

Supplementary Information

## Developing a Genotyping Scheme for *Mycobacterium abscessus* Complex Using Whole Genome Sequencing Data

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**S**upplementary Information  
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## 1 Appendix

### 2 Appendix 1: Original genomes used for development (subset 1)

Accession Number	Attribute
ATCC19977	<i>M. abscessus</i> reference genome
CCUG50184	<i>M. bolletii</i> reference genome
CCUG48898	<i>M. massiliense</i> reference genome
ERR1787883	Query genome
SRR5483259	Query genome
SRR6388673	Query genome
SRR6388716	Query genome
SRR5483260	Query genome
SRR3617065	Query genome
SRR3321827	Query genome
SRR3321816	Query genome
SRR3321822	Query genome
SRR6388693	Query genome
SRR3321825	Query genome
ERR1869540	Query genome

ERR1869531	Query genome
ERR1413189	Query genome
SRR3617071	Query genome
CP009407	Query genome

4 *Appendix 2. Query Genomes of Subset 2.*

5 Accessed from: <https://trace.ncbi.nlm.nih.gov/Traces/sra/?study=SRP127025>

SRR6388672	SRR6388709	SRR6388750
SRR6388674	SRR6388710	SRR6388751
SRR6388675	SRR6388717	SRR6388753
SRR6388677	SRR6388721	SRR6388754
SRR6388679	SRR6388722	SRR6388757
SRR6388680	SRR6388725	SRR6388758
SRR6388681	SRR6388726	SRR6388759
SRR6388685	SRR6388727	SRR6388761
SRR6388687	SRR6388728	SRR6388763
SRR6388689	SRR6388731	SRR6388768
SRR6388690	SRR6388734	SRR6388769
SRR6388693	SRR6388735	SRR6388773
SRR6388696	SRR6388736	SRR6388775
SRR6388697	SRR6388737	
SRR6388698	SRR6388738	
SRR6388699	SRR6388739	

SRR6388700	SRR6388740
SRR6388701	SRR6388741
SRR6388702	SRR6388742
SRR6388705	SRR6388746
SRR6388708	SRR6388747

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7 *Appendix 3. Query Genomes of Subset 3.*

8 Accessed from: <https://www.ebi.ac.uk/ena/data/view/PRJEB2779>

ERR516499	ERR971021
ERR572848	ERR971022
ERR754986	ERR971023
ERR754988	ERR971024
ERR754989	ERR971025
ERR754990	ERR971026
ERR754992	ERR971027
ERR754993	ERR971028
ERR908844	ERR971029
ERR908845	
ERR908846	
ERR908847	
ERR908849	
ERR956269	
ERR956270	
ERR956271	

ERR956272	
ERR956276	
ERR956277	
ERR971019	
ERR971020	

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11 *Appendix 4. Similarity Matrices Produced from MegAlign (DNASTAR):*

12 *argH:*

		Percent Identity													
		1	2	3	4	5	6	7	8	9	10	11	12		
Divergence	<b>1</b>	█	99.0	98.4	99.8	98.4	99.8	99.6	96.3	95.3	95.3	98.8	99.0	<b>1</b>	argH_1
	<b>2</b>	1.0	█	98.6	98.8	99.0	98.8	99.4	96.9	95.9	95.9	99.0	99.6	<b>2</b>	argH_2
	<b>3</b>	1.6	1.4	█	98.2	98.8	98.2	98.8	96.7	95.7	95.7	99.2	98.6	<b>3</b>	argH_3
	<b>4</b>	0.2	1.2	1.8	█	98.2	99.6	99.4	96.1	95.1	95.1	98.6	98.8	<b>4</b>	argH_4
	<b>5</b>	1.6	1.0	1.2	1.8	█	98.2	98.8	97.4	96.5	96.5	99.6	99.0	<b>5</b>	argH_5
	<b>6</b>	0.2	1.2	1.8	0.4	1.8	█	99.4	96.1	95.1	95.1	98.6	98.8	<b>6</b>	argH_6
	<b>7</b>	0.4	0.6	1.2	0.6	1.2	0.6	█	96.7	95.7	95.7	99.2	99.4	<b>7</b>	argH_7
	<b>8</b>	3.8	3.2	3.4	4.0	2.6	4.0	3.4	█	97.2	97.2	97.4	96.9	<b>8</b>	argH_8
	<b>9</b>	4.9	4.3	4.5	5.1	3.6	5.1	4.5	2.8	█	99.6	96.5	95.9	<b>9</b>	argH_9
	<b>10</b>	4.9	4.3	4.5	5.1	3.6	5.1	4.5	2.8	0.4	█	96.5	95.9	<b>10</b>	argH_10
	<b>11</b>	1.2	1.0	0.8	1.4	0.4	1.4	0.8	2.6	3.6	3.6	█	99.0	<b>11</b>	argH_11
	<b>12</b>	1.0	0.4	1.4	1.2	1.0	1.2	0.6	3.2	4.3	4.3	1.0	█	<b>12</b>	argH_12
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>			

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15 *arr:*

		Percent Identity																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Divergence	<b>1</b>	█	97.2	98.1	98.8	99.8	99.1	97.9	99.5	97.4	98.8	98.6	99.3	98.6	99.3	97.4	97.4	97.7	99.1	97.9	98.4	<b>1</b>	arr_1
	<b>2</b>	2.9	█	96.7	97.2	97.4	96.9	99.3	97.2	99.8	96.9	97.2	97.2	96.9	97.7	99.3	99.3	99.5	96.9	98.4	96.9	<b>2</b>	arr_2
	<b>3</b>	1.9	3.4	█	97.9	98.4	97.7	97.4	98.1	96.9	99.3	99.5	97.9	99.3	98.4	96.9	96.9	97.2	97.7	98.4	99.3	<b>3</b>	arr_3
	<b>4</b>	1.2	2.9	2.1	█	99.1	99.8	97.9	98.8	97.4	98.1	98.4	99.5	98.4	99.5	97.4	97.4	97.7	99.3	97.9	98.1	<b>4</b>	arr_4
	<b>5</b>	0.2	2.6	1.7	0.9	█	99.3	98.1	99.8	97.7	99.1	98.8	99.5	98.8	99.5	97.7	97.7	97.9	99.3	98.1	98.6	<b>5</b>	arr_5
	<b>6</b>	0.9	3.1	2.4	0.2	0.7	█	97.7	99.1	97.2	98.4	98.1	99.8	98.1	99.3	97.2	97.2	97.4	99.5	97.7	97.9	<b>6</b>	arr_6
	<b>7</b>	2.1	0.7	2.6	2.1	1.9	2.4	█	97.9	99.5	97.7	97.9	97.9	97.7	98.4	99.5	99.5	99.8	97.7	99.1	97.7	<b>7</b>	arr_7
	<b>8</b>	0.5	2.9	1.9	1.2	0.2	0.9	2.1	█	97.4	98.8	98.6	99.3	98.6	99.3	97.4	97.4	97.7	99.1	97.9	98.4	<b>8</b>	arr_8
	<b>9</b>	2.6	0.2	3.1	2.6	2.4	2.9	0.5	2.6	█	97.2	97.4	97.4	97.2	97.9	99.5	99.5	99.8	97.2	98.6	97.2	<b>9</b>	arr_9
	<b>10</b>	1.2	3.1	0.7	1.9	0.9	1.7	2.4	1.2	2.9	█	99.8	98.6	99.5	98.6	97.2	97.2	97.4	98.4	98.6	99.5	<b>10</b>	arr_10
	<b>11</b>	1.4	2.9	0.5	1.7	1.2	1.9	2.1	1.4	2.6	0.2	█	98.4	99.8	98.8	97.4	97.4	97.7	98.1	98.8	99.8	<b>11</b>	arr_11
	<b>12</b>	0.7	2.9	2.1	0.5	0.5	0.2	2.1	0.7	2.6	1.4	1.7	█	98.4	99.5	97.4	97.4	97.7	99.8	97.9	98.1	<b>12</b>	arr_12
	<b>13</b>	1.4	3.1	0.7	1.7	1.2	1.9	2.4	1.4	2.9	0.5	0.2	1.7	█	98.8	97.2	97.2	97.4	98.1	98.6	99.5	<b>13</b>	arr_13
	<b>14</b>	0.7	2.4	1.7	0.5	0.5	0.7	1.7	0.7	2.1	1.4	1.2	0.5	1.2	█	97.9	97.9	98.1	99.3	98.4	98.6	<b>14</b>	arr_14
	<b>15</b>	2.6	0.7	3.1	2.6	2.4	2.9	0.5	2.6	0.5	2.9	2.6	2.6	2.9	2.1	█	99.5	99.8	97.2	98.6	97.2	<b>15</b>	arr_15
	<b>16</b>	2.6	0.7	3.1	2.6	2.4	2.9	0.5	2.6	0.5	2.9	2.6	2.6	2.9	2.1	0.5	█	99.8	97.2	98.6	97.2	<b>16</b>	arr_16
	<b>17</b>	2.4	0.5	2.9	2.4	2.1	2.6	0.2	2.4	0.2	2.6	2.4	2.4	2.6	1.9	0.2	0.2	█	97.4	98.8	97.4	<b>17</b>	arr_17
	<b>18</b>	0.7	2.9	2.1	0.5	0.5	0.2	2.1	0.7	2.6	1.4	1.7	0.0	1.7	0.5	2.6	2.6	2.4	█	97.7	97.9	<b>18</b>	arr_18
	<b>19</b>	2.1	1.7	1.7	2.1	1.9	2.4	0.9	2.1	1.4	1.4	1.2	2.1	1.4	1.7	1.4	1.4	1.2	2.1	█	98.6	<b>19</b>	arr_19
	<b>20</b>	1.7	3.1	0.7	1.9	1.4	2.1	2.4	1.7	2.9	0.5	0.2	1.9	0.5	1.4	2.9	2.9	2.6	1.9	1.4	█	<b>20</b>	arr_20
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>			

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20 *cya:*

		Percent Identity															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Divergence	<b>1</b>	█	99.8	99.6	99.6	97.4	98.1	97.8	98.0	97.8	98.7	97.6	97.6	99.6	98.1	<b>1</b>	cya_1
	<b>2</b>	0.2	█	99.8	99.8	97.2	98.0	97.6	97.8	98.0	98.9	97.4	97.4	99.8	98.3	<b>2</b>	cya_2
	<b>3</b>	0.4	0.2	█	99.6	97.0	97.8	97.4	97.6	97.8	98.7	97.2	97.2	99.6	98.1	<b>3</b>	cya_3
	<b>4</b>	0.4	0.2	0.4	█	97.0	97.8	97.4	97.6	97.8	98.7	97.2	97.2	99.6	98.1	<b>4</b>	cya_4
	<b>5</b>	2.6	2.8	3.0	3.0	█	99.3	98.9	99.4	97.0	97.2	99.1	99.8	97.4	97.4	<b>5</b>	cya_5
	<b>6</b>	1.9	2.1	2.3	2.3	0.7	█	99.6	99.4	97.0	97.2	99.1	99.4	97.8	97.4	<b>6</b>	cya_6
	<b>7</b>	2.3	2.5	2.6	2.6	1.1	0.4	█	99.1	96.7	96.9	99.4	99.1	97.4	97.0	<b>7</b>	cya_7
	<b>8</b>	2.1	2.3	2.5	2.5	0.6	0.6	0.9	█	97.6	97.8	99.6	99.6	98.0	98.0	<b>8</b>	cya_8
	<b>9</b>	2.3	2.1	2.3	2.3	3.0	3.0	3.4	2.5	█	99.1	97.2	97.2	98.2	99.6	<b>9</b>	cya_9
	<b>10</b>	1.3	1.1	1.3	1.3	2.8	2.8	3.2	2.3	0.9	█	97.4	97.4	99.1	99.4	<b>10</b>	cya_10
	<b>11</b>	2.5	2.7	2.8	2.8	0.9	0.9	0.6	0.4	2.8	2.6	█	99.3	97.6	97.6	<b>11</b>	cya_11
	<b>12</b>	2.5	2.6	2.8	2.8	0.2	0.6	0.9	0.4	2.8	2.6	0.7	█	97.6	97.6	<b>12</b>	cya_12
	<b>13</b>	0.4	0.2	0.4	0.4	2.6	2.3	2.6	2.1	1.9	0.9	2.5	2.5	█	98.5	<b>13</b>	cya_13
	<b>14</b>	1.9	1.7	1.9	1.9	2.6	2.6	3.0	2.1	0.4	0.6	2.5	2.5	1.5	█	<b>14</b>	cya_14
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>			

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23 *gnd:*

		Percent Identity																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Divergence	<b>1</b>	█	99.6	99.8	99.6	98.2	99.6	99.6	99.8	98.0	96.2	96.2	96.2	98.0	97.8	99.8	96.4	96.0	98.2	95.8	<b>1</b>	gnd_1
	<b>2</b>	0.4	█	99.8	99.2	97.8	99.2	99.6	99.4	97.6	95.8	95.8	95.8	97.6	97.4	99.4	96.0	95.6	97.8	95.4	<b>2</b>	gnd_2
	<b>3</b>	0.2	0.2	█	99.4	98.0	99.4	99.8	99.6	97.8	96.0	96.0	96.0	97.8	97.6	99.6	96.2	95.8	98.0	95.6	<b>3</b>	gnd_3
	<b>4</b>	0.4	0.8	0.6	█	97.8	99.2	99.2	99.4	97.6	95.8	95.8	95.8	97.6	97.4	99.4	96.0	95.6	97.8	95.4	<b>4</b>	gnd_4
	<b>5</b>	1.8	2.2	2.0	2.2	█	98.6	97.8	98.0	96.4	94.6	94.6	94.6	96.4	96.2	98.0	94.8	94.4	96.6	94.2	<b>5</b>	gnd_5
	<b>6</b>	0.4	0.8	0.6	0.8	1.4	█	99.2	99.4	97.6	95.8	95.8	95.8	97.6	97.4	99.4	96.0	95.6	97.8	95.4	<b>6</b>	gnd_6
	<b>7</b>	0.4	0.4	0.2	0.8	2.2	0.8	█	99.4	97.6	95.8	95.8	95.8	97.6	97.4	99.4	96.0	95.6	97.8	95.4	<b>7</b>	gnd_7
	<b>8</b>	0.2	0.6	0.4	0.6	2.0	0.6	0.6	█	97.8	96.0	96.0	96.0	97.8	97.6	99.6	96.2	95.8	98.0	95.6	<b>8</b>	gnd_8
	<b>9</b>	2.0	2.4	2.2	2.4	3.7	2.4	2.4	2.2	█	97.0	97.0	97.0	99.6	99.4	97.8	97.2	96.8	99.8	96.6	<b>9</b>	gnd_9
	<b>10</b>	3.9	4.3	4.1	4.3	5.6	4.3	4.3	4.1	3.1	█	99.2	99.6	97.0	96.8	96.0	99.8	99.4	97.2	99.2	<b>10</b>	gnd_10
	<b>11</b>	3.9	4.3	4.1	4.3	5.6	4.3	4.3	4.1	3.1	0.8	█	99.2	97.0	96.8	96.0	99.4	99.8	97.2	99.6	<b>11</b>	gnd_11
	<b>12</b>	3.9	4.3	4.1	4.3	5.6	4.3	4.3	4.1	3.1	0.4	0.8	█	97.0	96.8	96.0	99.8	99.4	97.2	99.2	<b>12</b>	gnd_12
	<b>13</b>	2.0	2.4	2.2	2.4	3.7	2.4	2.4	2.2	0.4	3.1	3.1	3.1	█	99.4	97.8	97.2	96.8	99.8	96.6	<b>13</b>	gnd_13
	<b>14</b>	2.2	2.6	2.4	2.6	3.9	2.6	2.6	2.4	0.6	3.3	3.3	3.3	0.6	█	97.6	97.0	96.6	99.6	96.4	<b>14</b>	gnd_14
	<b>15</b>	0.2	0.6	0.4	0.6	2.0	0.6	0.6	0.4	2.2	4.1	4.1	4.1	2.2	2.4	█	96.2	95.8	98.0	95.6	<b>15</b>	gnd_15
	<b>16</b>	3.7	4.1	3.9	4.1	5.4	4.1	4.1	3.9	2.9	0.2	0.6	0.2	2.9	3.1	3.9	█	99.6	97.4	99.4	<b>16</b>	gnd_16
	<b>17</b>	4.1	4.5	4.3	4.6	5.8	4.6	4.5	4.3	3.3	0.6	0.2	0.6	3.3	3.5	4.3	0.4	█	97.0	99.8	<b>17</b>	gnd_17
	<b>18</b>	1.8	2.2	2.0	2.2	3.5	2.2	2.2	2.0	0.2	2.8	2.9	2.8	0.2	0.4	2.0	2.6	3.1	█	96.8	<b>18</b>	gnd_18
	<b>19</b>	4.3	4.8	4.5	4.8	6.1	4.8	4.8	4.6	3.5	0.8	0.4	0.8	3.5	3.7	4.6	0.6	0.2	3.3	█	<b>19</b>	gnd_19
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>			

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		Percent Identity																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Divergence	<b>1</b>	█	98.5	99.0	98.3	99.4	98.6	98.4	99.2	99.1	98.3	98.7	98.7	99.2	98.6	99.1	98.9	98.4	99.1	99.0	98.3	99.0	98.4	98.4	98.7	<b>1</b>	<i>gyrA_1</i>
	<b>2</b>	1.5	█	98.3	98.4	98.7	100.0	98.5	98.2	98.5	98.5	99.0	99.5	98.7	98.9	98.1	98.8	98.4	98.3	98.4	98.5	98.3	98.5	98.3	99.4	<b>2</b>	<i>gyrA_2</i>
	<b>3</b>	1.0	1.7	█	98.5	98.9	98.4	98.5	99.4	99.1	98.5	98.5	98.5	99.3	98.4	99.6	99.0	98.5	99.6	99.1	98.5	100.0	98.5	98.5	98.6	<b>3</b>	<i>gyrA_3</i>
	<b>4</b>	1.7	1.7	1.6	█	98.5	98.4	99.5	98.4	98.4	99.4	98.3	98.5	98.4	98.3	98.4	98.7	99.5	98.5	98.7	99.4	98.4	99.5	99.5	98.5	<b>4</b>	<i>gyrA_4</i>
	<b>5</b>	0.6	1.4	1.1	1.6	█	98.7	98.5	99.0	99.6	98.5	98.7	98.9	99.1	98.6	99.0	99.3	98.5	99.0	99.1	98.5	98.9	98.5	98.4	98.7	<b>5</b>	<i>gyrA_5</i>
	<b>6</b>	1.4	0.0	1.6	1.6	1.3	█	98.5	98.3	98.5	98.5	99.0	99.6	98.7	99.0	98.2	98.8	98.4	98.4	98.4	98.5	98.3	98.6	98.4	99.4	<b>6</b>	<i>gyrA_6</i>
	<b>7</b>	1.6	1.5	1.5	0.5	1.5	1.5	█	98.5	98.4	99.7	98.4	98.5	98.4	98.5	98.5	98.7	99.8	98.6	98.9	99.8	98.5	99.8	99.8	98.6	<b>7</b>	<i>gyrA_7</i>
	<b>8</b>	0.8	1.8	0.6	1.6	1.0	1.8	1.6	█	99.2	98.4	98.5	98.4	99.2	98.4	99.7	99.0	98.5	99.5	99.2	98.4	99.4	98.5	98.5	98.5	<b>8</b>	<i>gyrA_8</i>
	<b>9</b>	0.9	1.6	0.9	1.6	0.4	1.6	1.6	0.8	█	98.4	98.4	98.7	98.9	98.3	99.1	99.1	98.4	99.2	98.9	98.4	99.0	98.5	98.3	98.5	<b>9</b>	<i>gyrA_9</i>
	<b>10</b>	1.7	1.6	1.6	0.6	1.6	1.5	0.3	1.6	1.6	█	98.4	98.5	98.4	98.4	98.4	98.7	99.7	98.5	98.9	99.8	98.4	99.9	99.6	98.5	<b>10</b>	<i>gyrA_10</i>
	<b>11</b>	1.3	1.0	1.5	1.7	1.4	1.0	1.6	1.6	1.6	1.7	█	99.4	98.7	99.9	98.4	98.7	98.4	98.5	98.3	98.4	98.5	98.5	98.3	99.3	<b>11</b>	<i>gyrA_11</i>
	<b>12</b>	1.3	0.5	1.5	1.6	1.1	0.4	1.5	1.6	1.4	1.6	0.6	█	98.8	99.3	98.3	98.9	98.4	98.5	98.5	98.5	98.5	98.5	98.3	99.4	<b>12</b>	<i>gyrA_12</i>
	<b>13</b>	0.8	1.4	0.7	1.6	0.9	1.3	1.6	0.8	1.1	1.6	1.3	1.2	█	98.7	99.2	98.9	98.5	99.3	98.9	98.4	99.3	98.5	98.4	98.9	<b>13</b>	<i>gyrA_13</i>
	<b>14</b>	1.4	1.1	1.6	1.7	1.4	1.0	1.6	1.6	1.7	1.6	0.1	0.7	1.3	█	98.3	98.6	98.4	98.4	98.2	98.4	98.3	98.5	98.4	99.2	<b>14</b>	<i>gyrA_14</i>
	<b>15</b>	0.9	1.9	0.4	1.6	1.0	1.9	1.6	0.3	0.9	1.6	1.6	1.7	0.8	1.8	█	99.0	98.5	99.6	99.2	98.4	99.6	98.5	98.5	98.4	<b>15</b>	<i>gyrA_15</i>
	<b>16</b>	1.1	1.2	1.0	1.4	0.7	1.2	1.3	1.0	0.9	1.4	1.3	1.1	1.1	1.4	1.0	█	98.7	99.1	99.1	98.7	99.0	98.7	98.6	98.8	<b>16</b>	<i>gyrA_16</i>
	<b>17</b>	1.6	1.7	1.5	0.5	1.6	1.6	0.2	1.5	1.6	0.3	1.7	1.7	1.6	1.6	1.5	1.4	█	98.6	98.9	99.6	98.5	99.7	100.0	98.5	<b>17</b>	<i>gyrA_17</i>
	<b>18</b>	0.9	1.7	0.4	1.5	1.0	1.7	1.4	0.5	0.8	1.5	1.5	1.5	0.7	1.7	0.4	0.9	1.4	█	99.3	98.5	99.6	98.6	98.6	98.6	<b>18</b>	<i>gyrA_18</i>
	<b>19</b>	1.0	1.6	0.9	1.3	0.9	1.6	1.1	0.8	1.1	1.1	1.7	1.6	1.1	1.9	0.8	0.9	1.1	0.7	█	98.9	99.0	99.0	98.8	98.5	<b>19</b>	<i>gyrA_19</i>
	<b>20</b>	1.7	1.6	1.6	0.6	1.6	1.5	0.2	1.6	1.6	0.2	1.7	1.6	1.6	1.6	1.6	1.4	0.4	1.5	1.1	█	98.4	99.9	99.6	98.5	<b>20</b>	<i>gyrA_20</i>
	<b>21</b>	1.0	1.7	0.0	1.6	1.1	1.7	1.6	0.6	1.0	1.6	1.6	1.6	0.7	1.7	0.4	1.0	1.5	0.4	1.0	1.6	█	98.5	98.5	98.5	<b>21</b>	<i>gyrA_21</i>
	<b>22</b>	1.6	1.5	1.5	0.5	1.5	1.4	0.2	1.5	1.6	0.1	1.6	1.5	1.6	1.5	1.5	1.3	0.3	1.4	1.0	0.1	1.5	█	99.6	98.6	<b>22</b>	<i>gyrA_22</i>
	<b>23</b>	1.6	1.7	1.5	0.5	1.6	1.7	0.2	1.6	1.7	0.4	1.7	1.7	1.6	1.7	1.6	1.4	0.0	1.4	1.2	0.4	1.6	0.4	█	98.5	<b>23</b>	<i>gyrA_23</i>
	<b>24</b>	1.3	0.6	1.4	1.6	1.3	0.6	1.4	1.6	1.5	1.5	0.7	0.6	1.1	0.8	1.6	1.2	1.5	1.4	1.5	1.5	1.5	1.4	1.5	█	<b>24</b>	<i>gyrA_24</i>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>			

28 *gyrB*:

		Percent Identity																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
Divergence	<b>1</b>	█	97.9	98.1	99.4	99.4	98.0	99.3	99.3	98.0	98.3	98.5	97.9	98.5	99.5	98.2	99.3	99.5	98.1	99.5	98.2	98.1	98.5	<b>1</b>	gyrB_1
	<b>2</b>	2.1	█	99.0	97.8	97.8	99.8	97.8	97.8	99.5	98.8	97.6	99.4	97.6	97.9	97.4	97.5	97.9	99.8	97.9	99.8	99.1	97.7	<b>2</b>	gyrB_2
	<b>3</b>	1.9	1.0	█	98.0	98.0	99.2	98.1	98.1	99.1	99.6	97.8	98.9	97.8	98.1	97.6	97.8	98.1	99.1	98.1	99.1	99.5	97.9	<b>3</b>	gyrB_3
	<b>4</b>	0.6	2.3	2.1	█	99.9	97.8	99.2	99.2	97.9	98.1	98.3	97.9	98.3	99.9	98.0	99.2	99.8	98.0	99.9	98.0	98.0	98.3	<b>4</b>	gyrB_4
	<b>5</b>	0.6	2.2	2.0	0.1	█	97.9	99.3	99.3	97.9	98.2	98.4	97.9	98.4	99.9	98.1	99.3	99.9	98.0	100.0	98.1	98.0	98.4	<b>5</b>	gyrB_5
	<b>6</b>	2.1	0.2	0.8	2.2	2.2	█	97.8	97.8	99.7	98.9	97.7	99.4	97.7	98.0	97.5	97.5	97.9	99.8	97.9	99.5	99.2	97.8	<b>6</b>	gyrB_6
	<b>7</b>	0.7	2.3	2.0	0.8	0.7	2.2	█	99.9	97.9	98.1	98.3	97.9	98.3	99.4	98.0	99.3	99.3	98.0	99.3	98.0	98.1	98.3	<b>7</b>	gyrB_7
	<b>8</b>	0.7	2.3	2.0	0.8	0.7	2.2	0.1	█	97.9	98.1	98.3	97.9	98.3	99.4	98.0	99.3	99.3	98.0	99.3	98.0	98.1	98.3	<b>8</b>	gyrB_8
	<b>9</b>	2.0	0.5	0.9	2.2	2.1	0.3	2.2	2.2	█	98.9	97.8	99.6	97.8	98.0	97.6	97.6	98.0	99.6	98.0	99.3	99.0	97.9	<b>9</b>	gyrB_9
	<b>10</b>	1.8	1.2	0.4	1.9	1.9	1.1	1.9	1.9	1.1	█	97.9	98.8	97.9	98.3	97.7	97.9	98.2	98.9	98.2	99.0	99.4	98.0	<b>10</b>	gyrB_10
	<b>11</b>	1.5	2.5	2.3	1.7	1.6	2.3	1.7	1.7	2.3	2.1	█	97.7	99.8	98.5	99.5	98.2	98.4	97.8	98.4	97.8	97.6	99.9	<b>11</b>	gyrB_11
	<b>12</b>	2.1	0.6	1.1	2.2	2.1	0.6	2.2	2.2	0.4	1.2	2.4	█	97.7	98.0	97.5	97.6	98.0	99.3	98.0	99.4	98.9	97.8	<b>12</b>	gyrB_12
	<b>13</b>	1.5	2.5	2.3	1.7	1.7	2.3	1.7	1.7	2.3	2.1	0.2	2.4	█	98.5	99.5	98.2	98.4	97.8	98.4	97.8	97.6	99.8	<b>13</b>	gyrB_13
	<b>14</b>	0.5	2.1	1.9	0.1	0.1	2.1	0.6	0.6	2.0	1.8	1.5	2.0	1.5	█	98.2	99.4	100.0	98.1	100.0	98.2	98.1	98.5	<b>14</b>	gyrB_14
	<b>15</b>	1.9	2.7	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.3	0.5	2.6	0.5	1.9	█	97.9	98.1	97.6	98.1	97.6	97.4	99.5	<b>15</b>	gyrB_15
	<b>16</b>	0.7	2.6	2.3	0.8	0.7	2.5	0.7	0.7	2.5	2.1	1.8	2.5	1.8	0.6	2.1	█	99.3	97.7	99.3	97.7	97.8	98.2	<b>16</b>	gyrB_16
	<b>17</b>	0.5	2.2	2.0	0.2	0.1	2.1	0.7	0.7	2.1	1.8	1.6	2.1	1.6	0.0	1.9	0.7	█	98.1	99.9	98.1	98.1	98.4	<b>17</b>	gyrB_17
	<b>18</b>	1.9	0.2	0.9	2.1	2.0	0.2	2.1	2.1	0.4	1.1	2.3	0.7	2.3	1.9	2.5	2.4	2.0	█	98.1	99.6	99.1	97.9	<b>18</b>	gyrB_18
	<b>19</b>	0.5	2.2	2.0	0.1	0.0	2.1	0.7	0.7	2.1	1.8	1.6	2.1	1.6	0.0	1.9	0.7	0.1	2.0	█	98.1	98.1	98.4	<b>19</b>	gyrB_19
	<b>20</b>	1.9	0.2	0.9	2.0	2.0	0.5	2.0	2.0	0.7	1.0	2.2	0.6	2.2	1.9	2.4	2.3	1.9	0.4	1.9	█	99.3	97.9	<b>20</b>	gyrB_20
	<b>21</b>	1.9	0.9	0.5	2.1	2.0	0.8	2.0	2.0	1.0	0.6	2.5	1.1	2.5	1.9	2.7	2.3	2.0	0.9	2.0	0.7	█	97.7	<b>21</b>	gyrB_21
	<b>22</b>	1.5	2.4	2.2	1.7	1.6	2.2	1.7	1.7	2.2	2.0	0.1	2.3	0.2	1.5	0.5	1.8	1.6	2.2	1.6	2.1	2.4	█	<b>22</b>	gyrB_22
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>			

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31 *hsp65*:

		Percent Identity										
		1	2	3	4	5	6	7	8	9		
Divergence	1	█	98.8	98.6	98.6	98.8	99.8	99.8	98.6	92.9	1	hsp_1
	2	1.2	█	99.3	99.8	99.5	98.6	98.6	99.3	92.7	2	hsp_2
	3	1.4	0.7	█	99.1	99.8	98.8	98.3	99.5	92.5	3	hsp_3
	4	1.4	0.2	0.9	█	99.3	98.3	98.3	99.1	92.7	4	hsp_4
	5	1.2	0.5	0.2	0.7	█	98.6	98.6	99.8	92.7	5	hsp_5
	6	0.2	1.4	1.2	1.7	1.4	█	99.5	98.3	92.7	6	hsp_6
	7	0.2	1.4	1.7	1.7	1.4	0.5	█	98.3	92.7	7	hsp_7
	8	1.4	0.7	0.5	0.9	0.2	1.7	1.7	█	92.5	8	hsp_8
	9	7.5	7.7	8.0	7.7	7.7	7.7	7.7	8.0	█	9	hsp_9
	1	2	3	4	5	6	7	8	9			

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35 *murC*:

		Percent Identity																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Divergence	<b>1</b>	█	99.8	99.8	99.3	99.3	99.6	99.6	99.6	98.2	97.1	96.9	98.0	98.0	96.6	96.2	98.2	<b>1</b>	murC_1
	<b>2</b>	0.2	█	99.6	99.6	99.1	99.3	99.8	99.3	98.4	97.3	97.1	98.2	98.2	96.9	96.4	98.4	<b>2</b>	murC_2
	<b>3</b>	0.2	0.5	█	99.1	99.6	99.3	99.3	99.8	98.0	96.9	96.6	97.8	97.8	96.4	96.0	98.0	<b>3</b>	murC_3
	<b>4</b>	0.7	0.5	0.9	█	98.7	98.9	99.3	98.9	98.0	96.9	96.6	97.8	97.8	96.4	96.0	98.0	<b>4</b>	murC_4
	<b>5</b>	0.7	0.9	0.5	1.4	█	99.6	98.9	99.6	97.5	96.4	96.2	97.3	97.3	96.0	95.5	97.5	<b>5</b>	murC_5
	<b>6</b>	0.5	0.7	0.7	1.1	0.5	█	99.1	99.6	97.8	96.6	96.4	97.5	97.5	96.2	95.7	97.8	<b>6</b>	murC_6
	<b>7</b>	0.5	0.2	0.7	0.7	1.1	0.9	█	99.1	98.2	97.1	96.9	98.0	98.0	96.6	96.2	98.2	<b>7</b>	murC_7
	<b>8</b>	0.5	0.7	0.2	1.1	0.5	0.5	0.9	█	97.8	96.6	96.4	97.5	97.5	96.2	95.7	97.8	<b>8</b>	murC_8
	<b>9</b>	1.8	1.6	2.1	2.1	2.5	2.3	1.8	2.3	█	96.6	96.4	99.8	98.9	96.2	95.7	99.6	<b>9</b>	murC_9
	<b>10</b>	3.0	2.8	3.2	3.2	3.7	3.5	3.0	3.5	3.5	█	99.8	96.4	96.9	99.6	99.1	97.1	<b>10</b>	murC_10
	<b>11</b>	3.2	3.0	3.5	3.5	3.9	3.7	3.2	3.7	3.7	0.2	█	96.2	96.6	99.8	99.3	96.9	<b>11</b>	murC_11
	<b>12</b>	2.1	1.8	2.3	2.3	2.8	2.5	2.1	2.5	0.2	3.7	4.0	█	98.7	96.0	95.5	99.3	<b>12</b>	murC_12
	<b>13</b>	2.1	1.8	2.3	2.3	2.8	2.5	2.1	2.5	1.1	3.2	3.5	1.4	█	96.4	96.0	99.3	<b>13</b>	murC_13
	<b>14</b>	3.5	3.2	3.7	3.7	4.2	3.9	3.5	3.9	4.0	0.5	0.2	4.2	3.7	█	99.6	96.6	<b>14</b>	murC_14
	<b>15</b>	3.9	3.7	4.2	4.2	4.7	4.4	3.9	4.4	4.4	0.9	0.7	4.7	4.2	0.5	█	96.2	<b>15</b>	murC_15
	<b>16</b>	1.8	1.6	2.1	2.1	2.5	2.3	1.8	2.3	0.5	3.0	3.2	0.7	0.7	3.5	4.0	█	<b>16</b>	murC_16

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		Percent Identity																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
Divergence	<b>1</b>	█	99.4	99.2	97.7	98.7	99.2	99.2	98.1	97.9	98.5	99.8	98.1	98.3	98.3	98.7	99.4	98.7	97.7	98.1	97.9	98.7	98.5	98.1	<b>1</b>	pta_1
	<b>2</b>	0.6	█	99.0	98.3	98.8	99.8	99.4	98.7	98.1	99.0	99.6	98.3	98.8	98.5	99.2	99.6	99.2	97.9	98.7	98.5	99.0	99.0	98.3	<b>2</b>	pta_2
	<b>3</b>	0.8	1.0	█	97.7	99.4	98.8	98.8	98.1	97.9	98.8	99.0	98.1	98.7	98.3	99.0	99.0	99.0	97.7	98.1	97.9	99.0	98.8	98.1	<b>3</b>	pta_3
	<b>4</b>	2.4	1.8	2.4	█	97.7	98.1	98.1	99.6	99.8	97.7	97.9	99.2	97.5	99.4	97.9	98.3	97.9	99.6	99.6	99.8	97.7	98.5	99.2	<b>4</b>	pta_4
	<b>5</b>	1.4	1.2	0.6	2.4	█	98.7	98.3	97.9	97.9	98.7	98.5	98.1	98.5	98.3	98.8	98.5	98.8	97.7	98.1	97.9	98.8	98.8	98.1	<b>5</b>	pta_5
	<b>6</b>	0.8	0.2	1.2	2.0	1.4	█	99.2	98.5	97.9	98.8	99.4	98.1	98.7	98.3	99.0	99.4	99.0	97.7	98.5	98.3	98.8	98.8	98.1	<b>6</b>	pta_6
	<b>7</b>	0.8	0.6	1.2	2.0	1.8	0.8	█	98.5	97.9	98.5	99.4	98.1	98.3	98.3	98.7	99.8	98.7	97.7	98.5	98.3	98.5	98.5	98.1	<b>7</b>	pta_7
	<b>8</b>	2.0	1.4	2.0	0.4	2.2	1.6	1.6	█	99.4	98.1	98.3	98.8	97.9	99.0	98.3	98.7	98.3	99.2	99.2	99.8	98.1	98.1	98.8	<b>8</b>	pta_8
	<b>9</b>	2.2	2.0	2.2	0.2	2.2	2.2	2.2	0.6	█	97.5	97.7	99.4	97.3	99.6	97.7	98.1	97.7	99.8	99.4	99.6	97.7	98.3	99.4	<b>9</b>	pta_9
	<b>10</b>	1.6	1.0	1.2	2.4	1.4	1.2	1.6	2.0	2.5	█	98.7	97.7	99.8	97.9	99.4	98.7	99.8	97.3	98.1	97.9	99.6	99.2	97.7	<b>10</b>	pta_10
	<b>11</b>	0.2	0.4	1.0	2.2	1.6	0.6	0.6	1.8	2.4	1.4	█	97.9	98.5	98.1	98.8	99.6	98.8	97.5	98.3	98.1	98.7	98.7	97.9	<b>11</b>	pta_11
	<b>12</b>	2.0	1.8	2.0	0.8	2.0	2.0	2.0	1.2	0.6	2.3	2.2	█	97.5	99.8	97.9	98.3	97.9	99.2	99.6	99.0	97.9	98.5	99.6	<b>12</b>	pta_12
	<b>13</b>	1.8	1.2	1.4	2.6	1.6	1.4	1.8	2.2	2.8	0.2	1.6	2.5	█	97.7	99.6	98.5	99.6	97.1	97.9	97.7	99.4	99.0	97.5	<b>13</b>	pta_13
	<b>14</b>	1.8	1.6	1.8	0.6	1.8	1.8	1.8	1.0	0.4	2.1	2.0	0.2	2.3	█	98.1	98.5	98.1	99.4	99.8	99.2	98.1	98.7	99.8	<b>14</b>	pta_14
	<b>15</b>	1.4	0.8	1.0	2.2	1.2	1.0	1.4	1.8	2.4	0.6	1.2	2.2	0.4	2.0	█	98.8	99.6	97.5	98.3	98.1	99.4	99.4	97.9	<b>15</b>	pta_15
	<b>16</b>	0.6	0.4	1.0	1.8	1.6	0.6	0.2	1.4	2.0	1.4	0.4	1.8	1.6	1.6	1.2	█	98.8	97.9	98.7	98.5	98.7	98.7	98.3	<b>16</b>	pta_16
	<b>17</b>	1.4	0.8	1.0	2.2	1.2	1.0	1.4	1.8	2.3	0.2	1.2	2.1	0.4	2.0	0.4	1.2	█	97.5	98.3	98.1	99.8	99.4	97.9	<b>17</b>	pta_17
	<b>18</b>	2.4	2.2	2.4	0.4	2.4	2.4	2.4	0.8	0.2	2.8	2.6	0.8	3.0	0.6	2.6	2.2	2.5	█	99.2	99.4	97.5	98.1	99.2	<b>18</b>	pta_18
	<b>19</b>	2.0	1.4	2.0	0.4	2.0	1.6	1.6	0.8	0.6	2.0	1.8	0.4	2.2	0.2	1.8	1.4	1.8	0.8	█	99.4	98.1	98.8	99.6	<b>19</b>	pta_19
	<b>20</b>	2.2	1.6	2.2	0.2	2.2	1.8	1.8	0.2	0.4	2.2	2.0	1.0	2.4	0.8	2.0	1.6	2.0	0.6	0.6	█	97.9	98.3	99.0	<b>20</b>	pta_20
	<b>21</b>	1.4	1.0	1.0	2.4	1.2	1.2	1.6	2.0	2.3	0.4	1.4	2.1	0.6	2.0	0.6	1.4	0.2	2.5	2.0	2.2	█	99.2	97.9	<b>21</b>	pta_21
	<b>22</b>	1.6	1.0	1.2	1.6	1.2	1.2	1.6	2.0	1.8	0.8	1.4	1.6	1.0	1.4	0.6	1.4	0.6	2.0	1.2	1.8	0.8	█	98.5	<b>22</b>	pta_22
	<b>23</b>	2.0	1.8	2.0	0.8	2.0	2.0	2.0	1.2	0.6	2.3	2.2	0.4	2.5	0.2	2.2	1.8	2.1	0.8	0.4	1.0	2.1	1.6	█	<b>23</b>	pta_23

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48 *purH*:

		Percent Identity																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Divergence	<b>1</b>	█	99.4	99.6	99.2	99.2	98.8	99.6	99.4	98.6	98.4	98.2	98.2	98.0	99.8	99.4	98.2	98.2	<b>1</b>	purH_1
	<b>2</b>	0.6	█	99.4	99.8	99.8	99.0	99.4	99.6	98.4	98.2	98.0	98.0	97.8	99.6	99.2	98.0	98.0	<b>2</b>	purH_2
	<b>3</b>	0.4	0.6	█	99.2	99.2	98.8	99.6	99.4	98.8	98.6	98.2	98.2	98.0	99.8	99.4	98.4	98.4	<b>3</b>	purH_3
	<b>4</b>	0.8	0.2	0.8	█	99.6	98.8	99.6	99.4	98.2	98.0	97.8	97.8	97.6	99.4	99.4	97.8	97.8	<b>4</b>	purH_4
	<b>5</b>	0.8	0.2	0.8	0.4	█	98.8	99.2	99.4	98.2	98.0	97.8	97.8	97.6	99.4	99.0	97.8	97.8	<b>5</b>	purH_5
	<b>6</b>	1.2	1.0	1.2	1.2	1.2	█	98.8	99.0	98.6	98.4	97.8	97.8	97.6	99.0	98.6	98.2	98.2	<b>6</b>	purH_6
	<b>7</b>	0.4	0.6	0.4	0.4	0.8	1.2	█	99.4	98.6	98.4	98.2	98.2	98.0	99.8	99.8	98.2	98.2	<b>7</b>	purH_7
	<b>8</b>	0.6	0.4	0.6	0.6	0.6	1.0	0.6	█	98.4	98.2	98.0	98.0	97.8	99.6	99.2	98.0	98.0	<b>8</b>	purH_8
	<b>9</b>	1.4	1.6	1.2	1.8	1.8	1.4	1.4	1.6	█	99.8	97.6	97.6	97.4	98.8	98.4	99.6	99.6	<b>9</b>	purH_9
	<b>10</b>	1.6	1.8	1.4	2.0	2.0	1.6	1.6	1.8	0.2	█	97.4	97.4	97.2	98.6	98.2	99.4	99.4	<b>10</b>	purH_10
	<b>11</b>	1.8	2.0	1.8	2.3	2.3	2.3	1.8	2.0	2.5	2.7	█	98.8	99.4	98.4	98.4	97.2	97.2	<b>11</b>	purH_11
	<b>12</b>	1.8	2.0	1.8	2.3	2.3	2.3	1.8	2.0	2.5	2.7	1.2	█	99.4	98.4	98.0	97.2	97.2	<b>12</b>	purH_12
	<b>13</b>	2.0	2.3	2.1	2.5	2.5	2.5	2.1	2.3	2.7	2.9	0.6	0.6	█	98.2	97.8	97.0	97.0	<b>13</b>	purH_13
	<b>14</b>	0.2	0.4	0.2	0.6	0.6	1.0	0.2	0.4	1.2	1.4	1.6	1.6	1.8	█	99.6	98.4	98.4	<b>14</b>	purH_14
	<b>15</b>	0.6	0.8	0.6	0.6	1.0	1.4	0.2	0.8	1.6	1.8	1.6	2.0	2.3	0.4	█	98.0	98.0	<b>15</b>	purH_15
	<b>16</b>	1.8	2.0	1.6	2.3	2.3	1.8	1.8	2.0	0.4	0.6	2.9	2.9	3.1	1.6	2.0	█	99.2	<b>16</b>	purH_16
	<b>17</b>	1.8	2.0	1.6	2.3	2.3	1.8	1.8	2.0	0.4	0.6	2.9	2.9	3.1	1.6	2.0	0.8	█	<b>17</b>	purH_17
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>			

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55 *rpoB*:

		Percent Identity												
		1	2	3	4	5	6	7	8	9	10	11		
Divergence	<b>1</b>	█	99.8	99.8	99.8	95.0	96.0	96.0	99.4	95.8	96.0	96.0	<b>1</b>	rpoB_1
	<b>2</b>	0.2	█	99.6	99.6	94.8	95.8	95.8	99.2	95.6	95.8	95.8	<b>2</b>	rpoB_2
	<b>3</b>	0.2	0.4	█	99.6	94.8	95.8	95.8	99.2	95.6	95.8	95.8	<b>3</b>	rpoB_3
	<b>4</b>	0.2	0.4	0.4	█	95.2	96.2	96.2	99.6	96.0	96.2	96.2	<b>4</b>	rpoB_4
	<b>5</b>	5.1	5.4	5.4	4.9	█	98.2	98.0	95.2	97.8	98.2	98.2	<b>5</b>	rpoB_5
	<b>6</b>	4.1	4.3	4.3	3.9	1.8	█	99.8	96.6	99.6	99.6	99.6	<b>6</b>	rpoB_6
	<b>7</b>	4.1	4.3	4.3	3.9	2.0	0.2	█	96.6	99.8	99.4	99.4	<b>7</b>	rpoB_7
	<b>8</b>	0.6	0.8	0.8	0.4	4.9	3.5	3.5	█	96.4	96.2	96.2	<b>8</b>	rpoB_8
	<b>9</b>	4.3	4.5	4.5	4.1	2.2	0.4	0.2	3.7	█	99.2	99.2	<b>9</b>	rpoB_9
	<b>10</b>	4.1	4.3	4.3	3.9	1.8	0.4	0.6	3.9	0.8	█	99.6	<b>10</b>	rpoB_10
	<b>11</b>	4.1	4.3	4.3	3.9	1.8	0.4	0.6	3.9	0.8	0.4	█	<b>11</b>	rpoB_11
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>			

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58 *rri:*

Percent Identity

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
Divergence	<b>1</b>	█	99.8	99.9	100.0	99.8	99.8	100.0	99.8	99.9	100.0	100.0	100.0	99.9	99.9	99.9	100.0	100.0	99.8	99.9	99.8	99.8	99.9	100.0	100.0	99.8	<b>1</b>	rri_1	
	<b>2</b>	0.2	█	99.7	99.8	99.7	100.0	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.7	99.7	99.8	99.8	99.8	99.9	99.9	99.9	99.9	99.7	99.8	99.8	99.9	<b>2</b>	rri_2
	<b>3</b>	0.1	0.3	█	99.8	100.0	99.8	99.8	99.9	100.0	99.8	99.8	99.8	99.9	99.9	99.8	99.8	99.8	99.9	99.8	99.7	99.7	99.9	99.8	99.8	99.7	<b>3</b>	rri_3	
	<b>4</b>	0.0	0.2	0.2	█	99.8	99.8	99.9	99.8	99.9	99.9	99.9	99.9	99.8	99.8	99.9	99.9	99.9	99.8	99.8	99.7	99.8	99.8	99.9	99.9	99.8	<b>4</b>	rri_4	
	<b>5</b>	0.2	0.3	0.0	0.2	█	99.7	99.8	99.9	99.9	99.8	99.8	99.8	99.9	99.9	99.8	99.9	99.8	99.9	99.8	99.7	99.7	100.0	99.8	99.8	99.7	<b>5</b>	rri_5	
	<b>6</b>	0.2	0.0	0.2	0.2	0.3	█	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	100.0	99.9	100.0	99.8	99.8	99.8	<b>6</b>	rri_6	
	<b>7</b>	0.0	0.2	0.2	0.1	0.2	0.2	█	99.8	99.9	99.9	99.9	99.9	99.8	99.8	99.9	99.9	99.9	99.8	99.8	99.7	99.8	99.8	99.9	99.9	99.8	<b>7</b>	rri_7	
	<b>8</b>	0.2	0.2	0.1	0.2	0.1	0.2	0.2	█	99.9	99.8	99.8	99.8	100.0	99.9	99.8	99.8	99.8	99.8	99.9	99.8	99.7	99.8	99.9	99.8	99.8	<b>8</b>	rri_8	
	<b>9</b>	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.1	█	99.9	99.9	99.9	100.0	100.0	99.8	99.9	99.9	99.9	99.8	99.7	99.8	100.0	99.9	99.9	99.8	<b>9</b>	rri_9	
	<b>10</b>	0.0	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	█	99.9	99.9	99.8	99.8	99.9	99.9	99.9	99.8	99.8	99.7	99.8	99.8	99.9	99.9	99.8	<b>10</b>	rri_10	
	<b>11</b>	0.0	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	█	99.9	99.8	99.8	99.9	99.9	99.9	99.8	99.8	99.7	99.8	99.8	99.9	99.9	99.8	<b>11</b>	rri_11	
	<b>12</b>	0.0	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	█	99.8	99.8	99.9	99.9	99.9	99.8	99.8	99.7	99.8	99.8	99.9	99.9	99.8	<b>12</b>	rri_12	
	<b>13</b>	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.0	0.0	0.2	0.2	0.2	█	99.9	99.8	99.8	99.8	100.0	99.9	99.8	99.8	99.9	99.8	99.8	<b>13</b>	rri_13		
	<b>14</b>	0.1	0.3	0.1	0.2	0.1	0.2	0.2	0.1	0.0	0.2	0.2	0.2	0.1	█	99.8	99.8	99.8	99.9	99.8	99.7	99.7	99.9	99.8	99.8	99.7	<b>14</b>	rri_14	
	<b>15</b>	0.1	0.3	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	█	99.9	99.9	99.8	99.8	99.7	99.7	99.8	99.9	99.9	99.7	<b>15</b>	rri_15	
	<b>16</b>	0.0	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	█	99.9	99.8	99.8	99.7	99.8	99.9	100.0	99.9	<b>16</b>	rri_16	
	<b>17</b>	0.0	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	█	99.8	99.8	99.7	99.8	99.8	99.9	99.9	99.8	<b>17</b>	rri_17	
	<b>18</b>	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.0	0.1	0.2	0.2	0.2	█	99.8	99.7	99.8	99.9	99.8	99.8	99.8	<b>18</b>	rri_18	
	<b>19</b>	0.1	0.1	0.2	0.2	0.2	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	█	99.9	99.9	99.8	99.8	99.8	99.9	<b>19</b>	rri_19	
	<b>20</b>	0.2	0.1	0.3	0.3	0.3	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1	█	99.9	99.7	99.7	99.7	<b>20</b>	rri_20	
	<b>21</b>	0.2	0.1	0.3	0.2	0.3	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	█	99.7	99.8	99.8	<b>21</b>	rri_21	
	<b>22</b>	0.1	0.3	0.1	0.2	0.0	0.2	0.2	0.1	0.0	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.3	█	99.9	<b>22</b>	rri_22	
	<b>23</b>	0.0	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.2	0.2	0.3	0.2	0.1	█	99.9	99.8	<b>23</b>	rri_23	
	<b>24</b>	0.0	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.1	█	99.8	<b>24</b>	rri_24	
	<b>25</b>	0.2	0.1	0.3	0.2	0.3	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.2	█	<b>25</b>	rri_25	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>				

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62 *rrs*:

	1	2	3	4	5	6	7			
Divergence	1	█	99.9	99.9	99.9	99.8	99.9	99.9	1	rrs_1
	2	0.1	█	99.9	99.8	99.7	99.9	99.9	2	rrs_2
	3	0.1	0.1	█	99.9	99.7	99.9	99.9	3	rrs_3
	4	0.1	0.2	0.1	█	99.7	99.9	99.9	4	rrs_4
	5	0.2	0.3	0.3	0.3	█	99.7	99.7	5	rrs_5
	6	0.1	0.1	0.1	0.1	0.3	█	99.8	6	rrs_6
	7	0.1	0.1	0.1	0.1	0.3	0.2	█	7	rrs_7
	1	2	3	4	5	6	7			

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