

Table S1. The pairwise comparison of ANI values between *S. oriscaviae* HKU75^T and 104 *Streptococcus* genomes.

Species	ANI (%)
<i>Streptococcus porcorum</i> DSM28302 ^T	84.7
<i>Streptococcus ferus</i> DSM 20646 ^T	84.2
<i>Streptococcus porci</i> DSM 23759 ^T	83.9
<i>Streptococcus orisratti</i> DSM 15617 ^T	83.9
<i>Streptococcus pseudoporcinus</i> NCTC13786 ^T	83.6
<i>Streptococcus dysgalactiae</i> subsp. <i>equisimilis</i> NCTC13762 ^T	83.5
<i>Streptococcus agalactiae</i> NCTC8181 ^T	83.3
<i>Streptococcus plurextorum</i> DSM 22810 ^T	83.3
<i>Streptococcus parauberis</i> NCFD 2020 ^T	82.9
<i>Streptococcus urinalis</i> NCTC13766 ^T	82.8
<i>Streptococcus canis</i> NCTC12191 ^T	82.7
<i>Streptococcus uberis</i> NCTC3858 ^T	82.6
<i>Streptococcus gallolyticus</i> subsp. <i>pasteurianus</i> WUSP067 ^T	82.4
<i>Streptococcus equi</i> subsp. <i>equi</i> NCTC9682 ^T	82.1
<i>Streptococcus pyogenes</i> DSM 20565 ^T	82.0
<i>Streptococcus suis</i> S735 ^T	81.9
<i>Streptococcus iniae</i> QMA0248 ^T	81.9
<i>Streptococcus dysgalactiae</i> FDAARGOS 1157 ^T	81.8
<i>Streptococcus salivarius</i> NCTC8618 ^T	81.7
<i>Streptococcus lutetiensis</i> NCTC13774 ^T	81.5
<i>Streptococcus gallolyticus</i> subsp. <i>gallolyticus</i> DSM 16831 ^T	81.5
<i>Streptococcus didelphis</i> DSM 15616 ^T	81.4
<i>Streptococcus mitis</i> NCTC 12261 ^T	81.4
<i>Streptococcus koreensis</i> JS71 ^T	81.3
<i>Streptococcus salivarius</i> subsp. <i>thermophilus</i> ATCC 19258 ^T	81.1
<i>Streptococcus constellatus</i> subsp. <i>pharyngis</i> SK1060 ^T	81.1
<i>Streptococcus hyointestinalis</i> NCTC12224 ^T	81.0
<i>Streptococcus hyovaginalis</i> DSM 12219 ^T	81.0
<i>Streptococcus bovimastitidis</i> NZ1587 ^T	80.9
<i>Streptococcus infantarius</i> FDAARGOS 1019 ^T	80.9
<i>Streptococcus intermedius</i> NCTC11324 ^T	80.9
<i>Streptococcus porcinus</i> NCTC10999 ^T	80.9
<i>Streptococcus criceti</i> HS-6 ^T	80.8
<i>Streptococcus halotolerans</i> HTS9 ^T	80.8
<i>Streptococcus phocae</i> ATCC 51973 ^T	80.7
<i>Streptococcus parasuis</i> DSM 29126 ^T	80.7
<i>Streptococcus himalayensis</i> HTS2 ^T	80.6
<i>Streptococcus equinus</i> ATCC 9812 ^T	80.6
<i>Streptococcus sobrinus</i> NCTC12279 ^T	80.6
<i>Streptococcus phocae</i> subsp. <i>salmonis</i> C-4 ^T	80.6
<i>Streptococcus parasanguinis</i> NCTC12854 ^T	80.6

<i>Streptococcus castoreus</i> DSM 17536 ^T	80.5
<i>Streptococcus minor</i> DSM 17118 ^T	80.5
<i>Streptococcus australis</i> NCTC13166 ^T	80.5
<i>Streptococcus pneumoniae</i> DSM 20566 ^T	80.4
<i>Streptococcus oralis</i> FDAARGOS 1020 ^T	80.4
<i>Streptococcus cristatus</i> NCTC12479 ^T	80.3
<i>Streptococcus troglodytae</i> TKU31 ^T	80.3
<i>Streptococcus equi</i> subsp. <i>ruminatorum</i> CECT 5772 ^T	80.2
<i>Streptococcus henryi</i> DSM 19005 ^T	80.2
<i>Streptococcus ruminantium</i> GUT187 ^T	80.2
<i>Streptococcus massiliensis</i> NCTC13765 ^T	80.2
<i>Streptococcus sanguinis</i> NCTC7863 ^T	80.1
<i>Streptococcus hongkongensis</i> CAIM 1895 ^T	80.1
<i>Streptococcus mutans</i> FDAARGOS 1458 ^T	80.1
<i>Streptococcus thoralensis</i> DSM 12221 ^T	80.0
<i>Streptococcus hillyeri</i> 28462 ^T	80.0
<i>Streptococcus salivioxodontae</i> DSM 27513 ^T	80.0
<i>Streptococcus constellatus</i> NCTC11325 ^T	79.9
<i>Streptococcus halichoeri</i> CCUG48324 ^T	79.8
<i>Streptococcus gordonii</i> ATCC 10558 ^T	79.8
<i>Streptococcus pacificus</i> CSL7591 ^T	79.8
<i>Streptococcus gwangjuense</i> ChDC B345 ^T	79.8
<i>Streptococcus lactarius</i> CCUG 66490 ^T	79.8
<i>Streptococcus pantholopis</i> TA 26 ^T	79.7
<i>Streptococcus zalophi</i> CSL7508 ^T	79.7
<i>Streptococcus peroris</i> ATCC 700780 ^T	79.7
<i>Streptococcus macacae</i> NCTC11558 ^T	79.7
<i>Streptococcus vicugnae</i> SL1232 ^T	79.7
<i>Streptococcus vestibularis</i> ATCC 49124 ^T	79.6
<i>Streptococcus rubneri</i> DSM 26920 ^T	79.6
<i>Streptococcus penaeicida</i> CAIM 1838 ^T	79.6
<i>Streptococcus pseudopneumoniae</i> ATCC BAA-960 ^T	79.6
<i>Streptococcus respiraculi</i> HTS25 ^T	79.6
<i>Streptococcus chenjunshii</i> Z15 ^T	79.6
<i>Streptococcus infantarius</i> subsp. <i>coli</i> DSM22957 ^T	79.5
<i>Streptococcus rupicaprae</i> DSM28303 ^T	79.5
<i>Streptococcus pharyngis</i> CCUG 66496 ^T	79.5
<i>Streptococcus anginosus</i> NCTC10713 ^T	79.5
<i>Streptococcus downei</i> NCTC11391 ^T	79.5
<i>Streptococcus gallolyticus</i> subsp. <i>macedonicus</i> CCUG 39970 ^T	79.4
<i>Streptococcus marmotae</i> HTS5 ^T	79.4
<i>Streptococcus loxodontisalivarius</i> DSM 27382 ^T	79.4
<i>Streptococcus merionis</i> NCTC13788 ^T	79.4
<i>Streptococcus marimammalium</i> DSM 18627 ^T	79.3

<i>Streptococcus infantis</i> ATCC 700779 ^T	79.2
<i>Streptococcus ursoris</i> DSM 22768 ^T	79.2
<i>Streptococcus periodonticum</i> KCOM 2412 ^T	79.2
<i>Streptococcus moroccensis</i> DSM105143 ^T	79.1
<i>Streptococcus caballi</i> DSM 19004 ^T	79.1
<i>Streptococcus entericus</i> DSM 14446 ^T	79.0
<i>Streptococcus acidominimus</i> NCTC12957 ^T	79.0
<i>Streptococcus gallinaceus</i> DSM15349 ^T	79.0
<i>Streptococcus ovuberis</i> CCUG 69612 ^T	78.9
<i>Streptococcus oralis</i> subsp. <i>dentisani</i> 7747 ^T	78.8
<i>Streptococcus ovis</i> DSM 16829 ^T	78.8
<i>Streptococcus sinensis</i> HKU4 ^T	78.7
<i>Streptococcus ratti</i> FA-1 ^T	78.6
<i>Streptococcus cuniculi</i> CCUG 65085 ^T	78.4
<i>Streptococcus chosunense</i> ChDC B353 ^T	78.4
<i>Streptococcus azizii</i> 12-5202 ^T	78.3
<i>Streptococcus devriesei</i> DSM 19639 ^T	78.1
<i>Streptococcus anginosus</i> subsp. <i>whileyi</i> CCUG 39159 ^T	78.0
<i>Streptococcus oricebi</i> CCUG 70868 ^T	77.9

Table S2. Single gene locus and genome sequences used for analyses in the present study.

Species	GenBank accession numbers			
	16S rRNA	<i>groEL</i>	<i>rpoB</i>	Genome
<i>Streptococcus mitis</i> NCTC 12261 ^T	AF003929.1	^a 246201	^a 246201	^a 246201.6
<i>Streptococcus oricebi</i> CCUG 70868 ^T	LC002970.1	^a 1547447	^a 1547447	^a 1547447.3
<i>Streptococcus moroccensis</i> DSM105143 ^T	KF999654.1	^b 2926467293	^b 2926467293	^b 2926467293
<i>Streptococcus porcorum</i> DSM28302 ^T	FN643224.1	^b 2928214140	^b 2928214140	^b 2928214140
<i>Streptococcus rupicaprae</i> DSM28303 ^T	FN813250.1	^b 2928216081	^b 2928216081	^b 2928216081
<i>Streptococcus infantarius</i> subsp. <i>coli</i> DSM22957 ^T	AF429763.1	^b 2928254298	^b 2928254298	^b 2928254298
<i>Streptococcus parasuis</i> DSM 29126 ^T	LC208542.1	^b 2928335100	^b 2928335100	^b 2928335100
<i>Streptococcus gallinaceus</i> DSM15349 ^T	AJ307888.1	^b 2928547191	^b 2928547191	^b 2928547191
<i>Streptococcus parauberis</i> NCFD 2020 ^T	AY584477.1	AEUT02000001.1	AEUT02000001.1	GCA_000187935.2
<i>Streptococcus criceti</i> HS-6 ^T	AJ420198.1	AEUV02000002.1	AEUV02000002.1	GCA_000187975.3
<i>Streptococcus anginosus</i> subsp. <i>whileyi</i> CCUG 39159 ^T	JN787193.1	AICP01000035.1	AICP01000007.1	GCA_000257765.1
<i>Streptococcus ratti</i> FA-1 ^T	AJ420201.1	AJTZ01000003.1	AJTZ01000003.1	GCA_000286075.1
<i>Streptococcus troglodytae</i> TKU31 ^T	AB679299.1	AP014612.1	AP014612.1	GCA_002355215.1
<i>Streptococcus ruminantium</i> GUT187 ^T	LC195038.1	AP018400.1	AP018400.1	GCA_003609975.1
<i>Streptococcus henryi</i> DSM 19005 ^T	EF364097.1	AQYA01000031.1	AQYA01000031.1	GCA_000376985.1
<i>Streptococcus minor</i> DSM 17118 ^T	AY232832.1	AQYB01000026.1	AQYB01000022.1	GCA_000377005.1
<i>Streptococcus hyovaginalis</i> DSM 12219 ^T	Y07601.1	ATVP01000011.1	ATVP01000011.1	GCA_000420785.1
<i>Streptococcus devriesei</i> DSM 19639 ^T	AJ564067.1	AUIN01000013.1	AUIN01000013.1	GCA_000423725.1
<i>Streptococcus plurextorum</i> DSM 22810 ^T	AM774228.1	AUIO01000005.1	AUIO01000006.1	GCA_000423745.1
<i>Streptococcus porci</i> DSM 23759 ^T	AM941160.1	AUIP01000017.1	AUIP01000011.1	GCA_000423765.1
<i>Streptococcus castoreus</i> DSM 17536 ^T	AJ606047.1	AUKZ01000013.1	AUKZ01000003.1	GCA_000425025.1
<i>Streptococcus equi</i> subsp. <i>ruminantium</i> CECT 5772 ^T	AJ605748.1	AWEX01000060.1	AWEX01000061.1	GCA_000706805.1
<i>Streptococcus constellatus</i> subsp. <i>pharyngis</i> SK1060 ^T	AY309095.1	BASX01000017.1	BASX01000011.1	GCA_900459125.1

<i>Streptococcus oralis</i> subsp. <i>dentisani</i> 7747 ^T	HG315101.1	CAUK01000003.1	CAUK01000004.1	GCA_000382825.1
<i>Streptococcus suis</i> S735 ^T	AB002525.1	CP003736.1	CP003736.1	GCA_000294495.1
<i>Streptococcus pantholopis</i> TA 26 ^T	KU877326.1	CP014699.1	CP014699.1	GCA_001642085.1
<i>Streptococcus halotolerans</i> HTS9 ^T	KU865003.1	CP014835.1	CP014835.1	GCA_001598035.1
<i>Streptococcus marmotae</i> HTS5 ^T	KU992301.1	CP015196.1	CP015196.1	GCA_001623565.1
<i>Streptococcus himalayensis</i> HTS2 ^T	KX679400.1	CP016953.1	CP016953.1	GCA_001708305.1
<i>Streptococcus gallolyticus</i> subsp. <i>gallolyticus</i> DSM 16831 ^T	AF104114.1	CP018822.1	CP018822.1	GCA_002000985.1
<i>Streptococcus iniae</i> QMA0248 ^T	AF335572.1	CP022392.1	CP022392.1	GCA_002220115.1
<i>Streptococcus respiraculi</i> HTS25 ^T	MF509297.1	CP022680.1	CP022680.1	GCA_003595525.1
<i>Streptococcus chenjunshii</i> Z15 ^T	MG847187.1	CP031733.1	CP031733.1	GCA_003086355.2
<i>Streptococcus koreensis</i> JS71 ^T	MK748164.1	CP032620.1	CP032620.1	GCA_003627135.1
<i>Streptococcus gwangjuense</i> ChDC B345 ^T	KF733672.1	CP032621.1	CP032621.1	GCA_003627155.1
<i>Streptococcus periodonticum</i> KCOM 2412 ^T	MK452275.1	CP034543.1	CP034543.1	GCA_003963555.1
<i>Streptococcus salivarius</i> subsp. <i>thermophilus</i> ATCC 19258 ^T	AY188354.1	CP038020.1	CP038020.1	GCA_010120595.1
<i>Streptococcus gallolyticus</i> subsp. <i>pasteurianus</i> WUSP067 ^T	AJ297216.1	CP039457.1	CP039457.1	GCA_004843545.1
<i>Streptococcus infantarius</i> FDAARGOS 1019 ^T	AF429762.1	CP065994.1	CP065994.1	GCA_016127275.1
<i>Streptococcus oralis</i> FDAARGOS 1020 ^T	AF003932.1	CP066021.1	CP066021.1	GCA_016127555.1
<i>Streptococcus dysgalactiae</i> FDAARGOS 1157 ^T	AB002485.1	CP068057.1	CP068057.1	GCA_016724885.1
<i>Streptococcus oriscaviae</i> HKU75 ^T	ON000582.1	MW182243.1	MW182242.1	GCA_018137985.1
<i>Streptococcus mutans</i> FDAARGOS 1458 ^T	AB680533.1	CP077404.1	CP077404.1	GCA_019048645.1
<i>Lactococcus lactis</i> ATCC 19435 ^T	NR_040955.1	FMTF01000003.1	FMTF01000007.1	GCA_900099625.1
<i>Streptococcus equinus</i> ATCC 9812 ^T	AB680295.1	GL698434.1	GL698434.1	GCA_000187265.1
<i>Streptococcus infantis</i> ATCC 700779 ^T	AB008315.1	GL732439.1	GL732439.1	GCA_000187465.1
<i>Streptococcus peroris</i> ATCC 700780 ^T	AB008314.1	GL732463.1	GL732463.1	GCA_000187585.1
<i>Streptococcus vestibularis</i> ATCC 49124 ^T	AY188353.1	GL831112.1	GL831112.1	GCA_000188295.1
<i>Streptococcus ovuberis</i> CCUG 69612 ^T	LT714696.1	JAAXPR010000018.1	JAAXPR010000021.1	GCA_012396585.1
<i>Streptococcus ursoris</i> DSM 22768 ^T	AB501126.1	JABASA010000015.1	JABASA010000015.1	GCA_012843165.1
<i>Streptococcus vicugnae</i> SL1232 ^T	JAEMHW010000010.1	JAEMHW010000003.1	JAEMHW010000003.1	GCA_016461705.1

<i>Streptococcus pacificus</i> CSL7591 ^T	JAENBO010000009.1	JAENBO010000006.1	JAENBO010000006.1	GCA_016481305.1
<i>Streptococcus zalophi</i> CSL7508 ^T	MT537727.1	JAENBP010000007.1	JAENBP010000007.1	GCA_016481285.1
<i>Streptococcus loxodontisalivarius</i> DSM 27382 ^T	AB828326.1	JAFBEH010000012.1	JAFBEH010000040.1	GCA_016908645.1
<i>Streptococcus saliviloxodontae</i> DSM 27513 ^T	AB828327.1	JAFBEI010000027.1	JAFBEI010000033.1	GCA_016908655.1
<i>Streptococcus sinensis</i> HKU4 ^T	AF432856.1	JPEN01000050.1	JPEN01000109.1	GCA_000767835.1
<i>Streptococcus hongkongensis</i> CAIM 1895 ^T	HQ335006.1	JX046531.1	JX046537.1	GCA_000785845.1
<i>Streptococcus phocae</i> subsp. <i>salmonis</i> C-4 ^T	FR846243.1	JSAP01000003.1	JSAP01000060.1	GCA_000772915.1
<i>Streptococcus caballi</i> DSM 19004 ^T	EF364098.1	KB904073.1	KB904071.1	GCA_000379985.1
<i>Streptococcus entericus</i> DSM 14446 ^T	AJ409287.1	KB904183.1	KB904155.1	GCA_000380025.1
<i>Streptococcus didelphis</i> DSM 15616 ^T	AF176103.1	KB904189.1	KB904198.1	GCA_000380005.1
<i>Streptococcus marimammalium</i> DSM 18627 ^T	AJ634751.1	KB904360.1	KB904360.1	GCA_000380045.1
<i>Streptococcus orisratti</i> DSM 15617 ^T	AF124350.1	KB904501.1	KB904515.1	GCA_000380105.1
<i>Streptococcus ovis</i> DSM 16829 ^T	Y17358.1	KB904584.1	KB904584.1	GCA_000380125.1
<i>Streptococcus thoralensis</i> DSM 12221 ^T	Y09007.1	KB904609.1	KB904604.1	GCA_000380145.1
<i>Streptococcus gordonii</i> ATCC 10558 ^T	EU156758.1	KQ759749.1	KQ759749.1	GCA_001469295.1
<i>Streptococcus phocae</i> ATCC 51973 ^T	AF235052.1	LHQM01000006.1	LHQM01000035.1	GCA_001302265.1
<i>Streptococcus pyogenes</i> DSM 20565 ^T	AB002521.1	LN831034.1	LN831034.1	GCA_002055535.1
<i>Streptococcus pneumoniae</i> DSM 20566 ^T	AB681893.1	LN831051.1	LN831051.1	GCA_001457635.1
<i>Streptococcus penaeicida</i> CAIM 1838 ^T	KU212904.1	LOCM01000033.1	LOCM01000030.1	GCA_002887775.1
<i>Streptococcus salivarius</i> NCTC8618 ^T	AY188352.1	LR134274.1	LR134274.1	GCA_900636435.1
<i>Streptococcus anginosus</i> NCTC10713 ^T	AF104678.1	LR134283.1	LR134283.1	GCA_900636475.1
<i>Streptococcus canis</i> NCTC12191 ^T	AB002483.1	LR134293.1	LR134293.1	GCA_900636575.1
<i>Streptococcus urinalis</i> NCTC13766 ^T	DQ303194.1	LR134323.1	LR134323.1	GCA_900636885.1
<i>Streptococcus pseudoporcinus</i> NCTC13786 ^T	DQ303209.1	LR134341.1	LR134341.1	GCA_900637075.1
<i>Streptococcus equi</i> subsp. <i>equi</i> NCTC9682 ^T	AB002515.1	LR134389.1	LR134389.1	GCA_900637675.1
<i>Streptococcus ferus</i> DSM 20646 ^T	AY584479.1	LS483343.1	LS483343.1	GCA_900475025.1
<i>Streptococcus sobrinus</i> NCTC12279 ^T	AJ243966.1	LS483378.1	LS483378.1	GCA_900475395.1

<i>Streptococcus cristatus</i> NCTC12479 ^T	AY188347.1	LS483383.1	LS483383.1	GCA_900475445.1
<i>Streptococcus sanguinis</i> NCTC7863 ^T	AB002524.1	LS483385.1	LS483385.1	GCA_900475505.1
<i>Streptococcus porcinus</i> NCTC10999 ^T	AB002523.1	LS483388.1	LS483388.1	GCA_900475415.1
<i>Streptococcus uberis</i> NCTC3858 ^T	AB002526.1	LS483397.1	LS483397.1	GCA_900475595.1
<i>Streptococcus lutetiensis</i> NCTC13774 ^T	AJ297215.1	LS483403.1	LS483403.1	GCA_900475675.1
<i>Streptococcus intermedius</i> NCTC11324 ^T	AF104671.1	LS483436.1	LS483436.1	GCA_900475975.1
<i>Streptococcus australis</i> NCTC13166 ^T	AF184974.1	LS483444.1	LS483444.1	GCA_900476055.1
<i>Streptococcus merionis</i> NCTC13788 ^T	AM396401.1	LT906439.1	LT906439.1	GCA_900187085.1
<i>Streptococcus bovimastitidis</i> NZ1587 ^T	LZDD01000001.1	LZDD01000002.1	LZDD01000003.1	GCA_001885095.1
<i>Streptococcus lactarius</i> CCUG 66490 ^T	GU045364.1	MRXX01000008.1	MRXX01000008.1	GCA_016642265.1
<i>Streptococcus cuniculi</i> CCUG 65085 ^T	MSJM01000016.1	MSJM01000007.1	MSJM01000007.1	GCA_001921845.1
<i>Streptococcus azizii</i> 12-5202 ^T	KM609118.1	MSPR01000015.1	MSPR01000015.1	GCA_001984715.1
<i>Streptococcus pseudopneumoniae</i> ATCC BAA-960 ^T	AY612844.1	MWSM01000042.1	MWSM01000062.1	GCA_002087075.1
<i>Streptococcus equi</i> subsp. <i>zooepidemicus</i> CCUG 23256 ^T	AB002516.1	NA	NA	NA
<i>Streptococcus alactolyticus</i> CCUG 27297 ^T	AF201899.1	NA	NA	NA
<i>Streptococcus ictaluri</i> DSM 21677 ^T	DQ462421.1	NA	NA	NA
<i>Streptococcus orisuis</i> DSM 18307 ^T	AB182324.1	NA	NA	NA
<i>Streptococcus dentirousetti</i> CCUG 55774 ^T	AB259061.1	NA	NA	NA
<i>Streptococcus dentapri</i> DSM 21999 ^T	AB469560.1	NA	NA	NA
<i>Streptococcus danieliae</i> DSM 22233 ^T	GQ456229.1	NA	NA	NA
<i>Streptococcus oralis</i> subsp. <i>tigurinus</i> AZ_3a ^T	JN004270.1	NA	NA	NA
<i>Streptococcus orisasini</i> DSM 25193 ^T	AB668377.1	NA	NA	NA
<i>Streptococcus dentasini</i> DSM 25137 ^T	AB668378.1	NA	NA	NA
<i>Streptococcus constellatus</i> subsp. <i>viborgensis</i> DSM 25819 ^T	JN787160.1	NA	NA	NA
<i>Streptococcus pluranimalium</i> DSM 15636 ^T	JX986968.1	NA	NA	NA
<i>Streptococcus oriloxodontae</i> DSM 27377 ^T	AB827327.1	NA	NA	NA
<i>Streptococcus tangierensis</i> DSM 105173 ^T	KF999656.1	NA	NA	NA
<i>Streptococcus cameli</i> DSM 105751 ^T	KF999657.1	NA	NA	NA

<i>Streptococcus rifensis</i> DSM 105174 ^T	KF999655.1	NA	NA	NA
<i>Streptococcus panodentis</i> DSM 29921 ^T	LC012889.1	NA	NA	NA
<i>Streptococcus dentiloxodontae</i> DSM 27381 ^T	AB828596.1	NA	NA	NA
<i>Streptococcus caviae</i> DSM 102819 ^T	LT546457.1	NA	NA	NA
<i>Streptococcus gallolyticus</i> subsp. <i>macedonicus</i> CCUG 39970 ^T	LC097080.1	PKIB01000009.1	PKIB01000009.1	GCA_002860805.1
<i>Streptococcus chosunense</i> ChDC B353 ^T	KF733679.1	RBCK01000002.1	RBCK01000002.1	GCA_003626515.1
<i>Streptococcus hillyeri</i> 28462 ^T	MH643904.1	RCVM01000014.1	RCVM01000005.1	GCA_003686955.1
<i>Streptococcus rubneri</i> DSM 26920 ^T	JX861483.1	SRRP01000002.1	SRRP01000002.1	GCA_004785935.1
<i>Streptococcus agalactiae</i> NCTC8181 ^T	AB002479.1	UAVB01000001.1	UAVB01000001.1	GCA_900458965.1
<i>Streptococcus acidominimus</i> NCTC12957 ^T	JX986969.1	UHEN01000001.1	UHEN01000001.1	GCA_900459045.1
<i>Streptococcus downei</i> NCTC11391 ^T	AJ420200.1	UHFA01000002.1	UHFA01000002.1	GCA_900459175.1
<i>Streptococcus constellatus</i> NCTC11325 ^T	AB355605.1	UHFC01000002.1	UHFC01000002.1	GCA_000474135.1
<i>Streptococcus dysgalactiae</i> subsp. <i>equisimilis</i> NCTC13762 ^T	DQ232540.1	UHFD01000002.1	UHFD01000002.1	GCA_900459095.1
<i>Streptococcus hyointestinalis</i> NCTC12224 ^T	AB002518.1	UHFN01000007.1	UHFN01000007.1	GCA_900459405.1
<i>Streptococcus massiliensis</i> NCTC13765 ^T	AY769997.1	UHFR01000005.1	UHFR01000005.1	GCA_900459365.1
<i>Streptococcus macacae</i> NCTC11558 ^T	AJ420199.1	UHFV01000002.1	UHFV01000002.1	GCA_900459485.1
<i>Streptococcus parasanguinis</i> NCTC12854 ^T	NR_024842.1	UHFZ01000003.1	UHFZ01000003.1	GCA_900459355.1
<i>Streptococcus pharyngis</i> CCUG 66496 ^T	VOHL01000012.1	VOHL01000008.1	VOHL01000004.1	GCA_007859195.1
<i>Streptococcus halichoeri</i> CCUG48324 ^T	AJ606046.1	WLZU01000001.1	WLZU01000002.1	GCA_009870755.1

^aGenomes downloaded from PATRIC server (1).

^bGenomes downloaded from JGI (2).

NA, sequences not available in public databases.

Table S3. Core genes used in the UBCG analysis.

Gene	COG ID	Function
<i>alaS</i>	COG0013	Alanine-tRNA ligase
<i>argS</i>	COG0018	Arginine-tRNA ligase
<i>aspS</i>	COG0173	Aspartate-tRNA ligase
<i>cgtA</i>	COG0536	GTPase ObgE/CgtA
<i>coaE</i>	COG0237	Dephospho-CoA kinase
<i>cysS</i>	COG0215	Cysteine-tRNA ligase
<i>dnaA</i>	COG0593	Chromosomal replication initiator protein DnaA
<i>dnaG</i>	COG0358	DNA primase
<i>dnaX</i>	COG2812	DNA polymerase III subunit gamma
<i>engA</i>	COG1160	GTPase Der
<i>ffh</i>	COG0541	Signal recognition particle protein
<i>fmt</i>	COG0223	Methionyl-tRNA formyltransferase
<i>frf</i>	COG0233	Ribosome-recycling factor
<i>ftsY</i>	COG0552	Signal recognition particle receptor FtsY
<i>gmK</i>	COG0194	Guanylate kinase
<i>hisS</i>	COG0124	Histidine-tRNA ligase
<i>ileS</i>	COG0060	Isoleucine-tRNA ligase 1
<i>infB</i>	COG0532	Translation initiation factor IF-2
<i>infC</i>	COG0290	Translation initiation factor IF-3
<i>ksgA</i>	COG0030	Ribosomal RNA small subunit methyltransferase A
<i>lepA</i>	COG0481	Elongation factor 4
<i>leuS</i>	COG0495	Leucine-tRNA ligase
<i>ligA</i>	COG0272	DNA ligase
<i>nusA</i>	COG0195	Transcription termination/antitermination protein NusA
<i>nusG</i>	COG0250	Transcription termination/antitermination protein NusG
<i>pgk</i>	COG0126	Phosphoglycerate kinase
<i>pheS</i>	COG0016	Phenylalanine-tRNA ligase alpha subunit
<i>pheT</i>	COG0073	Phenylalanine-tRNA ligase beta subunit
<i>prfA</i>	COG0216	Peptide chain release factor 1
<i>pyrG</i>	COG0504	CTP synthase
<i>recA</i>	COG0468	DNA recombination and repair protein
<i>rbfA</i>	COG0858	30S ribosome-binding factor
<i>rnc</i>	COG0571	Ribonuclease 3
<i>rplA</i>	COG0081	50S ribosomal protein L1
<i>rplB</i>	COG0090	50S ribosomal protein L2
<i>rplC</i>	COG0087	50S ribosomal protein L3
<i>rplD</i>	COG0088	50S ribosomal protein L4
<i>rplE</i>	COG0094	50S ribosomal protein L5
<i>rplF</i>	COG0097	50S ribosomal protein L6
<i>rplH</i>	COG0359	50S ribosomal protein L9
<i>rplJ</i>	COG0244	50S ribosomal protein L10
<i>rplK</i>	COG0080	50S ribosomal protein L11

<i>rplL</i>	COG0222	50S ribosomal protein L7/L12
<i>rplM</i>	COG0102	50S ribosomal protein L13
<i>rplN</i>	COG0093	50S ribosomal protein L14
<i>rplO</i>	COG0200	50S ribosomal protein L15
<i>rplP</i>	COG0197	50S ribosomal protein L16
<i>rplQ</i>	COG0203	50S ribosomal protein L17
<i>rplR</i>	COG0256	50S ribosomal protein L18
<i>rplS</i>	COG0335	50S ribosomal protein L19
<i>rplT</i>	COG0292	50S ribosomal protein L20
<i>rplU</i>	COG0261	50S ribosomal protein L21
<i>rplV</i>	COG0091	50S ribosomal protein L22
<i>rplW</i>	COG0089	50S ribosomal protein L23
<i>rplX</i>	COG0198	50S ribosomal protein L24
<i>rpmA</i>	COG0211	50S ribosomal protein L27
<i>rpmC</i>	COG0255	50S ribosomal protein L29
<i>rpmI</i>	COG0291	50S ribosomal protein L35
<i>rpoA</i>	COG0202	DNA-directed RNA polymerase subunit alpha
<i>rpoB</i>	COG0085	DNA-directed RNA polymerase subunit beta
<i>rpoC</i>	COG0086	DNA-directed RNA polymerase subunit beta'
<i>rpsB</i>	COG0052	30S ribosomal protein S2
<i>rpsC</i>	COG0092	30S ribosomal protein S3
<i>rpsD</i>	COG0522	30S ribosomal protein S4
<i>rpsE</i>	COG0098	30S ribosomal protein S5
<i>rpsF</i>	COG0360	30S ribosomal protein S6
<i>rpsG</i>	COG0049	30S ribosomal protein S7
<i>rpsH</i>	COG0096	30S ribosomal protein S8
<i>rpsI</i>	COG0103	30S ribosomal protein S9
<i>rpsJ</i>	COG0051	30S ribosomal protein S10
<i>rpsK</i>	COG0100	30S ribosomal protein S11
<i>rpsL</i>	COG0048	30S ribosomal protein S12
<i>rpsM</i>	COG0099	30S ribosomal protein S13
<i>rpsO</i>	COG0184	30S ribosomal protein S15
<i>rpsP</i>	COG0228	30S ribosomal protein S16
<i>rpsQ</i>	COG0186	30S ribosomal protein S17
<i>rpsR</i>	COG0238	30S ribosomal protein S18
<i>rpsS</i>	COG0185	30S ribosomal protein S19
<i>rpsT</i>	COG0268	30S ribosomal protein S20
<i>secA</i>	COG0653	Protein translocase subunit SecA
<i>secG</i>	COG1314	Protein-export membrane protein SecG
<i>secY</i>	COG0201	Protein translocase subunit SecY
<i>serS</i>	COG0172	Serine-tRNA ligase
<i>smpB</i>	COG0691	SsrA-binding protein
<i>tig</i>	COG0544	Trigger factor
<i>tilS</i>	COG0037	tRNA(Ile)-lysine synthase

<i>truB</i>	COG0130	tRNA pseudouridine synthase B
<i>tsaD</i>	COG0533	tRNA N6-adenosine threonylcarbamoyltransferase
<i>tsf</i>	COG0264	Elongation factor Ts
<i>uvrB</i>	COG0556	UvrABC system protein B
<i>ybeY</i>	COG0319	Endoribonuclease YbeY
<i>ychF</i>	COG0012	Ribosome-binding ATPase YchF

Table S4. *Streptococcus* genome sequences used in multigene-based phylogenomic treeing approach.

Species	GenBank accession number	Group
<i>Streptococcus porcorum</i> DSM28302 ^T	^a 2928214140	NA
<i>Streptococcus parasuis</i> DSM 29126 ^T	^a 2928335100	Suis
<i>Streptococcus mitis</i> NCTC 12261 ^T	GCA_000148585.3	Mitis
<i>Streptococcus parasanguinis</i> NCTC12854 ^T	GCA_000164675.2	Mitis
<i>Streptococcus infantis</i> ATCC 700779 ^T	GCA_000187465.1	Mitis
<i>Streptococcus peroris</i> ATCC 700780 ^T	GCA_000187585.1	Mitis
<i>Streptococcus macacae</i> NCTC 11558 ^T	GCA_000187995.3	Mutans
<i>Streptococcus ictaluri</i> DSM 21677 ^T	GCA_000188015.3	Pyogenic
<i>Streptococcus vestibularis</i> ATCC 49124 ^T	GCA_000188295.1	Salivarius
<i>Streptococcus constellatus</i> subsp. <i>pharyngis</i> SK1060 ^T	GCA_000223295.2	Gordonii
<i>Streptococcus ratti</i> FA-1 ^T	GCA_000286075.1	Mutans
<i>Streptococcus suis</i> S735 ^T	GCA_000294495.1	Suis
<i>Streptococcus oralis</i> subsp. <i>tigurinus</i> AZ_3a ^T	GCA_000344275.1	Mitis
<i>Streptococcus minor</i> DSM 17118 ^T	GCA_000377005.1	Suis
<i>Streptococcus ovis</i> DSM 16829 ^T	GCA_000380125.1	Suis
<i>Streptococcus thoralensis</i> DSM 12221 ^T	GCA_000380145.1	Pluranimalium
<i>Streptococcus oralis</i> subsp. <i>dentisani</i> CECT 7747 ^T	GCA_000382825.1	Mitis
<i>Streptococcus hyovaginalis</i> DSM 12219 ^T	GCA_000420785.1	Pluranimalium
<i>Streptococcus devriesei</i> DSM 19639 ^T	GCA_000423725.1	Mutans
<i>Streptococcus castoreus</i> DSM 17536 ^T	GCA_000425025.1	Pyogenic
<i>Streptococcus equi</i> subsp. <i>ruminatorum</i> CECT 5772 ^T	GCA_000706805.1	Pyogenic
<i>Streptococcus sinensis</i> HKU4 ^T	GCA_000767835.1	Gordonii
<i>Streptococcus phocae</i> subsp. <i>salmonis</i> C-4 ^T	GCA_000772915.1	Pyogenic
<i>Streptococcus uberis</i> NCTC3858 ^T	GCA_000785845.1	Pyogenic
<i>Streptococcus phocae</i> subsp. <i>phocae</i> ATCC 51973 ^T	GCA_001302265.1	Pyogenic
<i>Streptococcus pneumoniae</i> DSM 20566 ^T	GCA_001457635.1	Mitis

<i>Streptococcus iniae</i> QMA0248 ^T	GCA_001595425.1	Pyogenic
<i>Streptococcus gallolyticus</i> subsp. <i>gallolyticus</i> DSM 16831 ^T	GCA_002000985.1	Bovis
<i>Streptococcus pyogenes</i> DSM 20565 ^T	GCA_002055535.1	Pyogenic
<i>Streptococcus pseudopneumoniae</i> ATCC BAA-960 ^T	GCA_002087075.1	Mitis
<i>Streptococcus pluranimalium</i> TH11417	GCA_002953735.1	Pluranimalium
<i>Streptococcus ruminantium</i> GUT187 ^T	GCA_003609975.1	Suis
<i>Streptococcus halichoeri</i> CCUG 48324 ^T	GCA_009870755.1	Pyogenic
<i>Streptococcus oriscaviae</i> HKU75 ^T	GCA_018137985.1	Suis
<i>Lactococcus lactis</i> ATCC 19435 ^T	GCA_900099625.1	Outgroup
<i>Streptococcus equi</i> subsp. <i>equi</i> NCTC9682 ^T	GCA_900156215.1	Pyogenic
<i>Streptococcus agalactiae</i> NCTC 8181 ^T	GCA_900458965.1	Pyogenic
<i>Streptococcus acidominimus</i> NCTC 12957 ^T	GCA_900459045.1	Suis
<i>Streptococcus dysgalactiae</i> subsp. <i>equisimilis</i> NCTC 13762 ^T	GCA_900459095.1	Pyogenic
<i>Streptococcus constellatus</i> subsp. <i>constellatus</i> NCTC 11325 ^T	GCA_900459125.1	Gordonii
<i>Streptococcus downei</i> NCTC 11391 ^T	GCA_900459175.1	Sobrinus
<i>Streptococcus dysgalactiae</i> subsp. <i>dysgalactiae</i> NCTC 13731 ^T	GCA_900459225.1	Pyogenic
<i>Streptococcus massiliensis</i> NCTC 13765 ^T	GCA_900459365.1	Gordonii
<i>Streptococcus infantarius</i> NCTC 13760 ^T	GCA_900459445.1	Bovis
<i>Streptococcus equi</i> subsp. <i>zooepidemicus</i> NCTC 4676 ^T	GCA_900459475.1	Pyogenic
<i>Streptococcus gallolyticus</i> subsp. <i>macedonicus</i> NCTC 13767 ^T	GCA_900459545.1	Bovis
<i>Streptococcus thermophilus</i> NCTC 12958 ^T	GCA_900474985.1	Salivarius
<i>Streptococcus gordonii</i> NCTC 7865 ^T	GCA_900475015.1	Gordonii
<i>Streptococcus ferus</i> DSM 20646 ^T	GCA_900475025.1	Mutans
<i>Streptococcus mutans</i> FDAARGOS 1458 ^T	GCA_900475095.1	Mutans
<i>Streptococcus sobrinus</i> NCTC 12279 ^T	GCA_900475395.1	Sobrinus
<i>Streptococcus porcinus</i> NCTC 10999 ^T	GCA_900475415.1	Pyogenic
<i>Streptococcus cristatus</i> NCTC 12479 ^T	GCA_900475445.1	Gordonii
<i>Streptococcus sanguinis</i> NCTC 7863 ^T	GCA_900475505.1	Gordonii

<i>Streptococcus lutetiensis</i> NCTC 13774 ^T	GCA_900475675.1	Bovis
<i>Streptococcus intermedius</i> NCTC 11324 ^T	GCA_900475975.1	Gordonii
<i>Streptococcus australis</i> NCTC 13166 ^T	GCA_900476055.1	Mitis
<i>Streptococcus gallolyticus</i> subsp. <i>pasteurianus</i> NCTC13784 ^T	GCA_900478025.1	Bovis
<i>Streptococcus salivarius</i> NCTC 8618 ^T	GCA_900636435.1	Salivarius
<i>Streptococcus anginosus</i> subsp. <i>anginosus</i> NCTC 10713 ^T	GCA_900636475.1	Gordonii
<i>Streptococcus urinalis</i> NCTC 13766 ^T	GCA_900636885.1	Pyogenic
<i>Streptococcus oralis</i> subsp. <i>oralis</i> NCTC 11427 ^T	GCA_900637025.1	Mitis
<i>Streptococcus pseudoporcinus</i> NCTC 13786 ^T	GCA_900637075.1	Pyogenic

^aGenomes downloaded from JGI (2).

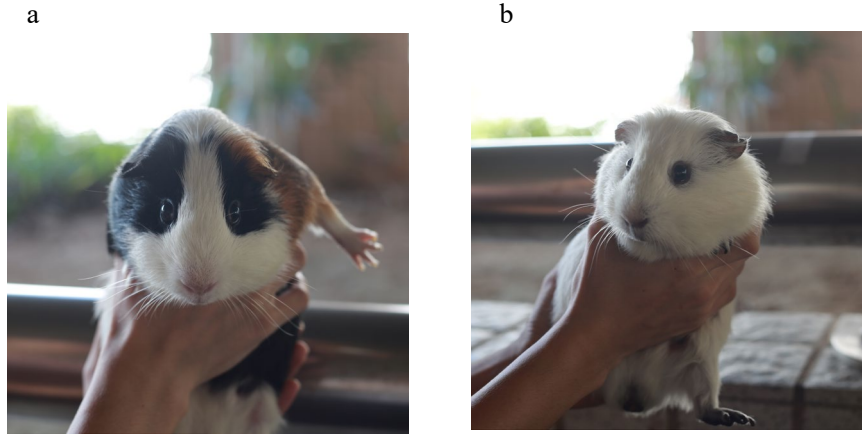


Fig. S1. The two guinea pigs purchased from a local pet store; (a) GP1 and (b) GP2.

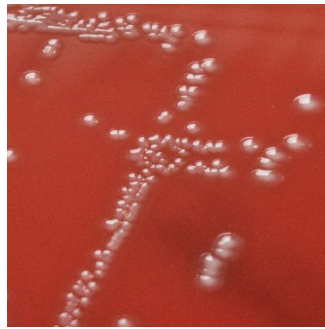


Fig. S2. Colony morphology of HKU75^T. Growth on sheep blood agar after 24 h of incubation at 37°C with 5% CO₂.

References

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2. Nordberg H, Cantor M, Dusheyko S, Hua S, Poliakov A, Shabalov I, Smirnova T, Grigoriev IV, Dubchak I. 2014. The genome portal of the Department of Energy Joint Genome Institute: 2014 updates. *Nucleic Acids Res* 42:D26-31.