

Supplementary Material for

**Construction and Characterization of Synthetic Bacterial Community for
Experimental Ecology and Evolution**

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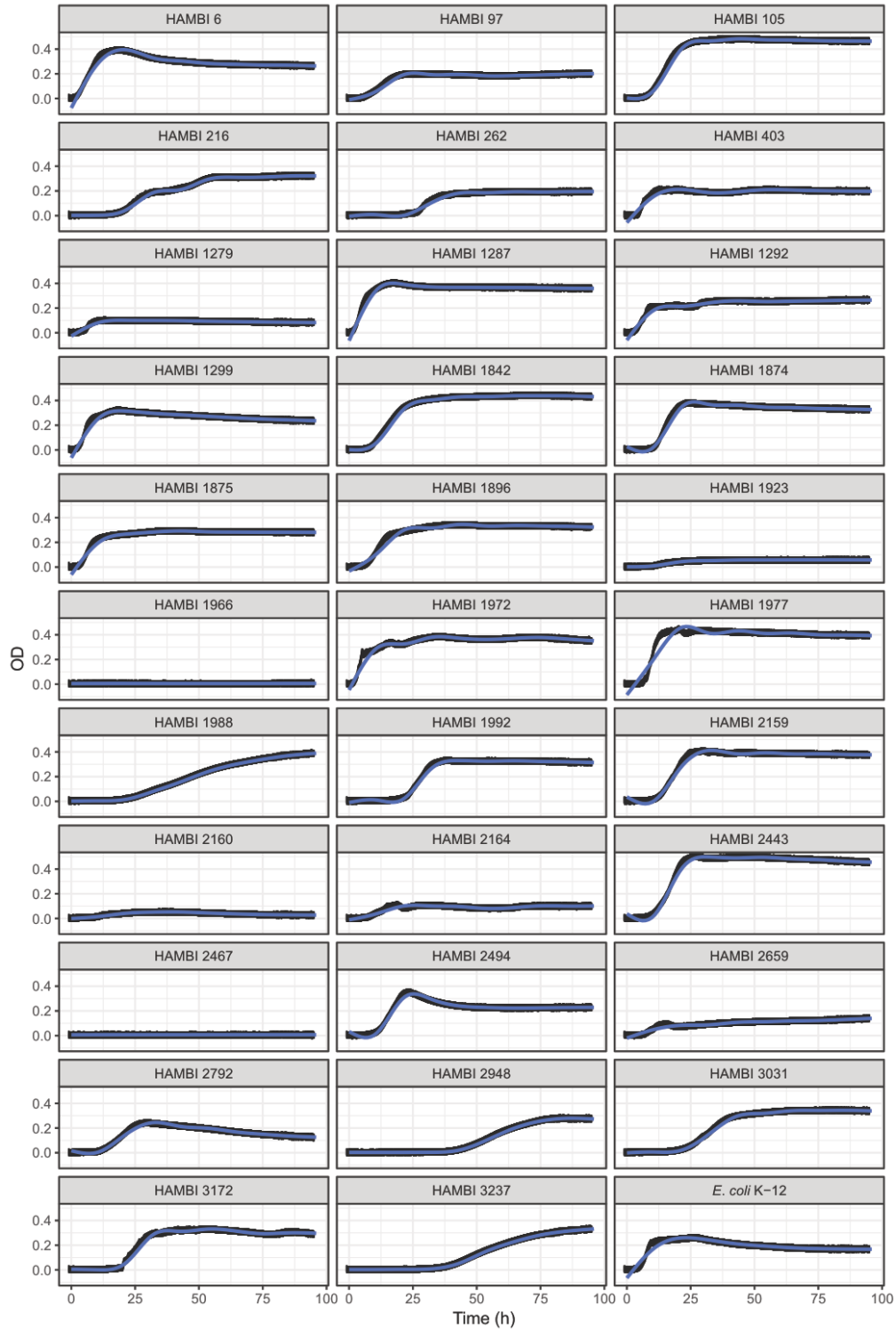


Figure S1. Growth curves of HMC 33.1 strains cultured separately for 96 h in experimental medium. Each curve (black line) is based on four technical replicates, and a smoother (blue line) modeling the shape of the curve using a general additive model is also indicated. Measurements were performed with the Bioscreen C well-plate reader (Labsystems Oy, Helsinki, Finland) on clonal cultures diluted to low optical density (OD), using a wideband filter to measure OD_{420–580 nm} at 5 min intervals.

Table S1. Composition of HAMBI Mock Community (HMC) 33.1 constructed for this study.

Strain	Other ID*	Genome accession	Database* *
<i>Acinetobacter johnsonii</i> strain HAMBI 97	ATCC 9036	—	—
<i>Aeromonas caviae</i> strain HAMBI 1972	NCIMB 13016	—	—
<i>Agrobacterium tumefaciens</i> strain HAMBI 105	ATCC 4718	—	—
<i>Azorhizobium caulinodans</i> strain HAMBI 216	ORS 571 T	GCF 000010525	RefSeq
<i>Azospirillum brasilense</i> strain HAMBI 3172	LMG 4376	—	—
<i>Bordetella avium</i> strain HAMBI 2160	ATCC 35086 T	—	—
<i>Brevundimonas bullata</i> strain HAMBI 262	ATCC 4278 T	—	—
<i>Chitinophaga filiformis</i> strain HAMBI 1966	DSM 527 T	—	—
<i>Chitinophaga sancti</i> strain HAMBI 1988	DSM 784 T	GCF 900119105	RefSeq
<i>Citrobacter koseri</i> strain HAMBI 1287	CUETM 77.4	—	—
<i>Comamonas testosteroni</i> strain HAMBI 403	ATCC 11996 T	GCF 000241525	RefSeq
<i>Cupriavidus necator</i> strain HAMBI 2164	DSM 1105	GCF 001592245	RefSeq
<i>Elizabethkingia meningoseptica</i> strain HAMBI 1875	NCTC 10016	GCF 000367325	RefSeq
<i>Escherichia coli</i> K-12 strain JE2571(RP4)	—	GCF 000005845	RefSeq
<i>Hafnia alvei</i> strain HAMBI 1279	ATCC 13337 T	GCF 000735375	RefSeq
<i>Kluyvera intermedia</i> strain HAMBI 1299	ATCC 33110 T	GCF 001598315	RefSeq
<i>Microvirga lotononidis</i> strain HAMBI 3237	WSM 3557	GCF 000262405	RefSeq
<i>Moraxella canis</i> strain HAMBI 2792	—	—	—
<i>Morganella morganii</i> strain HAMBI 1292	ATCC 25830	GCF 001598895	RefSeq
<i>Myroides odoratus</i> strain HAMBI 1923	NCTC 11036	GCF 000243275	RefSeq
<i>Niabella yanshanensis</i> strain HAMBI 3031	CCBAU 05354	—	—
<i>Paraburkholderia caryophylli</i> strain HAMBI 2159	DSM 50341 T	—	—
<i>Paraburkholderia kururiensis</i> strain HAMBI 2494	—	—	—
<i>Paracoccus denitrificans</i> strain HAMBI 2443	NCTC 11036	GCF 900100045	RefSeq
<i>Phyllobacterium myrsinacearum</i> strain HAMBI 1992	LMG 2(t2) T	—	—
<i>Pseudomonas chlororaphis</i> strain HAMBI 1977	ATCC 17415	—	—
<i>Pseudomonas putida</i> strain HAMBI 6	ATCC 11172	—	—
<i>Psychrobacter proteolyticus</i> strain HAMBI 2948	DSM 13887 T	—	—
<i>Sphingobacterium multivorum</i> strain HAMBI 1874	NCTC 11343	Gp0013291	JGI GOLD
<i>Sphingobacterium spiritivorum</i> strain HAMBI 1896	NCTC 11386	GCF 000143765	RefSeq
<i>Sphingobium yanoikuyae</i> strain HAMBI 1842	DSM 7462 T	GCF 000315525	RefSeq
<i>Stenotrophomonas maltophilia</i> strain HAMBI 2659	ATCC 13637	GCF 000742995	RefSeq
<i>Thermomonas haemolytica</i> strain HAMBI 2467	DSM 13605 T	—	—

*T = type strain.

**RefSeq accessions are for genome assemblies, and the JGI GOLD accession is for raw sequence data (fastq) files.

Culture collection acronyms: ATCC = American Type Culture Collection; CCBAU = Culture Collection of Beijing Agricultural University, People's Republic of China; CUETM = Collection de l'Unité d'Écotoxicologie Microbienne, Institut National de la Recherche Agronomique (INRA), France; DSM = DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, Germany; HAMBI = University of Helsinki Culture Collection (UHCC); LMG = Collection of the Laboratorium voor Microbiologie en Microbiële Genetica, Rijksuniversiteit, Belgium; NCIMB = National Collection of Industrial and Marine Bacteria, National Collections of Industrial, Food and Marine Bacteria, UK; NCTC = National Collection of Type Cultures, Central Public Health Laboratory, UK.

Table S2. Source of isolation of HMC 33.1 strains.

Strain	Source of isolation
<i>Acinetobacter johnsonii</i> strain HAMBI 97	NA
<i>Aeromonas caviae</i> strain HAMBI 1972	Epizootic of young guinea pigs, KY, USA
<i>Agrobacterium tumefaciens</i> strain HAMBI 105	Soil, USA
<i>Azorhizobium caulinodans</i> strain HAMBI 216	<i>Sesbania rostrata</i> stem nodules, North Senegal
<i>Azospirillum brasilense</i> strain HAMBI 3172	<i>Oryza sativa</i> root, Bogor, Indonesia
<i>Bordetella avium</i> strain HAMBI 2160	Respiratory tract of turkey poults, West Germany
<i>Brevundimonas bullata</i> strain HAMBI 262	Soil
<i>Chitinophaga filiformis</i> strain HAMBI 1966	Soil, Samoa
<i>Chitinophaga sancti</i> strain HAMBI 1988	Soil
<i>Citrobacter koseri</i> strain HAMBI 1287	NA
<i>Comamonas testosteroni</i> strain HAMBI 403	Soil, Berkeley
<i>Cupriavidus necator</i> strain HAMBI 2164	Garden soil
<i>Elizabethkingia meningoseptica</i> strain HAMBI 1875	Spinal fluid from premature infant, MA, USA
<i>Escherichia coli</i> K-12 strain JE2571(RP4)	Human stool, Stanford, USA
<i>Hafnia alvei</i> strain HAMBI 1279	NA
<i>Kluyvera intermedia</i> strain HAMBI 1299	Surface water, France
<i>Microvirga lotononidis</i> strain HAMBI 3237	Nitrogen-fixing nodule of <i>Lotononsis angolensis</i> , Chibala, Zambia
<i>Moraxella canis</i> strain HAMBI 2792	Dog's beard, Finland
<i>Morganella morganii</i> strain HAMBI 1292	Human with summer diarrhea, London, UK
<i>Myroides odoratus</i> strain HAMBI 1923	Feces of patient with intestinal infection, Europe
<i>Niabella yanshanensis</i> strain HAMBI 3031	Soybean rhizosphere, Hebei, China
<i>Paraburkholderia caryophylli</i> strain HAMBI 2159	Carnation, USA
<i>Paraburkholderia kururiensis</i> strain HAMBI 2494	Printing paper machine, Finland
<i>Paracoccus denitrificans</i> strain HAMBI 2443	Garden soil, Delft, Netherlands
<i>Phyllobacterium myrsinacearum</i> strain HAMBI 1992	Leaf nodule of <i>Ardisia crispa</i> in tropical greenhouse, Germany
<i>Pseudomonas chlororaphis</i> strain HAMBI 1977	Farm soil, Peoria, IL, USA
<i>Pseudomonas putida</i> strain HAMBI 6	NA
<i>Psychrobacter proteolyticus</i> strain HAMBI 2948	Stomach specimen of Antarctic krill <i>Euphausia superba</i>
<i>Sphingobacterium multivorum</i> strain HAMBI 1874	Human clinical specimen, spleen, WA, USA
<i>Sphingobacterium spiritivorum</i> strain HAMBI 1896	Human, intra-uterine, KS, USA
<i>Sphingobium yanoikuyae</i> strain HAMBI 1842	Clinical specimen
<i>Stenotrophomonas maltophilia</i> strain HAMBI 2659	Oropharyngeal region of patient with mouth cancer
<i>Thermomonas haemolytica</i> strain HAMBI 2467	Kaolin slurry, Finland

Table S3. Reference genomes used for genomic island prediction with incomplete genomes.

Strain	Reference genome in IslandViewer 4 database
<i>Acinetobacter johnsonii</i> strain HAMBI 97	<i>Acinetobacter johnsonii</i> strain XBB1
<i>Aeromonas caviae</i> strain HAMBI 1972	<i>Aeromonas</i> sp. strain CU5
<i>Agrobacterium tumefaciens</i> strain HAMBI 105	<i>Agrobacterium tumefaciens</i> strain Ach5
<i>Azorhizobium caulinodans</i> strain HAMBI 216	NA (complete genome)
<i>Azospirillum brasilense</i> strain HAMBI 3172	<i>Azospirillum brasilense</i> strain Az39
<i>Bordetella avium</i> strain HAMBI 2160	<i>Bordetella avium</i> strain 197N
<i>Brevundimonas bullata</i> strain HAMBI 262	<i>Brevundimonas</i> sp. strain DS20
<i>Chitinophaga filiformis</i> strain HAMBI 1966	<i>Chitinophaga pinensis</i> strain DSM 2588
<i>Chitinophaga sancti</i> strain HAMBI 1988	<i>Chitinophaga pinensis</i> strain DSM 2588
<i>Citrobacter koseri</i> strain HAMBI 1287	<i>Citrobacter koseri</i> strain ATCC BAA-895
<i>Comamonas testosteroni</i> strain HAMBI 403	<i>Comamonas testosteroni</i> strain CNB-2
<i>Cupriavidus necator</i> strain HAMBI 2164	<i>Cupriavidus necator</i> strain N-1
<i>Elizabethkingia meningoseptica</i> strain HAMBI 1875	<i>Elizabethkingia meningoseptica</i> strain G4076
<i>Escherichia coli</i> K-12 strain JE2571(RP4)	NA (complete genome)
<i>Hafnia alvei</i> strain HAMBI 1279	<i>Hafnia alvei</i> strain FB1
<i>Kluyvera intermedia</i> strain HAMBI 1299	<i>Enterobacter</i> sp. strain 638
<i>Microvirga lotononidis</i> strain HAMBI 3237	<i>Microvirga ossetica</i> strain V5/3M
<i>Moraxella canis</i> strain HAMBI 2792	<i>Moraxella ovis</i> strain 199/55
<i>Morganella morganii</i> strain HAMBI 1292	<i>Morganella morganii</i> subsp. <i>Morganii</i> strain KT
<i>Myroides odoratus</i> strain HAMBI 1923	NA (complete genome)
<i>Niabella yanshanensis</i> strain HAMBI 3031	<i>Niabella soli</i> strain DSM 19437
<i>Paraburkholderia caryophylli</i> strain HAMBI 2159	<i>Paraburkholderia</i> sp. strain SOS3
<i>Paraburkholderia kururiensis</i> strain HAMBI 2494	<i>Paraburkholderia</i> sp. strain SOS3
<i>Paracoccus denitrificans</i> strain HAMBI 2443	<i>Paracoccus denitrificans</i> strain PD1222
<i>Phyllobacterium myrsinacearum</i> strain HAMBI 1992	<i>Phyllobacterium</i> sp. strain Tri-48
<i>Pseudomonas chlororaphis</i> strain HAMBI 1977	<i>Pseudomonas chlororaphis</i> strain PA23
<i>Pseudomonas putida</i> strain HAMBI 6	<i>Pseudomonas putida</i> strain KT2440
<i>Psychrobacter proteolyticus</i> strain HAMBI 2948	<i>Psychrobacter</i> sp. strain G
<i>Sphingobacterium multivorum</i> strain HAMBI 1874	<i>Sphingobacterium</i> sp. strain 21
<i>Sphingobacterium spiritivorum</i> strain HAMBI 1896	<i>Sphingobacterium</i> sp. strain 21
<i>Sphingobium yanoikuyae</i> strain HAMBI 1842	<i>Sphingomonas</i> sp. strain JJ-A5
<i>Stenotrophomonas maltophilia</i> strain HAMBI 2659	NA (complete genome)
<i>Thermomonas haemolytica</i> strain HAMBI 2467	NA (closely related reference not found)