

## Additional File 1

Prokaryotic intragenomic genome signature comparisons. Note that some genera consist of only one species-type (e.g. Tropheryma). These are not considered in the intragenomic comparisons, but instead in the intraspecific comparisons.

	Numbers corresponding to Fig. 1		Accession numbers	Size (bp)
<b>Bacteria</b>				
<b>Actinobacteria</b>				
	1	Corynebacterium_diphtheriae_NCTC_13129	NC_002935	2488635
		Corynebacterium_efficiens_YS-314	NC_004369	3147090
		Corynebacterium_glutamicum_ATCC_13032	NC_003450	3309401
		Corynebacterium_glutamicum_ATCC_13032	NC_006958	3282708
		Corynebacterium_jeikeium_K411	NC_007164	2462499
	2	Mycobacterium_avium_subsp_paratuberculosis_str_k10	NC_002944	4829781
		Mycobacterium_bovis_AF2122/97	NC_002945	4345492
		Mycobacterium_leprae_TN	NC_002677	3268203
		Mycobacterium_tuberculosis_CDC1551	NC_002755	4403837
		Mycobacterium_tuberculosis_H37Rv	NC_000962	4411532
	3	Streptomyces_avermitilis_MA-4680	NC_003155	9025608
		Streptomyces_coelicolor_A3(2)	NC_003888	8667507
	*	Tropheryma_whipplei_TW08/27	NC_004551	925938
		Tropheryma_whipplei_str_Twist	NC_004572	927303
<b>Alphaproteobacteria</b>				
	4	Anaplasma_marginale_str_St_Maries	NC_004842	1197687
		Anaplasma_phagocytophilum_HZ	NC_007797	1471282
	5	Bartonella_henselae_str_Houston-1	NC_005956	1931047

	<i>Bartonella quintana</i> _str_Toulouse	NC_005955	1581384
6	<i>Ehrlichia canis</i> _str_Jake	NC_007354	1315030
	<i>Ehrlichia chaffeensis</i> _str_Arkansas	NC_007799	1176248
	<i>Ehrlichia ruminantium</i> _str_Gardel	NC_006831	1499920
	<i>Ehrlichia ruminantium</i> _str_Welgevonden	NC_005295	1516355
	<i>Ehrlichia ruminantium</i> _str_Welgevonden	NC_006832	1512977
7	<i>Nitrobacter hamburgensis</i> _X14	NC_007964	4406967
	<i>Nitrobacter winogradskyi</i> _Nb-255	NC_007406	3402093
*	<i>Rhodopseudomonas palustris</i> _BisB18	NC_007925	5513844
	<i>Rhodopseudomonas palustris</i> _BisB5	NC_007958	4892717
	<i>Rhodopseudomonas palustris</i> _CGA009	NC_005296	5459213
	<i>Rhodopseudomonas palustris</i> _HaA2	NC_007778	5331656
8	<i>Rickettsia bellii</i> _RML369-C	NC_007940	1522076
	<i>Rickettsia conorii</i> _str_Malish_7	NC_003103	1268755
	<i>Rickettsia felis</i> _URRWXCa2	NC_007109	1485148
	<i>Rickettsia prowazekii</i> _str_Madrid_E	NC_000963	1111523
	<i>Rickettsia typhi</i> _str_Wilmington	NC_006142	1111496
9	<i>Wolbachia endosymbiont</i> _of_ <i>Drosophila melanogaster</i>	NC_002978	1267782
	<i>Wolbachia endosymbiont</i> _strain_TRS_of_ <i>Brugia malayi</i>	NC_006833	1080084
<b>Bacteroidetes/Chlorobi</b>			
10	<i>Bacteroides fragilis</i> _NCTC_9343	NC_003228	5205140
	<i>Bacteroides fragilis</i> _YCH46	NC_006347	5277274
	<i>Bacteroides thetaiotaomicron</i> _VPI-5482	NC_004663	6260361
11	<i>Chlorobium chlorochromatii</i> _CaD3	NC_007514	2572079
	<i>Chlorobium tepidum</i> _TLS	NC_002932	2154946

**Betaproteobacteria**

12	Bordetella_bronchiseptica_RB50	NC_002927	5339179
	Bordetella_parapertussis_12822	NC_002928	4773551
	Bordetella_pertussis_Tohama_I	NC_002929	4086189
13	Neisseria_gonorrhoeae_FA_1090	NC_002946	2153922
	Neisseria_meningitidis_MC58	NC_003112	2272360
	Neisseria_meningitidis_Z2491	NC_003116	2184406

**Chlamydiae/Verrucomicrobia**

14	Chlamydia_muridarum_Nigg	NC_002620	1072950
	Chlamydia_trachomatis_A/HAR-13	NC_007429	1044459
	Chlamydia_trachomatis_D/UW-3/CX	NC_000117	1042519
15	Chlamydomphila_abortus_S26/3	NC_004552	1144377
	Chlamydomphila_caviae_GPIC	NC_003361	1173390
	Chlamydomphila_felis_Fe/C-56	NC_007899	1166239
	Chlamydomphila_pneumoniae_AR39	NC_002179	1229853
	Chlamydomphila_pneumoniae_CWL029	NC_000922	1230230
	Chlamydomphila_pneumoniae_J138	NC_002491	1226565
	Chlamydomphila_pneumoniae_TW-183	NC_005043	1225935

**Chloroflexi**

16	Dehalococcoides_ethenogenes_195	NC_002936	1469720
	Dehalococcoides_sp_CBDB1	NC_007356	1395502

**Cyanobacteria**

*	Prochlorococcus_marinus_str_MIT_9312	NC_007577	1709204
	Prochlorococcus_marinus_str_MIT_9313	NC_005071	2410873
	Prochlorococcus_marinus_str_NATL2A	NC_007335	1842899
	Prochlorococcus_marinus_subsp_marinus_str_CCMP1375	NC_005042	1751080
	Prochlorococcus_marinus_subsp_pastoris_str_CCMP1986	NC_005072	1657990

	17	Synechococcus_elongatus_PCC_6301	NC_006576	2696255
		Synechococcus_elongatus_PCC_7942	NC_007604	2695903
		Synechococcus_sp_CC9605	NC_007516	2510659
		Synechococcus_sp_CC9902	NC_007513	2234828
		Synechococcus_sp_WH_8102	NC_005070	2434428
<b>Deinococcus-Thermus</b>				
	*	Thermus_thermophilus_HB27	NC_005835	1894877
		Thermus_thermophilus_HB8	NC_006461	1849742
<b>Deltaproteobacteria</b>				
	18	Desulfovibrio_desulfuricans_G20	NC_007519	3730232
		Desulfovibrio_vulgaris_subsp_vulgaris_str_Hildenborough	NC_002937	3570858
	19	Geobacter_metallireducens_GS-15	NC_007517	3997420
		Geobacter_sulfurreducens_PCA	NC_002939	3814139
<b>Epsilonproteobacteria</b>				
	*	Campylobacter_jejuni_RM1221	NC_003912	1777831
		Campylobacter_jejuni_subsp_jejuni_NCTC_11168	NC_002163	1641481
	20	Helicobacter_hepaticus_ATCC_51449	NC_004917	1799146
		Helicobacter_pylori_26695	NC_000915	1667867
		Helicobacter_pylori_J99	NC_000921	1643831
<b>Firmicutes</b>				
	21	Bacillus_anthraxis_A2012_unfinished_sequence	NC_003995	5051677
		Bacillus_anthraxis_str_Ames	NC_003997	5227293
		Bacillus_anthraxis_str_Ames_AncestorcleanNC_007404fna	NC_007530	5227419
		Bacillus_anthraxis_str_Sterne	NC_005945	5228663
		Bacillus_cereus_ATCC_10987	NC_003909	5224283
		Bacillus_cereus_ATCC_14579	NC_004722	5411809
		Bacillus_cereus_E33L	NC_006274	5300915

	Bacillus_clausii_KSM-K16	NC_006582	4303871
	Bacillus_halodurans_C-125	NC_002570	4202352
	Bacillus_licheniformis_ATCC_14580	NC_006270	4222334
	Bacillus_licheniformis_ATCC_14580	NC_006322	4222645
	Bacillus_subtilis_subsp_subtilis_str_168	NC_000964	4214630
	Bacillus_thuringiensis_serovar_konkukian_str_97-27	NC_005957	5237682
<b>22</b>	Clostridium_acetobutylicum_ATCC_824	NC_003030	3940880
	Clostridium_perfringens_str_13	NC_003366	3031430
	Clostridium_tetani_E88	NC_004557	2799251
<b>23</b>	Lactobacillus_acidophilus_NCFM	NC_006814	1993564
	Lactobacillus_johnsonii_NCC_533	NC_005362	1992676
	Lactobacillus_plantarum_WCFS1	NC_004567	3308274
	Lactobacillus_sakei_subsp_sakei_23K	NC_007576	1884661
	Lactobacillus_salivarius_subsp_salivarius_UCC118	NC_007929	1827111
<b>24</b>	Listeria_innocua_Clip11262	NC_003212	3011208
	Listeria_monocytogenes_EGD-e	NC_003210	2944528
	Listeria_monocytogenes_str_4b_F2365	NC_002973	2905187
<b>25</b>	Mycoplasma_capricolum_subsp_capricolum_ATCC_27343	NC_007633	1010023
	Mycoplasma_gallisepticum_R	NC_004829	996422
	Mycoplasma_genitalium_G-37	NC_000908	580074
	Mycoplasma_hyopneumoniae_232	NC_006360	892758
	Mycoplasma_hyopneumoniae_7448	NC_007332	920079
	Mycoplasma_hyopneumoniae_J	NC_007295	897405
	Mycoplasma_mobile_163K	NC_006908	777079
	Mycoplasma_mycoides_subsp_mycoides_SC_str_PG1	NC_005364	1211703
	Mycoplasma_penetrans_HF-2	NC_004432	1358633
	Mycoplasma_pneumoniae_M129	NC_000912	816394
	Mycoplasma_pulmonis_UAB_CTIP	NC_002771	963879
	Mycoplasma_synoviae_53	NC_007294	799476

	Ureaplasma_parvum_serovar_3_str_ATCC_700970	NC_002162	751719
<b>26</b>	Staphylococcus_aureus_RF122	NC_007622	2742531
	Staphylococcus_aureus_subsp_aureus_COL	NC_002951	2809422
	Staphylococcus_aureus_subsp_aureus_MRSA252	NC_002952	2902619
	Staphylococcus_aureus_subsp_aureus_MSSA476	NC_002953	2799802
	Staphylococcus_aureus_subsp_aureus_MW2	NC_003923	2820462
	Staphylococcus_aureus_subsp_aureus_Mu50	NC_002758	2878529
	Staphylococcus_aureus_subsp_aureus_N315	NC_002745	2814816
	Staphylococcus_aureus_subsp_aureus_NCTC_8325	NC_007795	2821361
	Staphylococcus_aureus_subsp_aureus_USA300	NC_007793	2872769
	Staphylococcus_epidermidis_ATCC_12228	NC_004461	2499279
	Staphylococcus_epidermidis_RP62A	NC_002976	2616530
	Staphylococcus_haemolyticus_JCSC1435	NC_007168	2685015
	Staphylococcus_saprophyticus_subsp_saprophyticus	NC_007350	2516575
<b>27</b>	Streptococcus_agalactiae_2603V/R	NC_004116	2160267
	Streptococcus_agalactiae_A909	NC_007432	2127839
	Streptococcus_agalactiae_NEM316	NC_004368	2211485
	Streptococcus_mutans_UA159	NC_004350	2030921
	Streptococcus_pneumoniae_R6	NC_003098	2038615
	Streptococcus_pneumoniae_TIGR4	NC_003028	2160837
	Streptococcus_pyogenes_M1_GAS	NC_002737	1852441
	Streptococcus_pyogenes_MGAS10394	NC_006086	1899877
	Streptococcus_pyogenes_MGAS315	NC_004070	1900521
	Streptococcus_pyogenes_MGAS5005	NC_007297	1838554
	Streptococcus_pyogenes_MGAS6180	NC_007296	1897573
	Streptococcus_pyogenes_MGAS8232	NC_003485	1895017
	Streptococcus_pyogenes_SSI-1	NC_004606	1894275
	Streptococcus_thermophilus_CNRZ1066	NC_006449	1796226
	Streptococcus_thermophilus_LMG_18311	NC_006448	1796846

### **Gammaproteobacteria**

	* Buchnera_aphidicola_str_APS_(Acyrtosiphon_pisum)	NC_002528	640681
	Buchnera_aphidicola_str_Bp_(Baizongia_pistaciae)	NC_004545	615980
	Buchnera_aphidicola_str_Sg_(Schizaphis_graminum)	NC_004061	641454
<b>28</b>	Candidatus_Blochmannia_floridanus	NC_005061	705557
	Candidatus_Blochmannia_pennsylvanicus_str_BPEN	NC_007292	791654
	* Escherichia_coli_CFT073	NC_004431	5231428
	Escherichia_coli_K12	NC_000913	4639675
	Escherichia_coli_O157:H7	NC_002695	5498450
	Escherichia_coli_O157:H7_EDL933	NC_002655	5528445
	Escherichia_coli_UTI89	NC_007946	5065741
	Escherichia_coli_W3110_DNA	AC_000091	4646332
	Shigella_boydii_Sb227	NC_007613	4519823
	Shigella_dysenteriae_Sd197	NC_007606	4369232
	Shigella_flexneri_2a_str_2457T	NC_004741	4599354
	Shigella_flexneri_2a_str_301	NC_004337	4607203
	Shigella_sonnei_Ss046	NC_007384	4825265
	* Francisella_tularensis_subsp_holarctica	NC_007880	1895994
	Francisella_tularensis_subsp_tularensis	NC_006570	1892819
<b>29</b>	Haemophilus_ducreyi_35000HP	NC_002940	1698955
	Haemophilus_influenzae_86-028NP	NC_007146	1913428
	Haemophilus_influenzae_Rd_KW20	NC_000907	1830138
	* Legionella_pneumophila_str_Lens	NC_006369	3345687
	Legionella_pneumophila_str_Paris	NC_006368	3503610
	Legionella_pneumophila_subsp_pneumophila_str_Philadelphia_1	NC_002942	3397754
<b>30</b>	Pseudomonas_aeruginosa_PAO1	NC_002516	6264403
	Pseudomonas_fluorescens_Pf-5	NC_004129	7074893
	Pseudomonas_fluorescens_PfO-1	NC_007492	6438405

	<i>Pseudomonas_putida_KT2440</i>	NC_002947	6181863
	<i>Pseudomonas_syringae_pv_phaseolicola_1448A</i>	NC_005773	5928787
	<i>Pseudomonas_syringae_pv_syringae_B728a</i>	NC_007005	6093698
	<i>Pseudomonas_syringae_pv_tomato_str_DC3000</i>	NC_004578	6397126
<b>31</b>	<i>Salmonella_enterica_subsp_enterica_serovar_Choleraesuis_str_SC-B67</i>	NC_006905	4755700
	<i>Salmonella_enterica_subsp_enterica_serovar_Paratypi_A_str_ATCC_9150</i>	NC_006511	4585229
	<i>Salmonella_enterica_subsp_enterica_serovar_Typhi_Ty2</i>	NC_004631	4791961
	<i>Salmonella_enterica_subsp_enterica_serovar_Typhi_str_CT18</i>	NC_003198	4809037
	<i>Salmonella_typhimurium_LT2</i>	NC_003197	4857432
<b>32</b>	<i>Shewanella_denitrificans_OS217</i>	NC_007954	4545906
	<i>Shewanella_oneidensis_MR-1</i>	NC_004347	4969803
<b>33</b>	<i>Xanthomonas_axonopodis_pv_citri_str_306</i>	NC_003919	5175554
	<i>Xanthomonas_campestris_pv_campestris_str_8004</i>	NC_007086	5148708
	<i>Xanthomonas_campestris_pv_campestris_str_ATCC_33913</i>	NC_003902	5076188
	<i>Xanthomonas_campestris_pv-vesicatoria_str_85-10</i>	NC_007508	5178466
	<i>Xanthomonas_oryzae_pv_oryzae_KACC10331</i>	NC_006834	4941439
*	<i>Xylella_fastidiosa_9a5c</i>	NC_002488	2679306
	<i>Xylella_fastidiosa_Temecula1</i>	NC_004556	2519802
<b>34</b>	<i>Yersinia_pestis_CO92</i>	NC_003143	4653728
	<i>Yersinia_pestis_KIM</i>	NC_004088	4600755
	<i>Yersinia_pestis_biovar_Medievalis_str_91001</i>	NC_005810	4595065
	<i>Yersinia_pseudotuberculosis_IP_32953</i>	NC_006155	4744671
<b>Spirochaetes</b>			
<b>35</b>	<i>Borrelia_burgdorferi_B31</i>	NC_001318	910724
	<i>Borrelia_garinii_PBi_chromosome_linear</i>	NC_006156	904246
<b>36</b>	<i>Treponema_denticola_ATCC_35405</i>	NC_002967	2843201



	Treponema_pallidum_subsp_pallidum_str_Nichols	NC_000919	1138011
<b>Archaea</b>			
<b>Crenarchaeota</b>			
<b>37</b>	Sulfolobus_acidocaldarius_DSM_639	NC_007181	2225959
	Sulfolobus_solfataricus_P2	NC_002754	2992245
	Sulfolobus_tokodaii_str_7	NC_003106	2694756
<b>Euryarchaeota</b>			
<b>38</b>	Methanosarcina_acetivorans_C2A	NC_003552	5751492
	Methanosarcina_barkeri_str_fusaro_chromosome_1	NC_007355	4837408
	Methanosarcina_mazei_Go1	NC_003901	4096345
<b>39</b>	Pyrococcus_abyssi_GE5	NC_000868	1765118
	Pyrococcus_furiosus_DSM_3638	NC_003413	1908256
	Pyrococcus_horikoshii_OT3	NC_000961	1738505
<b>40</b>	Thermoplasma_acidophilum_DSM_1728	NC_002578	1564906
	Thermoplasma_volcanium_GSS1	NC_002689	1584804
	<b>Total number of genome sequences</b>		<b>209</b>

**\*) Genera with only 1 species are excluded from the intrageneric comparisons (these are included in the intraspecific comparisons)**