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Manuscript Title: Application of LpxC enzyme inhibitor to inhibit some fast-growing bacteria in human gut bacterial culturomics

Running title: Application of inhibitor in gut bacterial culturomics

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Supplementary table & figure

 Table S1 LpxC (UDP-3-O-acyl-N-acetylglucosamine deacetylase) coding sequence.

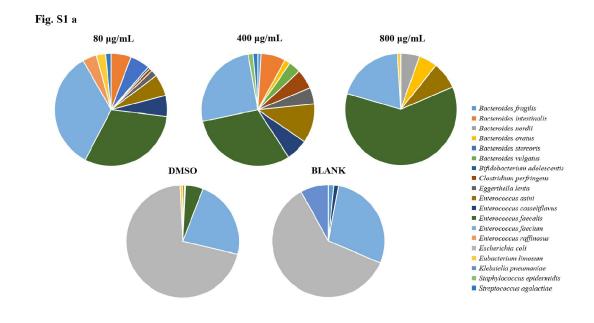
	Bacteria	LpxC source
	Escherichia coli	ARTFGFMRDIEYLQSRGLCLGGSFDCAIVVDDYRVLN
ive	Pseudomonas aeruginosa	ARTFGFMRDIEYLRSQNLALGGSVENAIVVDENRVLN
Sensitive	Klebsiella pneumoniae	ARTFGFMRDIEYLQSRGLCLGGSFDCAIVVDDYRVLN
Se	Proteus vulgaris	ARTFGFMRDIEYLQSKGLCLGGSFDCAIVVDDYRVLN
Insensitive	Bacteroides vulgatus	ARTFVFVREIEPLLGAGLIK <mark>GG</mark> DLDNA <mark>IVI</mark> YEKEMSQ

LpxC from *Bacteroides vulgatus* has 36% amino acid sequence identity to *E. coli* LpxC. The amino acids located in the inhibitor-binding site are responsible for affinity. By aligning the sequences of four CHIR-090-sensitive and one insensitive LpxCs, we found out one residue in Insert II hydrophobic passage is different between these two categories. Conserved hydrophobic residues are colored in red. The amino acids of key residues in the Insert II hydrophobic passage that would influence the affinity of CHIR-090 to LpxC are colored in orange (cf. [12]).

Table S2 taxonomic information of 102 species of bacteria.

(see addition file "Table S2 taxonomic information of 102 species of bacteria.xlsx")

Supplementary Figure



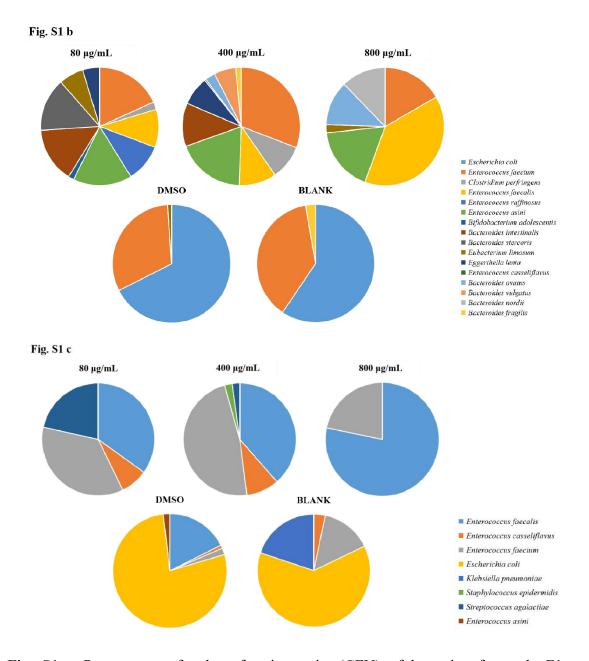


Fig. S1 a Percentages of colony-forming units (CFU) of bacteria of sample F1 cultured in with different concentrations of CHIR-090 under general condition (including anaerobic and aerobic concondition). In the DMSO and blank bottles (controls), *E. coli* and *Enterococcus faecium* occupied the largest percentages and only 6 and 5 species, respectively, of 19 species were isolated. In CHIR-090 bottles, *E. coli* was suppressed and the number of species increased to 12 in bottles with 80 and 400 μ g/mL CHIR-090, and the species shared similar percentages. In bottles with 800

 μ g/mL CHIR-090, the diversity of species was reduced to 6 of 19 species and *Enterococcus faecalis* prevailed, although *E. coli* was not found. **b** Percentages of Colony-Forming Units (CFU) of bacteria after co-cultivating suspension of F1 with different concentration of CHIR-090 in anaerobic condition. **c** in aerobic condition. *E.coli* was totally suppressed in DMSO and BLANK bottles. CHIR-090 bottles of 80 μ g/mL and 400 μ g/mL showed the largest diversity of bacteria species while the diversity of 800 μ g/mL bottle are less.

	DAY 01	DAY 03	DAY 06	DAY 12	DAY 21	DAY 3
Fusobacterium varium		2.11 05	2		2	2
Escherichia coli			8			8
Bacteroides massiliensis			Į		-	20
Klebsiella pneumoniae			Î.			1
Enterobacter annigemus					2	\$
A listipes finegoldii						
Clostridium hiranonis						1
Clostridium innocuum					2	2
Fusobacterium ulcerans						8
Clostridium buty ricum		-	2		-	8
A listipes onderdonkii	-		4		-	
A cinetobacter lwoffii	-				5	20
Bacillus cereus			<u> </u>			35
Bilop hila w adsw ort hia Clostridium bolteae	-	-	(-
Tissierella praeacuta		-	97		8	8
Parvimonas micra	<u> </u>				ii	-
Bacteroides xv lanisolvens						2
Clostridium perfringens						50°.
Strep to coccus mitis					1	Ĩ.
Streptococcus paras anguinis			1		8	8
Strep to coccus salivarius						
Weissella cibaria			8 I		S.	() ()
Streptococcus mutans	-					<u>(</u>)
Enterococcus raffinosus						
Enterococcus casseliflavus		-				3
Clostridium paraputrificum					_	
Bacillus pumilus			1			
tobacillus paracasei subsp.paracasei			5		-	3
Clostridium citroniae						1
Eggert hella lenta			(
Bacteroides vulgatus					<u>.</u>	2
Enterococcus faecium						
Bacteroides dorei			-		-	
Enterococcus durans	-	-				4
Enterococcus mundtii Bacteroides ovatus	-					2
Bacteroides uniformis			10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -			
Parabacteroides merdae			1		-	1
Enterococcus gallinarum		-	0.1			8
Bacteroides salversiae		-				
Clostridium bifermentans						8
Enterococcus faecalis						l.
Lactococcus lactis						
Streptococcus galloly ticus						10
Bacteroides fragilis						
Bifidobacterium adolescentis						
Bifidobacterium pseudocatenulatum			4	-		2
Lactococcus lactis subsp.cremoris						1
Streptococcus agalactiae			8 - Z			8
Bacteroides caccae						-
Bacteroides stercoris						
Enterococcus avium					2	5
Bifidobacterium longum						
Bacteroides thetaiotaomicron				-		200
Lactococcus garvieae			5		-	6
Citrobacter amalonaticus					_	10
Eubacterium limosum			-		2	10
Streptococcus anginosus	-				s. 2	20
Parabacteroides distasonis			-			-
Enterococcus hirae						
Bacteroides nordii		-			-	-
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Parabacteroides johnsonii	-					
Bacteroides intestinalis Buty ricimonas virosa	-					1
Parabacteroides goldsteinii		s				-
A listip es shahii	-			L		

g.S2b	-	T. 4 77 65		D 1 77 1 7	DATES	DATA	
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A cinetobacter hv offii		S. 2			3. 3		
Klebsiella pneumoniae subsp.pneumoniae		-			a		
Enterobacter annigenus		-		-	37		
Enterococcus thailandicus		4.1		<u>.</u>	8		
Morganella morganii							
Bacillus licheniformis							
Citrobacter amalonaticus	-	<u> </u>			1	1	
Proteus vulgaris						-	
Oceanobacillus chironomi		8			3) ()		
Citrobacter braakii		4					
Proteus penneri							
Paenibacillus fonticola		2 - 5			8		
Corv nebacterium aurimucosum		-				8	
Stenotrop homonas maltop hilia	2			-			
Serratia marcescens							
Citrobacter y oungae		-					
Bacillus altitudinis		3 8		2	3)		
Enterococcus mundtii				-	a		
Lactococcus garvieae							
Lactococcus lactis		1 J			Q		
Streptococcus oralis							
Stap hy lococcus aureus							
Lysinibacillus louembei					8 8	1	
Enterobacter kobei							
Fusobacterium varium	-			2	8 8		
Vagococcus teuberi					80		
Enterococcus durans		-					
Bacillus galactosidily ticus	-	1 J					
Lysinibacillus pakistanensis							
Ly sinibacillus sp haericus		1 I					
Bacteroides xy lanisolvens		X X		1	3	- 13	
new species							
Enterococcus faecalis				\$	0		
Exiguobacterium undae							
Enterococcus as ini							
Enterococcus hirae		1			8		
Enterococcus avium					-		
Ly sinibacillus boronitolerans							
Pseudogracilibacillus auburnensis		8 8			2 3		
Citrobacter freundii							
Escherichia coli				1	<u> (</u>		
Klebsiella pneumoniae							
Bacillus cereus			k	1	1		
Bacillus pumilus		1					
Enterococcus gallinarum							
Ly sinibacillus macroides				1	2		
Enterococcus casseliflavus				4	8		
Enterococcus faecium							
Ly sinibacillus fusiformis				-	8		
Oceanobacillus soiae							
Bacillus safensis		1					BLANK
bacillus aerius		1			6 2		CHIR090
Oceanobacillus oncorhy nchi							COMMO

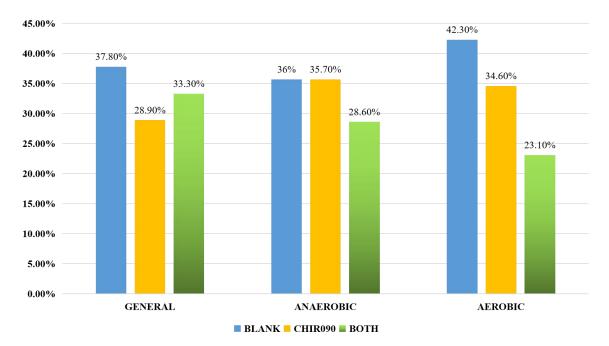
Fig. S2 a Distribution of all the anaerobic bacteria in 6 points in time. **b** Distribution of all the aerobic bacteria in 6 points in time. The blue color represents Blank group, the yellow represents CHIR-090 group, and the green represent existence in both bottles (COMMON group).

	DAY 01	DAY 03	DAY 06	DAY 12	DAY 21	DAY 30	
Bacteroides massiliensis							
Enterobacter annigenus		3			8 8		
Enterococcus mundtii							
Enterococcus thailandicus	1			·		1	
Escherichia coli		1 5			1		
A cinetobacter hw offii						2	
Morganella morganii		8 - 6			S 7	8	
Cory nebacterium aurimucosum	-	1 S			8 - S		
Klebsiella p neumoniae		1		·		3	
Stenotrop homonas maltop hilia		1			i 2		
Bacillus pumilus							
Citrobacter y oungae						1	
Citrobacter braakii		1 3			6 8		
Bacteroides nordii							
Bacteroides salversiae		9	-	-			
Parabacteroides goldsteinii		6 - S			8 6	1	
Parabacteroides johnsonii							
Bacteroides xv lanisolvens		1 2			0		
Bifidobacterium pseudocatemulatum		-			0 (3		
Streptococcus galloly ticus				-	1. N	3	
		8			-		
Streptococcus oralis						2	
Vagococcus teuberi		-	-	-	i . 7		
Lactococcus garvieae		1 21			0 V		
Enterococcus hirae	1	8 <u>.</u>		_	-	š	
Enterococcus avium					<u>,</u>	-	
Bacteroides ovatus		i			6 6		
Ly sinibacillus fusiformis					<u> </u>		
Enterococcus raffinosus		5					
Ly sinibacillus pakistanensis		3					
Ly sinibacillus sphaericus							
Exiguobacterium undae							
Bacteroides fragilis		1 A	10				
Enterococcus casseliflavus						2	
Enterococcus faecalis		6 j			8 0		
Enterococcus faecium							
Bacteroides vulgatus							
Enterococcus durans		1					
Eggerthella lenta		A					
Bacillus cereus					1		
Enterococcus as ini		8 8	-		8 8		
Fusobacterium varium							
Streptococcus anginosus					8 2		
Citrobacter freundii					x		BLANK
Bacteroides uniformis		'• í]1				CHIR090
Enterococcus gallinarum		1 8	3	-	1	1	COMMON

	DAY 01	DAY 03	DAY 06	DAY12	DAY 21	DAY 30	
A cinetobacter hv offii		1.11					
Bacteroides massiliensis		1			Š ž		
Enterococcus mundtii							
Escherichia coli							
Fusobacterium varium		2					
Bacillus cereus							
Bacteroides nordii		2			а. – Э		
Bacteroides salversiae		8 8			2 (
Parabacteroides goldsteinii		[]					
Parabacteroides johnsonii		8			š (
Bacteroides fragilis		U					
Bacteroides xy lanisolvens							
Bifidobacterium pseudocateriulatum					()		
Streptococcus galloly ticus		-		_		î	
Enterococcus avium	-			1	1	0	
Bacteroides ovatus							
Enterococcus raffinosus		· · · · ·					
Lactococcus garvieae		8			a is		
Enterococcus casseliflavus							
Enterococcus gallinarum				-			
Enterococcus faecium			-		. I		
Bacteroides vulgatus							
Enterococcus durans						1	
Eggerthella lenta		(– ()				1	
Enterococcus faecalis							
Streptococcus anginosus					is is	1	BLANK
Enterococcus as ini							CHIR090
Bacteroides uniformis		1					COMMON

	DAY 01	DAY 03	DAY 06	DAY12	DAY 21	DAY 30	
Enterobacter annigenus							
Enterococcus thailandicus	1	S		6 - 6			
Escherichia coli							
Morganella morganii							
A cinetobacter hv offii	8	S - 1		2			
Cory nebacterium aurimucosum			0				
Klebsiella pneumoniae	2					2	
Stenotrop homonas maltop hilia	1	8		1 - B			
Bacillus pumilus							
Citrobacter y oungae	j.	88	-	8			
Citrobacter braakii							
Exiguobacterium undae				(* <u> </u>		() () () () () () () () () ()	
Streptococcus oralis				1			
Vagococcus teuberi			(T				
Enterococcus hirce				e)			
Fusobacterium varium				8			
Lysinibacillus fusiformis							
Bacteroides xy lanisolvens)	8					
Lysinibacillus pakistanensis		30					
Ly sinibacillus sp haericus						i i i	
Enterococcus as ini	. · · ·	()	· · · · · · · · · · · · · · · · · · ·	200			
Bacillus cereus							
Enterococcus faecium						· · · · · · · · · · · · · · · · · · ·	
Enterococcus casseliflavus		2					BLANK
Enterococcus faecalis							CHIR090
Citrobacter freundii)	8					COMMON



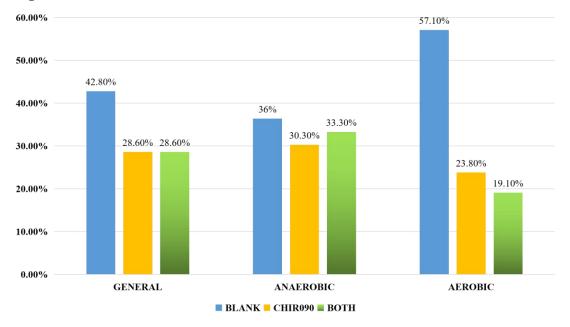


DAY 01 DAY 03 DAY 06 DAY 12 DAY 21 DAY 30 Exignobacterium under Escherichiacoli Kleisiella pneumonice Fusobacterium varium Bacteroides dorei Bacteroides messiliensis Clostrichum hiranonis Clostrichum innocuum A cimetobacter ho offi Enterooces anium Clostrichum bity ricum Enterooces anium Clostrichum bolty ricum Enterooces anium Clostrichum bolty ricum Enterooces anium Clostrichum bolty ricus Proteus vulgeris Clostrichum bolty ricus Alstipes onderdonkii Oceanobacillus sojæ Pavi monas micra Pavi monas micra Bithobox rerium ongum Bacteroides fragilis Strep tococcus faecilis Bithobox rerium pseudocterium longum Bacteroides stragilis Bithobox rerium perfingens Strep tococcus faecilis Bithobox rerium perfingens Strep tococcus faecilis Bithobox rerium perfingens Strep tococcus faecilis Bacteroides ovatus	
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Enterococcus avium	
Clostridhum buty ricum	
Enterococcus thailandicus	
Proteus vulgaris	
Clostridhum bolteæ	
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Stap hy lococcus aureus	
Bifidobacterium longum	
Bacteroides caccae	
Enterococcus faecalis	
Bifidobacterium pseudocatemulatum	
Clostridium perfringens	
Strep tococcus agalactiae	
Strep tococcus mitis	
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Bacillus licheniformis	
Enterococcus gallinarum	
Bacillus safensis	BLANK
Bacteroides uniformis	CHIR090
Parabacteroides distazonis	COMMO

	DAY 01	DAY 03	DAY 06	DAY 12	DAY 21	DAY 30	
Fusobacterium varium							
Escherichia coli		8			S - 1		
Bacteroides dorei							
Bacteroides massiliensis					-	1	
Clostridium hiranonis		0 - 3	1		()		
Clostridium innocuum						<u> </u>	
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A listipes onderdonkii		9					
Clostridium bolteae		1 1				1	
Streptococcus galloh ticus		6 8					
Parvimonas micra							
A listipes shahii		1					
Bacteroides fragilis					()		
Bifidobacterium longum						×	
Bifidobacterium pseudocatenulatum					S 7	8	
Clostridium perfringens		1 8			2 - X		
Streptococcus agalactiae					0	3	
Streptococcus mitis		1 8			š ž		
Bacteroides ovatus							
Enterococcus faecalis						1	
Clostridium paraputrificum		3				· · · · · · · · · · · · · · · · · · ·	
Enterococcus gallinarum							
Bacteroides thetaiotaomicron							
Enterococcus faecium		3					
Bacteroides vulgatus							
Parabacteroides merdae					8 8		
Parabacteroides distasonis				<u> </u>		2	
Bacteroides caccae						· · · · · ·	
Bacteroides stercoris		1		į.			
Eggert hella lenta							
Citrobacter amalonaticus							BLANK
Enterococcus hirae							CHIR090
Bacteroides uniformis		() () () () () () () () () ()					COMMON

	DAY 01	DAY 03	DAY 06	DAY 12	DAY21	DAY 30	
Escherichia coli		2	2		2		
Exiguobacterium undae			8		1 3		
A cinetobacter hv offii					_		
Klebsiella pneumoniae				<u> </u>			
Citrobacter analonaticus			S - 7				
Proteus vulgaris							
Bacillus cereus		s	1	· · · · · · · · · · · · · · · · · · ·			
Enterococcus gallinarum	-		1		8 - 8		
Enterococcus thailandicus					[]		
Enterococcus avium							
Oceanobacillus sojae						_	
Oceanobacillus oncorhynchi			1		·		
Stap hy lococcus aureus					1		
Enterococcus faecalis				(†			
bacillus aerius							
Enterococcus casseliflavus					1		
Ly sinibacillus macroides							
Enterococcus faecium					1 8	C	
Bacillus pumilus							BLANK
Bacillus safensis							CHIR090
Bacillus licheniformis			3 <i>1</i>		(D		COMMON



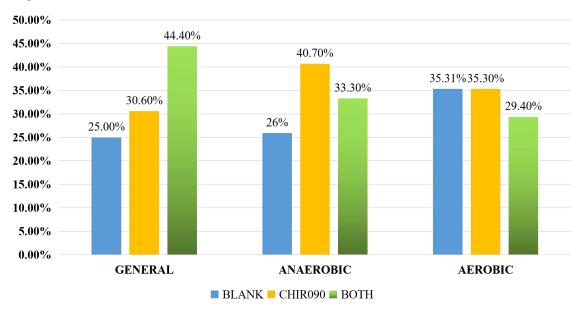


	DAY 01	DAY 03	DAY 06	DAY12	DAY 21	DAY 30	
bacillus aerius							
Enterobacter annigenus		1 1					
Exiguobacterium undae		0		2			
Bifidobacterium pseudocatenulatum							
Fusobacterium ulcerans	-	(
Proteus penneri							
Proteus vulgaris							
Bacillus cereus		2 - X					
Citrobacter amalonaticus							
Enterococcus faecalis				1			
Bacteroides xy lanisolvens						-	
Clostridium citroniae							
Clostridium perfringens							
Enterobacter kobei							
Enterococcus hirae					e		
Bacteroides salversiae		1			8 I		
Bacteroides uniformis							
Bacillus pumilus		ž – ž					
Bacteroides dorei							
Lactobacillus paracasei subsp.paracasei							
Lactococcus garvieae		()				-	
Escherichia coli							
Eggerthella lenta							
Enterococcus durans							
Klebsiella pneumoniae	(I						
Klebsiella pneumoniae subsp.pneumoniae		1					
Bacteroides fragilis						·	
Bacteroides stercoris							
Enterococcus faecium							
Enterococcus gallinarum						<u> </u>	
Enterococcus avium							
Bacillus licheniformis							
Enterococcus casseliflavus							
Parabacteroides distasonis			_				BLANK
Bacteroides ovatus							CHIR090
Bacteroides vulgatus							COMMO

	DAY 01	DAY 03	DAY 06	DAY 12	DAY 21	DAY 30	
Enterococcus durans							
Enterobacter annigenus			ŝ k		_	S	
Klebsiella pneumoniae			·····			20 2	
Escherichia coli							
Bifidobacterium pseudocatemulatum					100	8 8	
Fusobacterium ulcerans							
Enterococcus faecium							
Enterococcus faecalis							
Bacteroides xy lanisolvens							
Clostridium citroniae	1		8 - 73			8	
Clostridium perfringens						20 2	
Enterococcus hirae							
Bacteroides salversiae						S	
Enterococcus casseliflavus							
Bacteroides uniformis							
Bacillus pumilus						2	
Bacteroides dorei			0				
Lactobacillus paracasei subsp.paracasei			š – 2				
Lactococcus garvieae	· · · · · · · ·						
Enterococcus avium							
Enterococcus gallinarum		1					
Eggert hella lenta							
Bacteroides stercoris					· · · · · · · ·		
Bacteroides fragilis						8 1	_
Bacteroides ovatus							BLANK
Parabacteroides distasonis		-				8 8	CHIR090
Bacteroides vulgatus	-					1	COMMON

	DAY 01	DAY 03	DAY 06	DAY 12	DAY 21	DAY 30	
Exiguobacterium undae							
Proteus penneri					<u>*</u>		
Proteus vulgaris							
Citrobacter amalonaticus				L			
Bacillus cereus					3		
bacillus aerius							
Enterococcus faecium							
Enterococcus gallinarum							
Enterococcus faecalis							
Enterobacter kobei	1				8		
Enterococcus durans		1- 14					
Enterococcus avium							
Klebsiella pneumoniae subsp.pneumoniae					8		
Escherichia coli							
Klebsiella pneumoniae				·			BLANK
Bacillus licheniformis		k					CHIR090
Enterococcus casseliflavus							COMMON



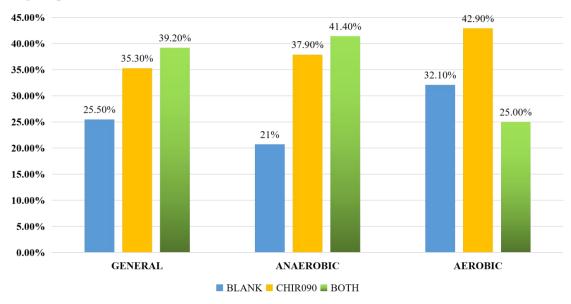


		Th 4 77 A 4	DATEAS		DATIAL	T
1 · · · · · · · · · · · · · · · · · · ·	DAYOI	DAY 03	DAY 06	DAY 12	DAY 21	DAY 3
A cinetobacter lw offii						
Enterobacter annigemus		1 - S			8 8	
Bacteroides ovatus		-			()	
Escherichia coli			_		-	
Oceanobacillus chironomi						
Klebsiella pneumoniae						
A listipes finegoldii						
Citrobacter amalonaticus						
Paenibacillus fonticola	-					
Bilophila wadsworthia					1	
Serratia marcescens						
Tissierella præcuta						
seudogracilibacillus auburnensis	_				1 1	
Bacillus altitudinis						
lobacterium pseudocatenulatum		1			3	
Lactococcus lactis		1			<u> </u>	
Stap hy lococcus aureus						
Streptococcus agalactiae		1 - 8			\$ - <i>2</i>	
Enterococcus faecalis						
Lactococcus garvieae						
Lysinibacillus louembei						
Weissella cibaria						
Bacteroides nordii		-				
Oceanobacillus sojae						
Bacillus galactosidily ticus						
Bacteroides intestinalis						
Buty ricimonas virosa						
new species						
Oceanobacillus oncorhy nchi		1 - 3				
A listipes shahii						
Enterococcus durans		i i	-	-		
Exiguobacterium undae		/			9 9	
Enterococcus casseliflavus					-	
Lysinibacillus boronitolerans		2				
	-				<u>n - </u>	
Ly sinibacillus fusiformis Bacteroides thetaiotaomicron		-	-			
				-		
Bifidobacterium longum			3	-		
Bacteroides stercoris		-	-		-	-
Bacteroides vulgatus		-				
Citrobacter freundii						-
Bacteroides uniformis					6 0	
Parabacteroides merdae			_		S	
Bifidobacterium adolescentis			-			
Clostridium bifermentans						
Enterococcus faecium						
Enterococcus mundtii						
Ly sinibacillus macroides			-			
Eggerthella lenta						
Enterococcus hirae						
Parabacteroides distasonis		1			8 3	

	DAY 01	DAY 03	DAY 06	DAY12	DAY 21	DAY 30	
Enterobacter annigenus							
Bacteroides ovatus		1 8			š – ž		
Escherichia coli							
A listipes finegoldii				·			
Bilop hila wadswort hia							
Tissierella praeacuta	-						
Bifidobacterium pseudocatemulatum			29	· · · · · · · · · · · · · · · · · · ·	2		
Lactococcus lactis		1 8			2		
Streptococcus agalactiae		S			0 0		
Weissella cibaria							
Lactococcus garvieae							
Bacteroides nordii					1 1		
Enterococcus hirae		1 3				18	
Bacteroides intestinalis							
Buty ricimonas virosa		1 (i			í		
A listipes shahii		1				2	
Enterococcus durans		(
Bacteroides thetaiotaomicron							
Bifidobacterium longum	L						
Bacteroides stercoris						1	
Bacteroides vulgatus							
Bacteroides uniformis							
Parabacteroides merdae					î — î	e	
Bifidobacterium adolescentis		1 3					
Clostridium bifermentans							
Enterococcus faecium							
Eggert hella lenta							BLANK
Enterococcus mundtii							CHIR090
Parabacteroides distasonis		1					COMMO

	DAY 01	DAY 03	DAY 06	DAY12	DAY 21	DAY 30	
A cinetobacter lw offii							
Escherichia coli		1 8			ž – ž		
Enterococcus hirce	-						
Klebsiella pneumoniae							
Oceanobacillus chironomi		1			()		
Citrobacter amalonaticus				4		l de la composición de	
Paenibacillus fonticola		·					
Serratia marcescens		9					
Pseudogracilibacillus auburnensis	_	1					
Bacillus altitudinis					8 8		
Enterococcus mundtii							
Lactococcus garvieae							
Lactococcus lactis							
Stap hy lococcus aureus					[]		
Enterococcus faecalis							
Enterococcus faecium		2 B	3				
Ly sinibacillus louembei							
Oceanobacillus sojae					() (
Bacillus galactosidily ticus							
new species							
Oceanobacillus oncorhy nchi		1					
Exiguobacterium undae						·	
Enterococcus casseliflavus					n í		
Ly sinibacillus fusiformis		8 3			8 - X		
Lysinibacillus boronitolerans	_	1			()		
Ly sinibacillus macroides					1		BLANK
Citrobacter freundii							CHIR090
Bacillus licheniformis						1. The second se	COMMON





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Enterobacter annigenus	DATVI	DATU	DATO	DATIZ	DATZI	DATO	
Exiguobacterium undae		1			8 8		
Parabacteroides merdae					9 9 		
A cinetobacter hv offii		1		1	00 - 00 1		
Bacteroides dorei				6	8		
Escherichia coli				-	Ø)		
Comanonas kerstersii		<u> </u>			6		
		/					
Bifidobacterium longum Citrobacter braakii	-			-	2 2		
	<u> </u>			1	2 2 - 5		
Klebsiella pneumoniae subsp.pneumoniae	-						
Klebsiella pneumoniae		8) 		
Bacillus licheniformis		3 3		-			
A listipes onderdonkii				-	<u>.</u>		
Oceanobacillus chironomi					6		
Buty ricimonas virosa		v 0			2 1	-	
Citrobacter y oungae							
Citrobacter freundii					6		
Clostridium bolteae	-	8 - 8			0 1		
Bacteroides caccae		-			8 <u> </u>		
Clostridium perfringens					8 7		
Enterococcus avium		<u>}</u>		-	8		
Lactococcus lactis subsp.cremoris							
Streptococcus parasanguinis							
Streptococcus salivarius		1					
Lactococcus lactis			-				
Stap hy lococcus aureus					i		
Streptococcus gallohy ticus					8		
Lactococcus garvieae							
Streptococcus mutans		1		-			
bacillus aerius						<u> </u>	
Parabacteroides goldsteinii							
Bacillus altitudinis		<u>.</u>			1		
Bacteroides salversiae							
Enterococcus casseliflavus					§i		
Bacillus pumilus		,					
Bacteroides vulgatus							
Enterococcus faecalis							
Eggerthella lenta							
Enterococcus faecium							
Eubacterium limosum							
Bacteroides uniformis			-				
Bacteroides stercoris						š	
Bacteroides ovatus		1					
Parabacteroides distasonis							ANK
Bacteroides intestinalis						CH	IR090
Parabacteroides johnsonii						CO	MMON

	DAY 01	DAY 03	DAY 06	DAY 12	DAY 21	DAY 30	
Enterobacter annigemus							
Parabacteroides merdae		-		š – ž			
Bacteroides dorei							
Bifidobacterium longum	1	·)					
Escherichia coli	1 3					5	
A listipes onderdonkii							
Buty ricimonas virosa	9 (A)		·			2	
Clostridium boltece	1			8 - M		1	
Bacteroides caccae		1		0 0			
Clostridium perfringens		-		8 8			
Enterococcus avium							
Lactococcus lactis subsp.cremoris			·	1 1			
Streptococcus parasanguinis				()		2	
Streptococcus salivarius			1.4				
Enterococcus faecalis		2		1 A		5	
Lactococcus lactis						5	
Streptococcus galloly ticus				0 0			
Lactococcus garvieae	2 8			8 8		1	
Streptococcus mutans							
Parabacteroides goldsteinii		-					
Enterococcus faecium		-			5.		
Eggerthella lenta							
Eubacterium limosum	a		· · · · · · · · · · · · · · · · · · ·			1	
Bacteroides salversiae	1 3						
Bacteroides uniformis							
Parabacteroides distasonis	2 8	3		-		1	
Bacteroides stercoris			-				
Bacteroides vulgatus							
Bacteroides ovatus	6 - B						BLANK
Parabacteroides johnsonii							CHIR090
Bacteroides intestinalis	e						COMMON

	DAY 01 D.	AY 03 DAY	06 DAY 12	DAY 21	DAY 30	
Enterobacter annigenus						
Exiguobacterium undae		10		8 8		
A cinetobacter lw offii						
Escherichia coli						
Comamonas kerstersii				1		
Citrobacter braakii						
Klebsiella pneumoniae subsp.pneumoniae						
Klebsiella pneumoniae	2			3		
Bacillus licheniformis						
Oceanobacillus chironomi				4 3		
Citrobacter y oungae						
Citrobacter freundii			_			
Stap hy lococcus aureus				1		
bacillus aerius						
Enterococcus faecium				1		
Bacillus altitudinis	4	100		1		N.1.1.1
Enterococcus casseliflavus						BLANK
Bacillus pumilus	i i i					CHIR090
Enterococcus faecalis						COMMON



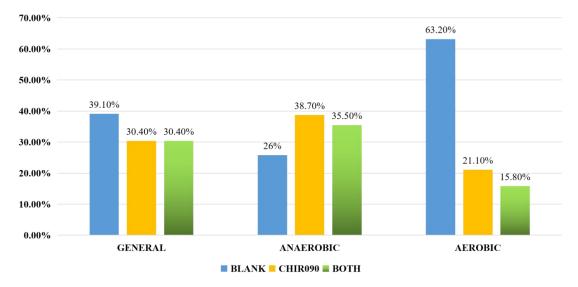


Fig. S3a The ditrubution of F2 bacteria at 6 points in time in the general condition. b In anaerobic condition. c In aerobic condition. d The percentage of bacteria existed both/ respectively in BLANK, CHIR090 group in general, anaerobic and aerobic condition. c The ditrubution of F3 bacteria at 6 points in time in the general condition. f In anaerobic condition. g In aerobic condition. h The percentage of bacteria existed both/ respectively in BLANK, CHIR090 group in general, anaerobic and aerobic condition. i The ditrubution of F4 bacteria at 6 points in time in the general condition. j In anaerobic condition. k In aerobic condition. I The percentage of bacteria existed both/ respectively in BLANK, CHIR090 group in general, anaerobic and aerobic condition. i The ditrubution of F5 bacteria at 6 points in time in the general condition. j In anaerobic condition. k In aerobic condition. I The percentage of bacteria existed both/ respectively in BLANK, CHIR090 group in general, anaerobic and aerobic condition. m The ditrubution of F5 bacteria at 6 points in time in the general condition. n In anaerobic condition. o In aerobic condition. p The percentage of bacteria existed both/ respectively in BLANK, CHIR090 group in general, anaerobic and aerobic condition. q The ditrubution of F6 bacteria at 6 points in time in the general condition. r In anaerobic condition. s In aerobic condition. t The percentage

of bacteria existed both/ respectively in BLANK, CHIR090 group in general, anaerobic and aerobic condition. The blue color represents Blank group, the yellow represents CHIR-090 group, and the green represent existence in both bottles (COMMON group).