

Table S4a. Polymorphisms newly discovered in 269 genome fragments from 73 *S. aureus* isolates

Polymorphism	Quality	Ancestral	Derived	Position in N315 genome	ORF
ST225_au207-1	non-synonymous	G	A	263406	SA0220
ST225_au207-2	non-synonymous	A	G	263113	SA0220
ST225_au210-1	synonymous	A	G	369667	SA0311
ST225_au220-1	non-synonymous	G	A	631889	SA0537
ST225_au238-1	non-synonymous	G	A	2263605	SA1991
ST225_au247-1	non-synonymous	A	G	419087	SA0361
ST225_au248-1	non-synonymous	A	T	622391	SA0527
ST225_au261-1	synonymous	C	T	1824296	SA1585
ST225_au269-1	non-synonymous	G	A	2517195	SA2240
ST225_au291-1	non-synonymous	G	T	1001705	SA0881
ST225_au297-1	non-synonymous	A	T	1504686	SA1298
ST225_au312-1	synonymous	G	A	208745	SA0178
ST225_au313-1	non-synonymous	C	A	271206	SA0225
ST225_au319-1	non-synonymous	A	G	402572	SA0344
ST225_au320-1	synonymous	G	A	407135	SA0347
ST225_au323-1	non-synonymous	G	A	480034	SA0418
ST225_au326-1	non-synonymous	A	G	627571	SA0533
ST225_au329-1	synonymous	T	C	753556	SA0658
ST225_au345-1	non-synonymous	T	C	1351084	SA1184
ST225_au345-2	non-synonymous	A	G	1351210	SA1184
ST225_au346-1	non-synonymous	C	T	1370037	SA1197
ST225_au349-1	non-synonymous	A	T	1506401	SA1299
ST225_au352-1	synonymous	T	C	1517048	SA1310
ST225_au354-1	synonymous	C	T	1555901	SA1346
ST225_au359-1	non-synonymous	A	G	1564858	SA1354
ST225_au360-1	synonymous	A	G	1576528	SA1367
ST225_au362-1	non-synonymous	C	T	1631030	SA1427
ST225_au367-1	non-synonymous	G	A	1719763	SA1510
ST225_au367-2	non-synonymous	T	C	1719985	SA1510
ST225_au378-1	non-synonymous	G	A	1779511	SA1548
ST225_au385-1	synonymous	C	T	1884695	SA1650

ST225_au013-1	intergenic	C	T	605040	none
ST225_au018-1	intergenic	C	G	1127102	none
ST225_au018-2	intergenic	C	T	1127250	none
ST225_au018-3	intergenic	T	G	1127326	none
ST225_au023-1	intergenic	T	C	1470071	none
ST225_au025-1	non-synonymous	G	A	1508046	SA1302
ST225_au038-1	intergenic	T	C	2563753	none
ST225_au046-1	intergenic	C	T	274971	none
ST225_au050-1	synonymous	T	C	521443	SA0449
ST225_au080-1	non-synonymous	T	C	249620	SA0210
ST225_au085-1	non-synonymous	C	A	515464	SA0442
ST225_au097-1	non-synonymous	C	T	1061339	SA0935
ST225_au131-1	intergenic	G	T	91487	none
ST225_au131-2	intergenic	C	A	91452	none
ST225_au131-3	intergenic	A	G	91465	none
ST225_au133-1	synonymous	T	A	378156	SA0321
ST225_au135-1	synonymous	A	G	1393583	SA1220

Indels.

ST225_au102-1	insertion (1 nt)	-	A	1367331	SA1195
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Table S4b. Sequence differences between ST225 and N315 (on branch ST5-K)

Polymorphism	Quality	Ancestral	Derived	Position in N315 genome	ORF	
ST225_au210-1	synonymous	G	A	369667	SA0311	
ST225_au004-1	intergenic	G	C	95177	none	
ST225_au008-1	intergenic	G	A	412719	none	
ST225_au018-4	intergenic	T	G	1127179	none	
ST225_au022-1	intergenic	G	A	1433941	none	
ST225_au033-1	intergenic	T	A	2080266	none	
ST225_au039-1	intergenic	T	A	2700440	none	
ST225_au050-2	synonymous	A	G	521614	SA0449	
ST225_au068-1	synonymous	T	C	2099406	SA1859	
ST225_au116-1	non-synonymous	T	G	2171885	SA1923	
au228-1	non-synonymous	T	C	1264963	SA1115	ascertained previously (PNAS 105: 14130)