



Analysis and characterization of an SGB from the oral microbiome

Virginia Leombruni

magID	sampleID	sex	bmi	age	smoking_state	st
M1260886280	BP01007	female	25.7116620752984	64	non-smoker	mu
M1873802605	BP01023	male	24.6913580246914	65	non-smoker	mu
M1194372573	BP01030	female	25.390625	62	non-smoker	mu
M1114272019	BP01053	male	22.4913494809689	70	ex-smoker	mu
M1282899885	BP02008	male	24.6913580246914	73	smoker	pe
M1847318425	BP02019	female	25.7116620752984	77	smoker	mu
M1681596460	BP02027	male	26.2345679012346	60	smoker	he
M1707521290	BP02044	male	28.7273771904625	43	non-smoker	mu
M1397010834	BP03017	female	19.1326530612245	37	non-smoker	mu
M1499940801	BP04010	female	19.3624726594715	57	ex-smoker	pe
M1651786238	BP05009	female	24.2214532871972	62	smoker	he
M1517296339	BP07023	female	21.0771952275208	40	ex-smoker	mu
M1127218052	BP08040	female	18.491124260355	66	non-smoker	mu
M1188148053	BP08044	male		33	smoker	mu
M1397343304	BP08062	male	30.4218496484586	63	ex-smoker	pe
M1421637969	BP08066	female	21.9261258222297	70	non-smoker	mu
M1048341381	BP10004	female	16.0230732254446	55	non-smoker	he
M1052895688	BP11007	male	24.2122933884298	72	smoker	pe
M1362480498	BP11012	male	21.1463199091024	77	non-smoker	pe
M1829024632	BP11023	male	24.2122933884298	65	ex-smoker	pe
M1000973172	BP11027	male	29.0123456790123	73	non-smoker	pe
M1494835367	BP11028	female	26.8923231381548	38	smoker	he
M1586570985	BP11029	female	22.7244034844085	57	smoker	mu
M1992796799	BP11043	female	24.65483234714	80	non-smoker	he
M1173671022	BP11046	male	23.2459847844463	83	smoker	he
M1394460324	BP11058	female	25.4766600920447	70	non-smoker	mu
M1182440883	BP12006	male	23.3747260774288	72	non-smoker	he
M1831405370	BP13021	female	26.3146353230121	79	non-smoker	pe
M1290119613	BP14004	male	24.7842575173938	60	ex-smoker	mu
M1504735909	BP14017	female	26.9896193771626	50	smoker	he

***SET OF
30 MAGs***

Taxonomic assignment (PhyloPhlAn)

#input_bin	[u k]_[s G F]GBid:taxa_level:taxonomy:avg_dist
M1000973172	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.02075344059139785
M1048341381	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.026389579569892477
M1052095608	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.015054155349462367
M1114272019	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.01706251002688172
M1127218052	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.01581624693548387
M1173671022	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.018724155
M1182440883	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.021915911827956907
M1180140053	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.03112577876344086
M1194372573	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.01620413239247312
M1260886280	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.022813299462365592
M1282899885	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.015997709704301075
M1290119613	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.0193008920161290324
M1362480498	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.016531726693548385
M1394460324	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.017665879838709677
M1397010834	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.016475557849462367
M1397343304	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.01790510739247312
M1421637969	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.02936463870967742
M1494835367	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.02512804193548387
M1499940881	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.016314132983870966
M1504735909	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.020170157741935406
M1517296339	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.016388246424731183
M1586570985	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.02995124784946237
M1651786238	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.015901607876344086
M1601596460	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.01502979758064516
M1707521290	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.020800106451612902
M1829024632	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.016363033951612902
M1831405370	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.018026119112903225
M1847318425	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.031261621236559144
M1873002605	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.01623395056451613
M1992796799	kSGB_1526:Species:k_Bacteria p_Bacteroidota c_Bacteroidia o_Bacteroidales f_Prevotellaceae g_Prevotella s_Prevotella_pleuritidis t_SGB1526:0.020776374166666667

Quality checking (CheckM)

Bin Id	Marker lineage	# genomes	# markers	# marker sets	0	1	2	3	4	5+	Completeness
PH1651786238	Prevotella (S)	65	522	281	3	519	0	0	0	0	98.93
PH1282899885	Prevotella (S)	65	522	281	3	519	0	0	0	0	98.93
PH1194372573	Prevotella (S)	65	522	281	3	519	0	0	0	0	98.93
PH1127218852	Prevotella (S)	65	522	281	3	518	1	0	0	0	98.93
PH1681596460	Prevotella (S)	65	522	281	5	513	4	0	0	0	98.75
PH1052895688	Prevotella (S)	65	522	281	21	500	1	0	0	0	98.73
PH1517286110	Prevotella (S)	65	522	281	4	518	0	0	0	0	98.58
PH18398034612	Prevotella (S)	65	522	281	8	514	0	0	0	0	98.23
PH1114272819	Prevotella (S)	65	522	281	7	509	6	0	0	0	98.00
PH1362488498	Prevotella (S)	65	522	281	8	511	3	0	0	0	97.39
PH1873882685	Prevotella (S)	65	522	281	9	504	9	0	0	0	97.15
PH1397018834	Prevotella (S)	65	522	281	16	506	0	0	0	0	95.37
PH1499948881	Prevotella (S)	65	522	281	19	503	0	0	0	0	94.66
PH13944660324	Prevotella (S)	65	522	281	22	499	1	0	0	0	94.66
PH1173671832	Prevotella (S)	65	522	281	52	454	16	0	0	0	92.06
PH1298119613	Prevotella (S)	65	522	281	38	463	21	0	0	0	92.52
PH1584735989	Prevotella (S)	65	522	281	44	478	8	0	0	0	88.42
PH1387343384	Prevotella (S)	65	522	281	48	482	0	0	0	0	88.26
PH1982796799	Prevotella (S)	65	522	281	58	455	9	0	0	0	86.44
PH1182448883	Prevotella (S)	65	522	281	82	435	5	0	0	0	85.53
PH1707521290	Prevotella (S)	65	522	281	74	434	14	0	0	0	84.48
PH1831485370	Prevotella (S)	65	522	281	81	441	0	0	0	0	84.34
PH1088073172	Prevotella (S)	65	522	281	90	418	5	0	0	0	80.86
PH1268886280	Prevotella (S)	65	522	281	117	396	9	0	0	0	79.02
PH1494835367	Prevotella (S)	65	522	281	137	376	9	0	0	0	76.83
PH1586570985	Prevotella (S)	65	522	281	214	292	16	0	0	0	62.17
PH1848341381	Prevotella (S)	65	522	281	182	339	1	0	0	0	61.21
PH1421637969	Prevotella (S)	65	522	281	175	347	0	0	0	0	58.98
PH1847318425	Prevotella (S)	65	522	281	243	275	4	0	0	0	55.84
PH1188148853	Prevotella (S)	65	522	281	221	301	0	0	0	0	51.42

# High quality genomes (>90% completeness and <5% contamination)	16/30
# Medium quality genomes (>50% completeness and <5% contamination)	14/30
# Low quality genomes (<50% completeness or >5% contamination)	0/30
Average completeness	86.5%
Average contamination	0.754%
CG content ± std	0.452 ± 0.003
Average genome size	~ 2.1 Mb
Average # predicted genes	~ 2059

Genome annotation (Prokka)

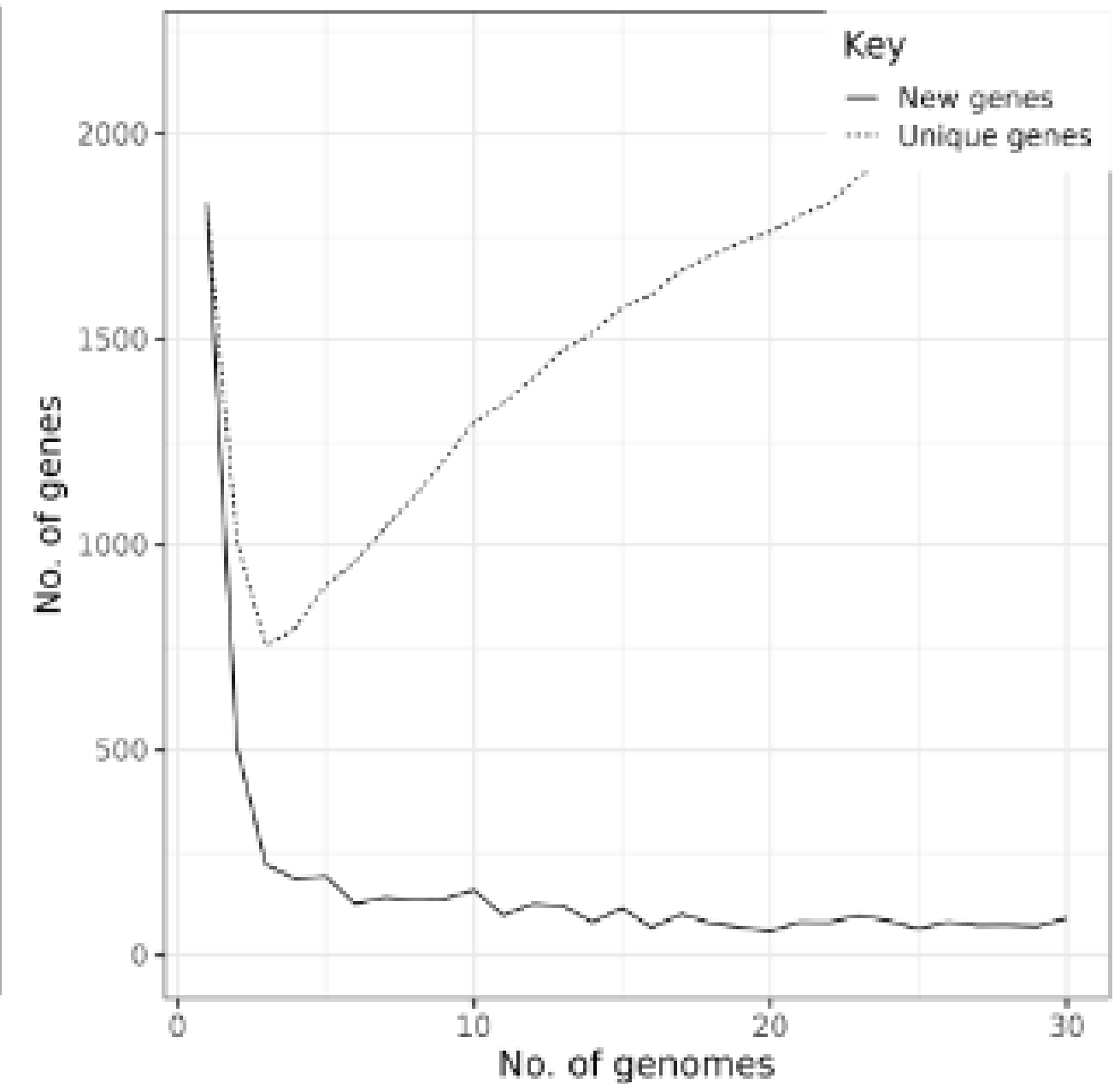
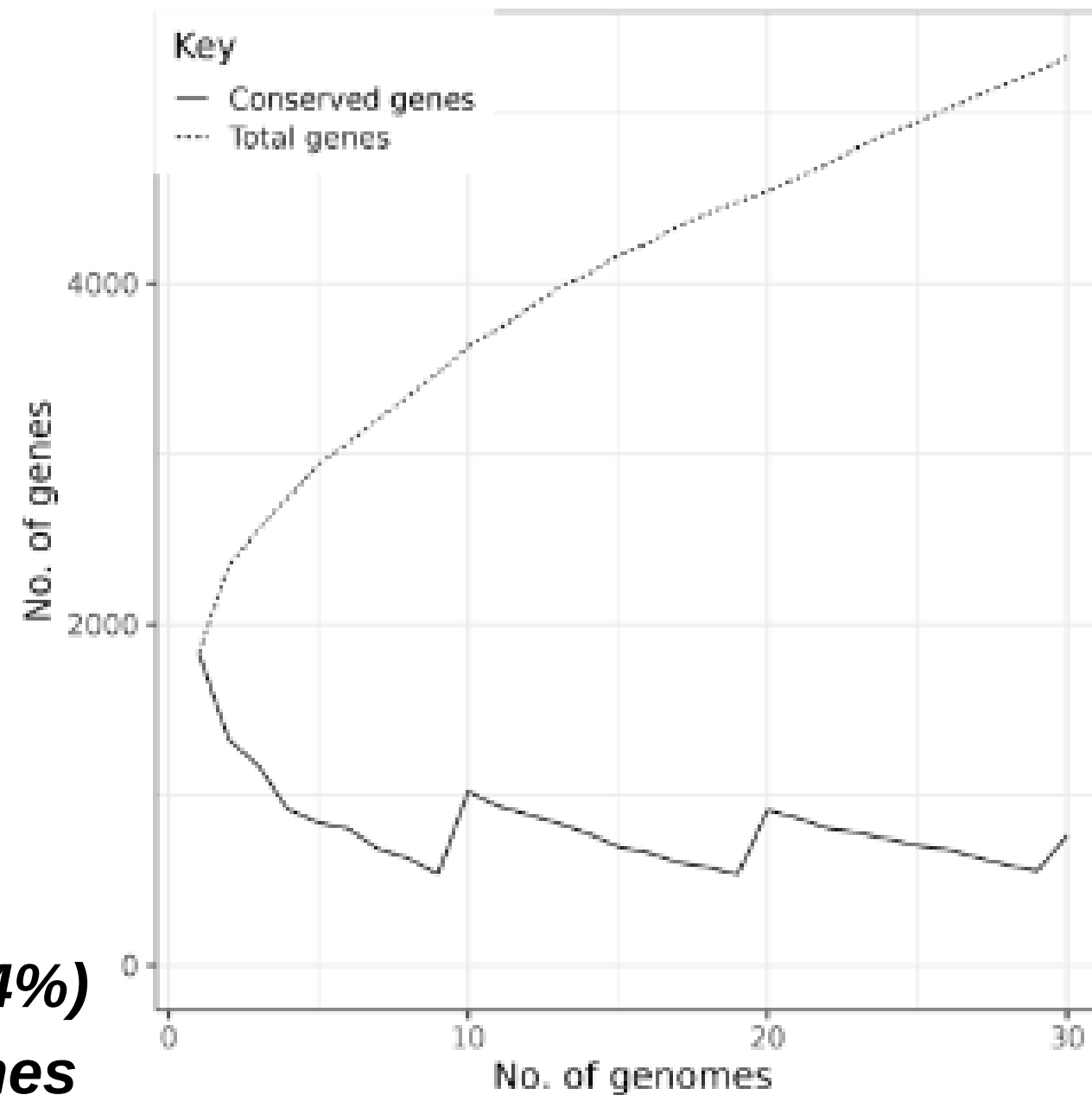
A total of 54,103 proteins were detected in the MAGs:

- about 1800 proteins/genome (compatible with quality-checking)***
 - 25,013 known proteins***
 - 29,090 hypothetical (about 54% of the proteome).***
-

Pangenome analysis (Roary)

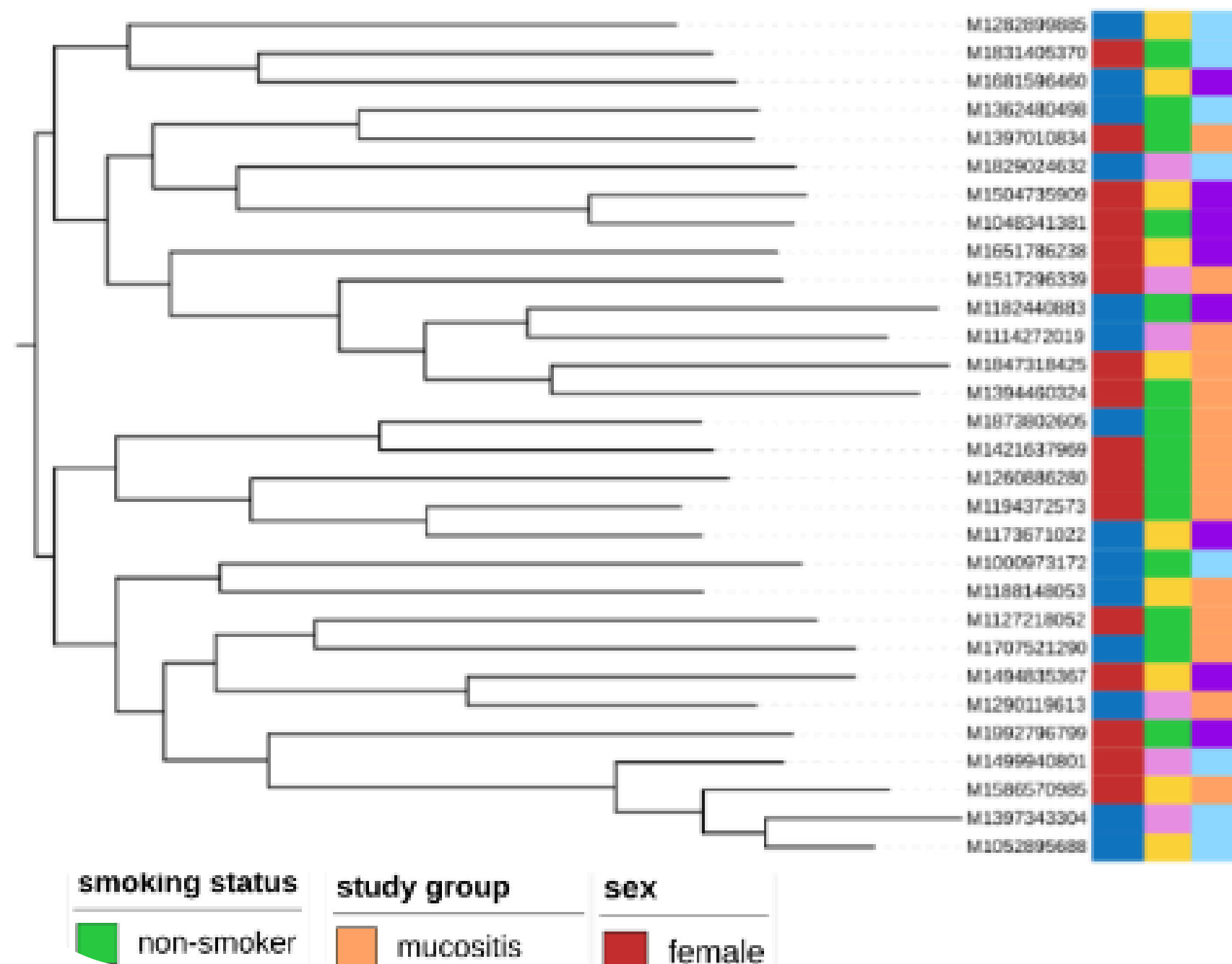
Total genes: 5336

- **764 core genes (~14%)**
- **4572 accessory genes**

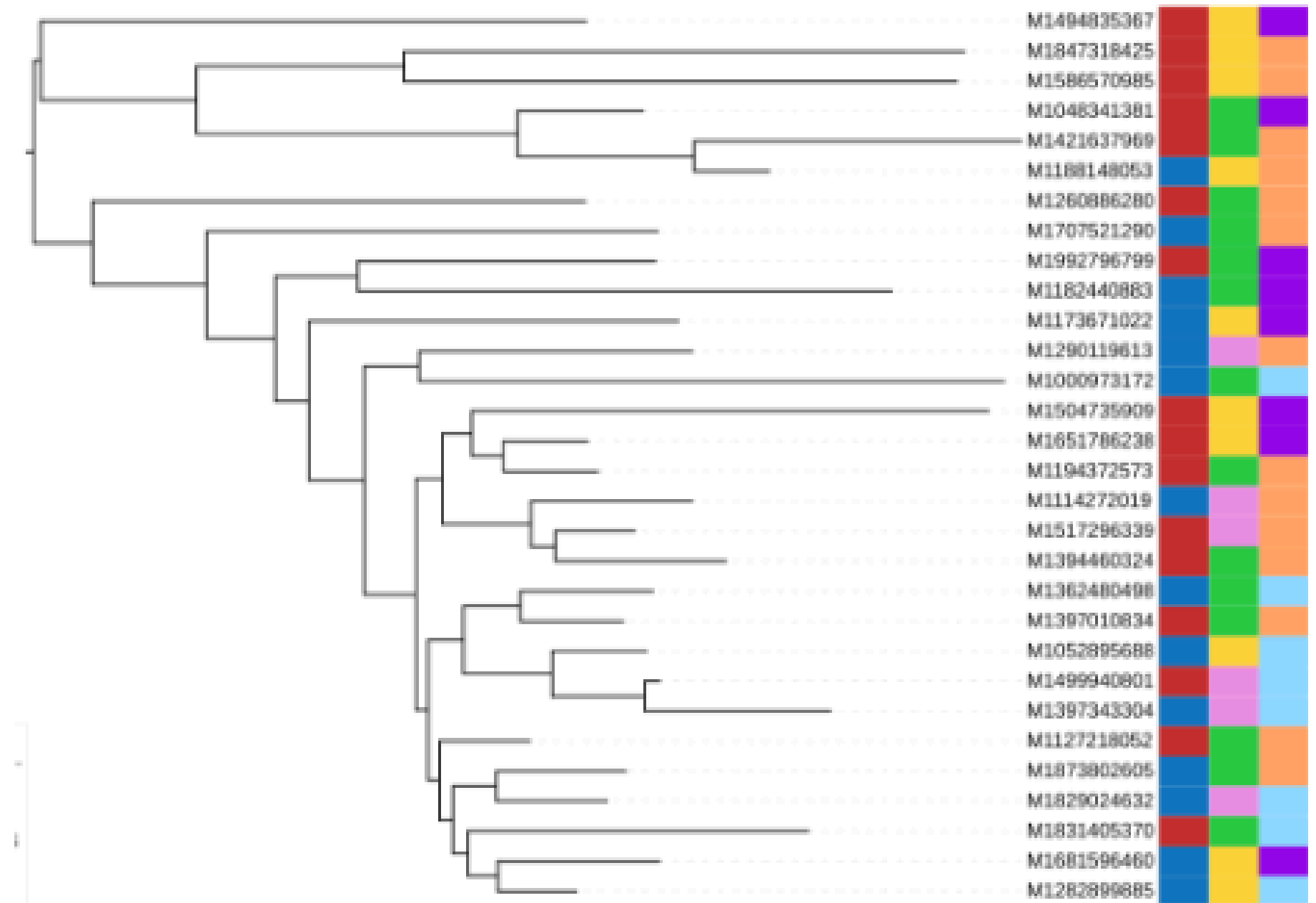


Phylogenetic data (Roary/FastTreeMP)

Core gene tree



Accessory gene tree



Conclusions

PANGENOME ANALYSIS

Detected extensive genetic plasticity

GENOMIC ANNOTATION

Shown that most of the genome content has yet to be characterised

***THANK YOU FOR
THE ATTENTION***