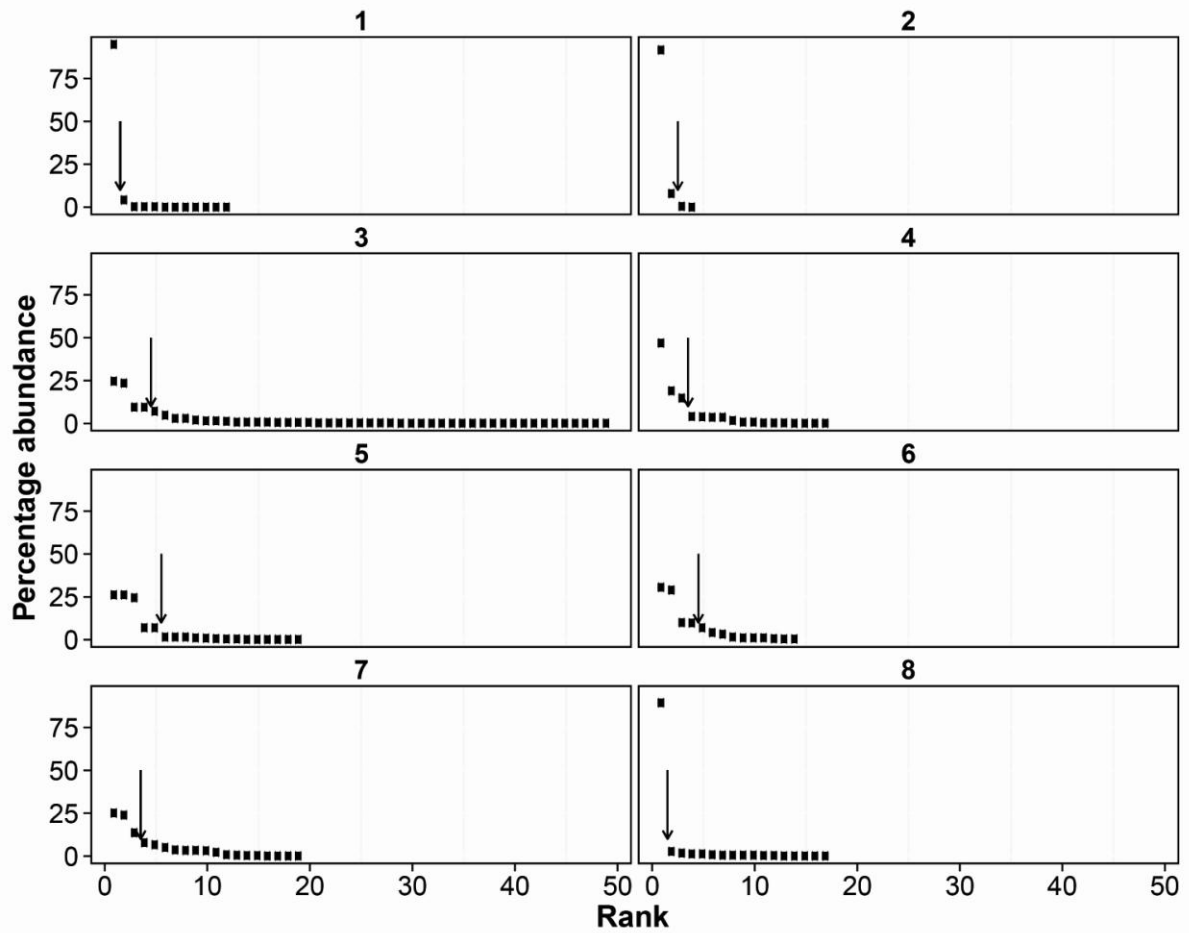


**Fig S1.** Rank abundance curves for each patient's bacterial community after a single freeze thaw cycle. Abundances are expressed as percentage of total abundance within each community. The arrows indicate the inflection point of each curve. Species to the left of the arrow were classified as common, and those at the right side were classified as rare.



**Table S1.** The raw sequence data reported in this paper have been deposited in the NCBI Short Read Archive database (Accession number PRJNA243349 ). A list of barcodes used and their associated sample are listed below.

Barcode	Patient	Sub-sample	Barcode	Patient	Sub-sample
ATGGCGTGCACA	1	1	ATGTGCACGACT	5	1
CAACACGCACGA	1	2	GTCGCTGTCTTC	5	2
GTCTATCGGAGT	1	3	GTCTGGATAGCG	5	3
GTGAGGTCGCTA	1	4	GTGGCGATACAC	5	4
GTGTGTGTCAGG	1	5	GTTGACGACAGC	5	5
TAAGCGCAGCAC	1	6	TACAGTCTCATG	5	6
ATGGTCTACTAC	2	1	ATGTGTGCGACTT	6	1
CAACTATCAGCT	2	2	GTCGTAGCCAGA	6	2
GTCTCATGTAGG	2	3	GTCTTCGTCGCT	6	3
GTGATAGTGCCG	2	4	GTGTACCTATCA	6	4
GTGTTGCAGCAT	2	5	GTTGTATACTCG	6	5
TACACACATGGC	2	6	ATTATCGTGAC	7	1
ATGTACGGCGAC	3	1	GTCGTGTGTCAA	7	2
CAACTCATCGTA	3	2	GTGACCTGATGT	7	3
GTCTCTCTACGC	3	3	GTGTCTACATTG	7	4
GTGCAATCGACG	3	4	TAACAGTCGCTG	7	5
GTTAGAGCACTC	3	5	ATTCTGTGAGCG	8	1
TACACGATCTAC	3	6	GTCTACACACAT	8	2
ATGTCACCGTGA	4	1	GTGACTGCGGAT	8	3
CAAGATCGACTC	4	2	GTGTGCTATCAG	8	4
GTCTGACAGTTG	4	3	TAACTCTGATGC	8	5
GTGCACATTATC	4	4	TACGATGACCAC	8	6
GTTCGCGTATAG	4	5			
TACAGATGGCTC	4	6			

**Table S2.** Bacterial taxa samples across eight sputum samples from adult CF patients. Species-level identities of detected taxa are reported here. However, given the sequence read length of the ribosomal sequences analysed, these identities should be considered putative.

<b>Class</b>	<b>Family</b>	<b>Taxon name</b>
Actinomycetales	Actinomycetaceae	<i>Actinomyces odontolyticus</i>
		<i>Actinomyces oris</i>
	Corynebacteriaceae	<i>Corynebacterium durum</i>
		<i>Corynebacterium matruchotii</i>
	Micrococcaceae	<i>Rothia mucilaginosa</i>
Propionibacteriaceae	<i>Propionibacterium propionicum</i>	
Bacillales	Bacillales	<i>Gemella morbillorum</i>
	Staphylococcaceae	<i>Staphylococcus aureus</i>
Bacteroidales	Bacteroidaceae	<i>Bacteroides acidofaciens</i>
		<i>Bacteroides vulgatus</i>
	Porphyromonadaceae	<i>Porphyromonas catoniae</i>
		<i>Porphyromonas endodontalis</i>
		<i>Tannerella forsythia</i>
		<i>Alloprevotella rava</i>
		<i>Prevotella denticola</i>
	Prevotellaceae	<i>Prevotella histicola</i>
		<i>Prevotella loescheii</i>
		<i>Prevotella maculosa</i>
		<i>Prevotella melaninogenica</i>
		<i>Prevotella nanceiensis</i>
		<i>Prevotella nigrescens</i>
		<i>Prevotella oralis</i>
		<i>Prevotella oris</i>
Rikenellaceae	<i>Prevotella pallens</i>	
	<i>Prevotella pleuritidis</i>	
Burkholderiales	Alcaligenaceae	<i>Prevotella salivae</i>
		<i>Prevotella tannerae</i>
		<i>Alistipes finegoldii</i>
		<i>Achromobacter xylosoxidans</i>

	Burkholderiaceae	<i>Lautropia mirabilis</i>
	Sutterellaceae	<i>Sutterella wadsworthensis</i>
Campylobacterales	Campylobacteraceae	<i>Campylobacter concisus</i>
Clostridiales	Clostridiaceae	<i>Clostridium</i> sp.
	Clostridiales	<i>Parvimonas micra</i>
	Eubacteriaceae	<i>Eubacterium brachy</i>
		<i>Eubacterium sulci</i>
	Lachnospiraceae	<i>Butyrivibrio fibrisolvens</i>
		<i>Catonella morbi</i>
		<i>Lachnoanaerobaculum orale</i>
		<i>Oribacterium sinus</i>
		<i>Shuttleworthia satelles</i>
		<i>Stomatobaculum longum</i>
	Peptostreptococcaceae	<i>Peptostreptococcus stomatis</i>
Coriobacteriales	Coriobacteriaceae	<i>Atopobium parvulum</i>
		<i>Olsenella uli</i>
Enterobacteriales	Enterobacteriaceae	<i>Escherichia coli</i>
Flavobacteriales	Flavobacteriaceae	<i>Capnocytophaga granulosa</i>
		<i>Capnocytophaga haemolytica</i>
		<i>Capnocytophaga ochracea</i>
		<i>Fusobacterium nucleatum</i>
	Leptotrichiaceae	<i>Leptotrichia buccalis</i>
		<i>Leptotrichia wadei</i>
		<i>Sneathia sanguinegens</i>
Lactobacillales	Aerococcaceae	<i>Abiotrophia defectiva</i>
	Carnobacteriaceae	<i>Granulicatella adiacens</i>
	Lactobacillaceae	<i>Lactobacillus fermentum</i>
		<i>Lactobacillus johnsonii</i>
	Streptococcaceae	<i>Streptococcus mutans</i>
		<i>Streptococcus parasanguinis</i>
		<i>Streptococcus salivarius</i>
Mycoplasmatales	Mycoplasmataceae	<i>Mycoplasma salivarium</i>
Neisseriales	Neisseriaceae	<i>Kingella denitrificans</i>
Pasteurellales	Pasteurellaceae	<i>Haemophilus parainfluenzae</i>
Pseudomonadales	Moraxellaceae	<i>Acinetobacter johnsonii</i>
		<i>Moraxella osloensis</i>
	Pseudomonadaceae	<i>Pseudomonas aeruginosa</i>

Rhizobiales

Hyphomicrobiaceae

*Pseudomonas putida*

*Hyphomicrobium* sp.

Selenomonadales

Veillonellaceae

*Selenomonas noxia*

*Anaeroglobus geminatus*

*Dialister invisus*

*Megasphaera micronuciformis*

*Selenomonas artemidis*

*Selenomonas noxia*

*Selenomonas sputigena*

*Veillonella parvula*