_1000969	CBM3	RCLO1	IV
Ga0196617_10009710	SLH	RCLO1	IV
Ga0196617_10009710	SLH	RCLO1	IV
Ga0196617_10009729	CBM50	RCLO1	IV
Ga0196617_10010619	SLH	RCLO1	IV
Ga0196617_10010619	SLH	RCLO1	IV
Ga0196617_10010641	AA6	RCLO1	IV
Ga0196617_10010817	GH23	RCLO1	IV
Ga0196617_1001211	CBM42	RCLO1	IV
Ga0196617_1001211	GH43	RCLO1	IV

Ga0196617_10012123	CBM35	RCLO1	IV
Ga0196617_10012123	dockerin	RCLO1	IV
Ga0196617_10012123	dockerin	RCLO1	IV
Ga0196617_10012123	GH26	RCLO1	IV
Ga0196617_10012132	CBM3	RCLO1	IV
Ga0196617_10012132	CBM3	RCLO1	IV
Ga0196617_10012132	GH9	RCLO1	IV
Ga0196617_10012135	CBM3	RCLO1	IV
Ga0196617_10012135	dockerin	RCLO1	IV
Ga0196617_10012135	dockerin	RCLO1	IV
Ga0196617_10012135	GH9	RCLO1	IV
Ga0196617_10012136	dockerin	RCLO1	IV
Ga0196617_10012136	dockerin	RCLO1	IV
Ga0196617_10012516	CBM3	RCLO1	IV
Ga0196617_10012516	dockerin	RCLO1	IV
Ga0196617_10012516	dockerin	RCLO1	IV
Ga0196617_10012516	GH9	RCLO1	IV
Ga0196617_1001259	dockerin	RCLO1	IV
Ga0196617_1001259	dockerin	RCLO1	IV
Ga0196617_1001259	GH5	RCLO1	IV
Ga0196617_10012616	GH94	RCLO1	IV
Ga0196617_10012633	CBM50	RCLO1	IV
Ga0196617_10012633	CBM50	RCLO1	IV
Ga0196617_10012633	CBM50	RCLO1	IV
Ga0196617_10012633	CBM50	RCLO1	IV
Ga0196617_10012634	CBM50	RCLO1	IV
Ga0196617_10012634	CBM50	RCLO1	IV
Ga0196617_10012634	CBM50	RCLO1	IV
Ga0196617_10012635	CBM50	RCLO1	IV
Ga0196617_10012635	CBM50	RCLO1	IV
Ga0196617_10012711	SLH	RCLO1	IV
Ga0196617_10012711	SLH	RCLO1	IV
Ga0196617_10012711	SLH	RCLO1	IV
Ga0196617_10012713	CE6	RCLO1	IV
Ga0196617_10012729	GH18	RCLO1	IV
Ga0196617_1001275	GH5	RCLO1	IV
Ga0196617_10012833	CBM3	RCLO1	IV
Ga0196617_1001361	CE3	RCLO1	IV
Ga0196617_1001361	CE3	RCLO1	IV
Ga0196617_1001361	dockerin	RCLO1	IV
Ga0196617_1001361	dockerin	RCLO1	IV
Ga0196617_10013629	CBM50	RCLO1	IV
Ga0196617_1001363	CE2	RCLO1	IV
Ga0196617_1001363	GH5	RCLO1	IV
Ga0196617_1001365	CBM34	RCLO1	IV
Ga0196617_1001365	GH13	RCLO1	IV
Ga0196617_10013919	GH16	RCLO1	IV
Ga0196617_10013921	GH1	RCLO1	IV

Ga0196617_10014113	CE10	RCLO1	IV
Ga0196617_10014123	CE14	RCLO1	IV
Ga0196617_1001491	cohesin	RCLO1	IV
Ga0196617_1001491	cohesin	RCLO1	IV
Ga0196617_1001491	SLH	RCLO1	IV
Ga0196617_1001491	SLH	RCLO1	IV
Ga0196617_1001491	SLH	RCLO1	IV
Ga0196617_1001492	cohesin	RCLO1	IV
Ga0196617_1001492	SLH	RCLO1	IV
Ga0196617_1001492	SLH	RCLO1	IV
Ga0196617_1001492	SLH	RCLO1	IV
Ga0196617_10014924	CBM16	RCLO1	IV
Ga0196617_10015118	CE4	RCLO1	IV
Ga0196617_10019112	GH109	RCLO1	IV
Ga0196617_10019617	CBM3	RCLO1	IV
Ga0196617_10019617	CBM3	RCLO1	IV
Ga0196617_10019617	GH9	RCLO1	IV
Ga0196617_1002189	CBM35	RCLO1	IV
Ga0196617_1002189	PL1	RCLO1	IV
Ga0196617_1002401	CBM3	RCLO1	IV
Ga0196617_1002401	cohesin	RCLO1	IV
Ga0196617_1002401	cohesin	RCLO1	IV
Ga0196617_1002401	cohesin	RCLO1	IV
Ga0196617_1002401	cohesin	RCLO1	IV
Ga0196617_10024516	CE4	RCLO1	IV
Ga0196617_10024517	CBM6	RCLO1	IV
Ga0196617_10024517	dockerin	RCLO1	IV
Ga0196617_10024517	GH11	RCLO1	IV
Ga0196617_10024518	CBM6	RCLO1	IV
Ga0196617_10024518	dockerin	RCLO1	IV
Ga0196617_10024518	dockerin	RCLO1	IV
Ga0196617_10024518	GH11	RCLO1	IV
Ga0196617_1002738	CE10	RCLO1	IV
Ga0196617_1005678	CE7	RCLO1	IV
Ga0196617_1008234	GH109	COPR1	IV
Ga0196617_100004299	AA6	TISS1	IV
Ga0196617_100012177	CBM50	TISS1	IV
Ga0196617_1000123	AA6	TISS1	IV
Ga0196617_100005248	CBM22	CLOS1	IV
Ga0196617_100005248	CBM22	CLOS1	IV
Ga0196617_100005248	CBM9	CLOS1	IV
Ga0196617_100005248	GH10	CLOS1	IV
Ga0196617_10000543	GH130	CLOS1	IV
Ga0196617_1006694	GH115	CLOS1	IV
Ga0196617_1008072	GH43	CLOS1	IV
Ga0196617_1010211	GH4	CLOS1	IV
Ga0196617_1004561	GH109	COPR2	IV
Ga0196617_1002048	CBM54	COPR3	IV

Ga0196617_1002048	SLH	COPR3	IV
Ga0196617_1002048	SLH	COPR3	IV
Ga0196617_1002048	SLH	COPR3	IV
Ga0196617_1002716	GH109	COPR3	IV
Ga0196617_10004021+Ga0187557_10122	CBM3	BWF2A + CLOS1	IV
Ga0187564_1232	GH18	SW3C	IV
Ga0196617_1005697	GH73	COPR1	V
Ga0196617_100010102	GH109	TISS1	V
Ga0196617_10001093	GH109	TISS1	V
Ga0196617_10001250	CBM50	TISS1	V
Ga0196617_10001250	CBM50	TISS1	V
Ga0196617_10001250	CBM50	TISS1	V
Ga0196617_10000516	GH2	CLOS1	V
Ga0196617_100005270	SLH	CLOS1	V
Ga0196617_10001198	SLH	CLOS1	V
Ga0196617_10001198	SLH	CLOS1	V
Ga0196617_100018135	CE4	CLOS1	V
Ga0196617_10003852	GH95	CLOS1	V
Ga0196617_10012046	GH109	CLOS1	V
Ga0187564_102193	CE1	SW3C	V
Ga0187564_10318	GH109	SW3C	V
Ga0187564_10322	CE9	SW3C	V
Ga0196617_10006310	GH5	RCLO1	VI
Ga0196617_1000638	CBM4	RCLO1	VI
Ga0196617_1000638	CBM4	RCLO1	VI
Ga0196617_1000638	CBM4	RCLO1	VI
Ga0196617_1000638	CBM4	RCLO1	VI
Ga0196617_1000638	CBM54	RCLO1	VI
Ga0196617_1000638	GH16	RCLO1	VI
Ga0196617_1000638	SLH	RCLO1	VI
Ga0196617_1000638	SLH	RCLO1	VI
Ga0196617_1000638	SLH	RCLO1	VI
Ga0196617_10006233	GH57	COPR1	VI
Ga0196617_10006234	GH57	COPR1	VI
Ga0196617_10006619	GH23	COPR1	VI
Ga0196617_10006658	GH13	COPR1	VI
Ga0196617_1001466	GH23	COPR1	VI
Ga0196617_10018610	CE14	COPR1	VI
Ga0196617_1002859	GH74	COPR1	VI
Ga0196617_10031312	CE4	COPR1	VI
Ga0196617_1003146	SLH	COPR1	VI
Ga0196617_1003797	GH109	COPR1	VI
Ga0196617_1003936	CE1	COPR1	VI
Ga0196617_1006193	SLH	COPR1	VI
Ga0196617_1006193	SLH	COPR1	VI
Ga0196617_1006193	SLH	COPR1	VI
Ga0196617_1006445	GH109	COPR1	VI
Ga0196617_1009463	CE9	COPR1	VI

Ga0196617_10000713	CE10	TISS1	VI
Ga0196617_100007288	GH3	TISS1	VI
Ga0196617_100007296	CE4	TISS1	VI
Ga0196617_10000769	CE1	TISS1	VI
Ga0196617_10001084	AA3	TISS1	VI
Ga0196617_10001251	CBM50	TISS1	VI
Ga0196617_10001251	CBM50	TISS1	VI
Ga0196617_10001251	CBM50	TISS1	VI
Ga0196617_10001251	CBM50	TISS1	VI
Ga0196617_1000286	CE10	TISS1	VI
Ga0196617_10003113	GH18	TISS1	VI
Ga0196617_10004218	CBM50	TISS1	VI
Ga0196617_10004240	CE4	TISS1	VI
Ga0196617_10005416	GH109	TISS1	VI
Ga0196617_10005467	GH23	TISS1	VI
Ga0196617_1000051	GH51	CLOS1	VI
Ga0196617_10000512	GH29	CLOS1	VI
Ga0196617_100005134	CE4	CLOS1	VI
Ga0196617_100005144	GH43	CLOS1	VI
Ga0196617_10000517	CE15	CLOS1	VI
Ga0196617_100005175	GH31	CLOS1	VI
Ga0196617_10000518	GH95	CLOS1	VI
Ga0196617_100005181	CBM25	CLOS1	VI
Ga0196617_100005183	GH9	CLOS1	VI
Ga0196617_100005190	AA6	CLOS1	VI
Ga0196617_100005192	GH51	CLOS1	VI
Ga0196617_100005195	SLH	CLOS1	VI
Ga0196617_100005195	SLH	CLOS1	VI
Ga0196617_100005195	SLH	CLOS1	VI
Ga0196617_10000520	GH42	CLOS1	VI
Ga0196617_100005203	GH2	CLOS1	VI
Ga0196617_10000521	SLH	CLOS1	VI
Ga0196617_100005216	CBM50	CLOS1	VI
Ga0196617_100005269	SLH	CLOS1	VI
Ga0196617_100005269	SLH	CLOS1	VI
Ga0196617_1000053	GH109	CLOS1	VI
Ga0196617_10000534	GH35	CLOS1	VI
Ga0196617_10000548	SLH	CLOS1	VI
Ga0196617_10000548	SLH	CLOS1	VI
Ga0196617_10000548	SLH	CLOS1	VI
Ga0196617_1000055	GH36	CLOS1	VI
Ga0196617_1000056	GH36	CLOS1	VI
Ga0196617_10000567	GH13	CLOS1	VI
Ga0196617_10000568	GH36	CLOS1	VI
Ga0196617_1000057	GH105	CLOS1	VI
Ga0196617_10000579	GH10	CLOS1	VI
Ga0196617_1000058	GH3	CLOS1	VI
Ga0196617_10000586	GH43	CLOS1	VI

Ga0196617_10000587	GH95	CLOS1	VI
Ga0196617_1000059	GH31	CLOS1	VI
Ga0196617_100006113	CE10	CLOS1	VI
Ga0196617_100006118	GH43	CLOS1	VI
Ga0196617_100006212	CE8	CLOS1	VI
Ga0196617_100006223	CE3	CLOS1	VI
Ga0196617_100006228	CBM22	CLOS1	VI
Ga0196617_100006228	GH30	CLOS1	VI
Ga0196617_10000638	GH18	CLOS1	VI
Ga0196617_10000669	GH88	CLOS1	VI
Ga0196617_10000695	GH109	CLOS1	VI
Ga0196617_100011115	CBM50	CLOS1	VI
Ga0196617_100011143	CE10	CLOS1	VI
Ga0196617_100011180	GH3	CLOS1	VI
Ga0196617_10001122	GH36	CLOS1	VI
Ga0196617_10001140	SLH	CLOS1	VI
Ga0196617_10001140	SLH	CLOS1	VI
Ga0196617_10001140	SLH	CLOS1	VI
Ga0196617_10001148	GH109	CLOS1	VI
Ga0196617_100015121	GH106	CLOS1	VI
Ga0196617_10001539	GH67	CLOS1	VI
Ga0196617_10001577	CE4	CLOS1	VI
Ga0196617_10001596	CE15	CLOS1	VI
Ga0196617_10001596	SLH	CLOS1	VI
Ga0196617_10001596	SLH	CLOS1	VI
Ga0196617_10001596	SLH	CLOS1	VI
Ga0196617_100018109	GH133	CLOS1	VI
Ga0196617_100018129	GH2	CLOS1	VI
Ga0196617_10001814	CBM50	CLOS1	VI
Ga0196617_10001830	CE4	CLOS1	VI
Ga0196617_10001838	CE4	CLOS1	VI
Ga0196617_10001876	CE7	CLOS1	VI
Ga0196617_100020114	GH112	CLOS1	VI
Ga0196617_100020115	GH127	CLOS1	VI
Ga0196617_100020127	GH63	CLOS1	VI
Ga0196617_10002017	CBM50	CLOS1	VI
Ga0196617_1000203	CBM16	CLOS1	VI
Ga0196617_10002031	GH109	CLOS1	VI
Ga0196617_10002032	CBM37	CLOS1	VI
Ga0196617_10002032	SLH	CLOS1	VI
Ga0196617_10002032	SLH	CLOS1	VI
Ga0196617_10002032	SLH	CLOS1	VI
Ga0196617_10002033	CBM48	CLOS1	VI
Ga0196617_10002033	CBM48	CLOS1	VI
Ga0196617_10002033	GH13	CLOS1	VI
Ga0196617_10002040	GH29	CLOS1	VI
Ga0196617_10002041	GH95	CLOS1	VI
Ga0196617_10002055	GH109	CLOS1	VI

Ga0196617_10002065	GH43	CLOS1	VI
Ga0196617_10002092	GH109	CLOS1	VI
Ga0196617_10002712	CBM6	CLOS1	VI
Ga0196617_10002712	GH2	CLOS1	VI
Ga0196617_1000274	GH23	CLOS1	VI
Ga0196617_10002765	GH109	CLOS1	VI
Ga0196617_10002766	GH38	CLOS1	VI
Ga0196617_10002776	GH105	CLOS1	VI
Ga0196617_10002777	CE12	CLOS1	VI
Ga0196617_10002778	GH105	CLOS1	VI
Ga0196617_10002780	GH5	CLOS1	VI
Ga0196617_10002785	CBM67	CLOS1	VI
Ga0196617_10002785	GH78	CLOS1	VI
Ga0196617_1000344	CE9	CLOS1	VI
Ga0196617_10003461	GH2	CLOS1	VI
Ga0196617_10003466	GH106	CLOS1	VI
Ga0196617_10003498	GH38	CLOS1	VI
Ga0196617_10003636	GH43	CLOS1	VI
Ga0196617_10003637	GH43	CLOS1	VI
Ga0196617_10003643	CE9	CLOS1	VI
Ga0196617_10003684	CBM50	CLOS1	VI
Ga0196617_10003684	CBM50	CLOS1	VI
Ga0196617_10003849	GH15	CLOS1	VI
Ga0196617_10003870	GH3	CLOS1	VI
Ga0196617_10003871	SLH	CLOS1	VI
Ga0196617_10003880	GH2	CLOS1	VI
Ga0196617_10005513	CE1	CLOS1	VI
Ga0196617_10005912	GH28	CLOS1	VI
Ga0196617_10005913	GH105	CLOS1	VI
Ga0196617_10005914	GH43	CLOS1	VI
Ga0196617_10005958	GH39	CLOS1	VI
Ga0196617_10005959	GH95	CLOS1	VI
Ga0196617_10006041	GH130	CLOS1	VI
Ga0196617_1000651	CBM50	CLOS1	VI
Ga0196617_10006515	PL9	CLOS1	VI
Ga0196617_10006557	GH73	CLOS1	VI
Ga0196617_10006557	SLH	CLOS1	VI
Ga0196617_10006740	PL12	CLOS1	VI
Ga0196617_10007036	CBM50	CLOS1	VI
Ga0196617_10007036	CBM50	CLOS1	VI
Ga0196617_10007036	GH18	CLOS1	VI
Ga0196617_10007049	GH94	CLOS1	VI
Ga0196617_1000758	GH1	CLOS1	VI
Ga0196617_10007720	GH109	CLOS1	VI
Ga0196617_10007733	SLH	CLOS1	VI
Ga0196617_10007733	SLH	CLOS1	VI
Ga0196617_10007748	GH4	CLOS1	VI
Ga0196617_10007750	CBM66	CLOS1	VI

Ga0196617_10007750	PL11	CLOS1	VI
Ga0196617_10009210	CE1	CLOS1	VI
Ga0196617_10009212	GH13	CLOS1	VI
Ga0196617_10009249	GH2	CLOS1	VI
Ga0196617_10010336	GH106	CLOS1	VI
Ga0196617_10010340	SLH	CLOS1	VI
Ga0196617_1001112	GH42	CLOS1	VI
Ga0196617_10011120	GH3	CLOS1	VI
Ga0196617_10011122	GH130	CLOS1	VI
Ga0196617_10011128	GH88	CLOS1	VI
Ga0196617_10011135	CBM67	CLOS1	VI
Ga0196617_10011135	GH78	CLOS1	VI
Ga0196617_10011136	GH3	CLOS1	VI
Ga0196617_10011620	GH43	CLOS1	VI
Ga0196617_10011622	CE10	CLOS1	VI
Ga0196617_10011624	GH105	CLOS1	VI
Ga0196617_1001205	GH4	CLOS1	VI
Ga0196617_10015018	GH51	CLOS1	VI
Ga0196617_10015028	SLH	CLOS1	VI
Ga0196617_10015029	CE4	CLOS1	VI
Ga0196617_1001561	dockerin	CLOS1	VI
Ga0196617_1001562	SLH	CLOS1	VI
Ga0196617_1001562	SLH	CLOS1	VI
Ga0196617_1001562	SLH	CLOS1	VI
Ga0196617_10015626	GH4	CLOS1	VI
Ga0196617_1001563	GH4	CLOS1	VI
Ga0196617_10016319	CE7	CLOS1	VI
Ga0196617_10016826	SLH	CLOS1	VI
Ga0196617_1001793	GH120	CLOS1	VI
Ga0196617_10019216	CBM50	CLOS1	VI
Ga0196617_10019320	CBM6	CLOS1	VI
Ga0196617_1002031	GH109	CLOS1	VI
Ga0196617_1002039	CBM54	CLOS1	VI
Ga0196617_1002039	SLH	CLOS1	VI
Ga0196617_1002039	SLH	CLOS1	VI
Ga0196617_1002039	SLH	CLOS1	VI
Ga0196617_10022112	PL22	CLOS1	VI
Ga0196617_10022114	GH18	CLOS1	VI
Ga0196617_10022114	SLH	CLOS1	VI
Ga0196617_10022114	SLH	CLOS1	VI
Ga0196617_1002911	GH23	CLOS1	VI
Ga0196617_10029410	GH10	CLOS1	VI
Ga0196617_1004705	GH35	CLOS1	VI
Ga0196617_1005872	SLH	CLOS1	VI
Ga0187557_1002153	CE9	BWF2A	VI
Ga0187557_1002195	CE4	BWF2A	VI
Ga0187557_1002239	SLH	BWF2A	VI
Ga0187557_1002239	SLH	BWF2A	VI

Ga0187557_1002239	SLH	BWF2A	VI
Ga0187557_100243	GH57	BWF2A	VI
Ga0187557_100286	CE14	BWF2A	VI
Ga0187557_1003196	CE1	BWF2A	VI
Ga0187557_1003298	GH109	BWF2A	VI
Ga0187557_100357	SLH	BWF2A	VI
Ga0187557_100357	SLH	BWF2A	VI
Ga0187557_1004109	GH23	BWF2A	VI
Ga0187557_100472	GH13	BWF2A	VI
Ga0187557_100494	CE4	BWF2A	VI
Ga0187557_10055	SLH	BWF2A	VI
Ga0187564_10115	SLH	SW3C	VI
Ga0187564_10115	SLH	SW3C	VI
Ga0187564_10115	SLH	SW3C	VI
Ga0187564_10665	SLH	SW3C	VI
Ga0187564_10665	SLH	SW3C	VI
Ga0187564_10665	SLH	SW3C	VI
Ga0187564_1086	SLH	SW3C	VI
Ga0187557_100244+Ga0187564_103146	GH57	SW3C + BWF2A	VI
Ga0187564_101173+Ga0187557_1001187	CE1	SW3C + BWF2A	VI
Ga0187564_10433+Ga0187557_100434	GH23	SW3C + BWF2A	VI
Ga0187557_1003195+Ga0196617_1003937+Ga0187564_102192	CE10	SW3C + BWF2A + COPR1	VI
Ga0187564_10247+Ga0196617_1005403+Ga0187557_100347	GH74	SW3C + BWF2A + COPR1	VI
Ga0187564_10674+Ga0187557_1002248+Ga0196617_1003705	GH16	SW3C + BWF2A + Unbinned	VI
Ga0187564_10675+Ga0187557_1002249+Ga0196617_1003704	GH3	SW3C + BWF2A + Unbinned	VI
Ga0196617_10009442+Ga0187564_10367	CBM66	SW3C + COPR1	VI
Ga0187564_10357+Ga0196617_1014501	CE4	SW3C + Unbinned	VI
Ga0196617_10006346	AA6	RCLO1	VII
Ga0196617_10021811	CE8	RCLO1	VII
Ga0196617_100004229	CBM50	TISS1	VII
Ga0196617_10001282	AA3	TISS1	VII
Ga0196617_10002881	CE4	TISS1	VII
Ga0196617_10002771	GH105	CLOS1	VII
Ga0196617_10019218	GH18	CLOS1	VII
Ga0196617_1008651	CBM6	RCLO1	VIII
Ga0196617_1008651	GH2	RCLO1	VIII
Ga0196617_1006112	CE4	COPR1	VIII
Ga0196617_1008452	CE4	COPR1	VIII
Ga0196617_100006226	SLH	CLOS1	VIII
Ga0196617_100006226	SLH	CLOS1	VIII
Ga0196617_100006226	SLH	CLOS1	VIII
Ga0196617_100006227	GH10	CLOS1	VIII
Ga0196617_10001149	GH31	CLOS1	VIII
Ga0196617_1005975	CBM35	CLOS1	VIII
Ga0196617_1005975	GH26	CLOS1	VIII
Ga0196617_1007811	CBM32	CLOS1	VIII
Ga0196617_1007811	PL12	CLOS1	VIII
Ga0196617_1008533	GH130	CLOS1	VIII

Ga0196617_1003511	GH109	COPR2	VIII
Ga0196617_1002713	PL12	COPR3	VIII
Ga0196617_1002715	PL12	COPR3	VIII
Ga0187557_100130	SLH	BWF2A	VIII
Ga0187557_100130	SLH	BWF2A	VIII
Ga0187557_100130	SLH	BWF2A	VIII
Ga0187557_1002251	CBM35	BWF2A	n.a.
Ga0187557_1002251	GH18	BWF2A	n.a.
Ga0187557_100245	GH57	BWF2A	n.a.
Ga0187557_10084	GH8	BWF2A	n.a.
Ga0187557_10091	Dockerin	BWF2A	n.a.
Ga0187557_10091	Dockerin	BWF2A	n.a.
Ga0187557_10091	GH9	BWF2A	n.a.
Ga0187557_10201	CBM3	BWF2A	n.a.
Ga0187557_10212	Dockerin	BWF2A	n.a.
Ga0187557_10212	GH8	BWF2A	n.a.
Ga0196617_10006232+Ga0187564_103145	GH57	SW3C + COPR1	n.a.
Ga0187564_102275	GH73	SW3C	n.a.
Ga0187564_10616	CE4	SW3C	n.a.
Ga0187564_1133	GH9	SW3C	n.a.
Ga0187564_1292	CBM3	SW3C	n.a.

Supplementary Table 7. Genome IMG ID and SRA numbers for datasets used in this study

Dataset	SRA Accession number	IMG Genome ID
Metagenomes		
SEM1b_D1B	SRX3777359	3300019285
SEM1b_D2B	SRX3777360	3300019285
SEM1b_D1B-r1 (16S rRNA)	SRX3777358	
SEM1b_D2B-r1 (16S rRNA)	SRX3777363	
SEM1b_D1B-r2 (16S rRNA)	SRX3777361	
SEM1b_D2B-r2 (16S rRNA)	SRX3777362	
Isolate genomes		
C. proteolyticus BWF2A	SAMN08667745	2731957509
C. proteolyticus SW3C	SAMN08667746	2731957514
SEM1b time series		
Dataset	**Metatranscriptomes**	**16S rRNA**
SEM1b_T1A		SRX3777365
SEM1b_T1B		SRX3777364
SEM1b_T1C		SRX3777357
SEM1b_T2A	SRX3777356	SRX3777346
SEM1b_T2B	SRX3777345	SRX3777348
SEM1b_T2C	SRX3777347	SRX3777350
SEM1b_T3A	SRX3777349	SRX3777352
SEM1b_T3B	SRX3777351	SRX3777354
SEM1b_T3C	SRX3777353	SRX3777368
SEM1b_T4A	SRX3777369	SRX3777370
SEM1b_T4B	SRX3777371	SRX3777372
SEM1b_T4C	SRX3777373	SRX3777374
SEM1b_T5A	SRX3777375	SRX3777366
SEM1b_T5B	SRX3777367	SRX3777344
SEM1b_T5C	SRX3777343	SRX3777342
SEM1b_T6A	SRX3777341	SRX3777340
SEM1b_T6B	SRX3777339	SRX3777338
SEM1b_T6C	SRX3777337	SRX3777336
SEM1b_T7A	SRX3777335	SRX3777384
SEM1b_T7B	SRX3777385	SRX3777382
SEM1b_T7C	SRX3777383	SRX3777380
SEM1b_T8A	SRX3777381	SRX3777378
SEM1b_T8B	SRX3777379	SRX3777376
SEM1b_T8C	SRX3777377	SRX3777355

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