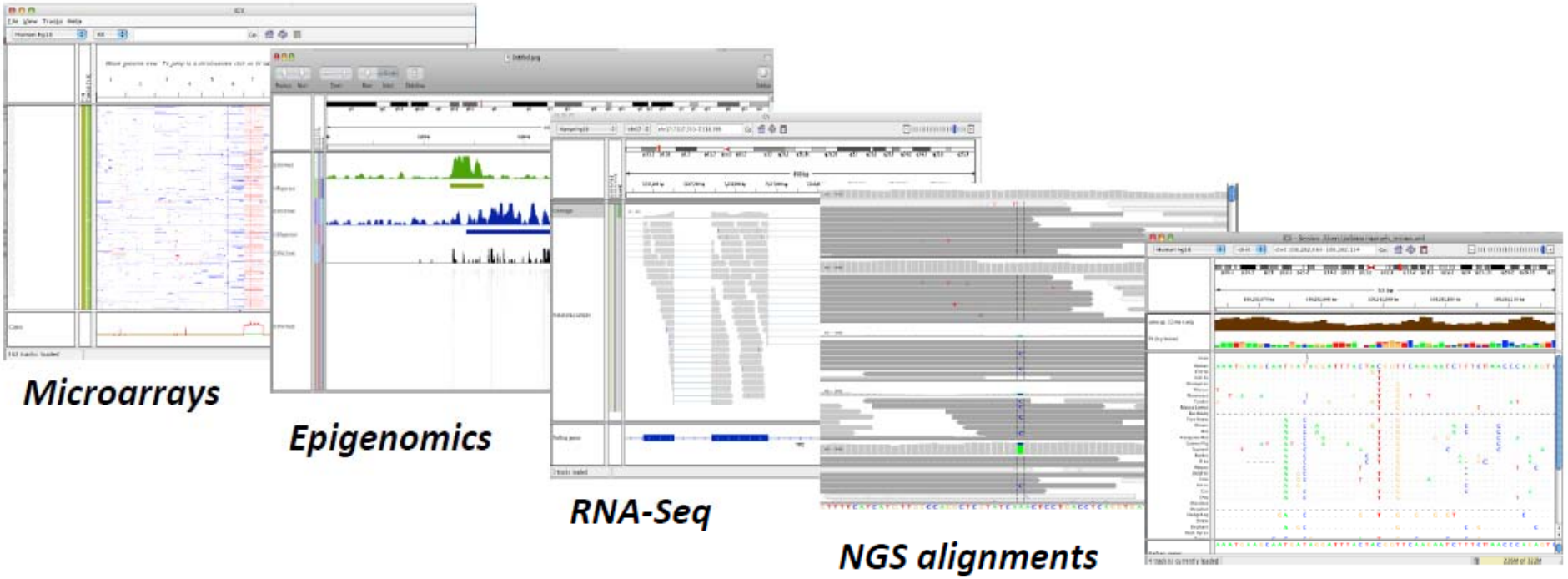
IGV tools



What is IGV

Integrative Genomics Viewer

A desktop application for integrated visualization of multiple data types and annotations in the context of the genome

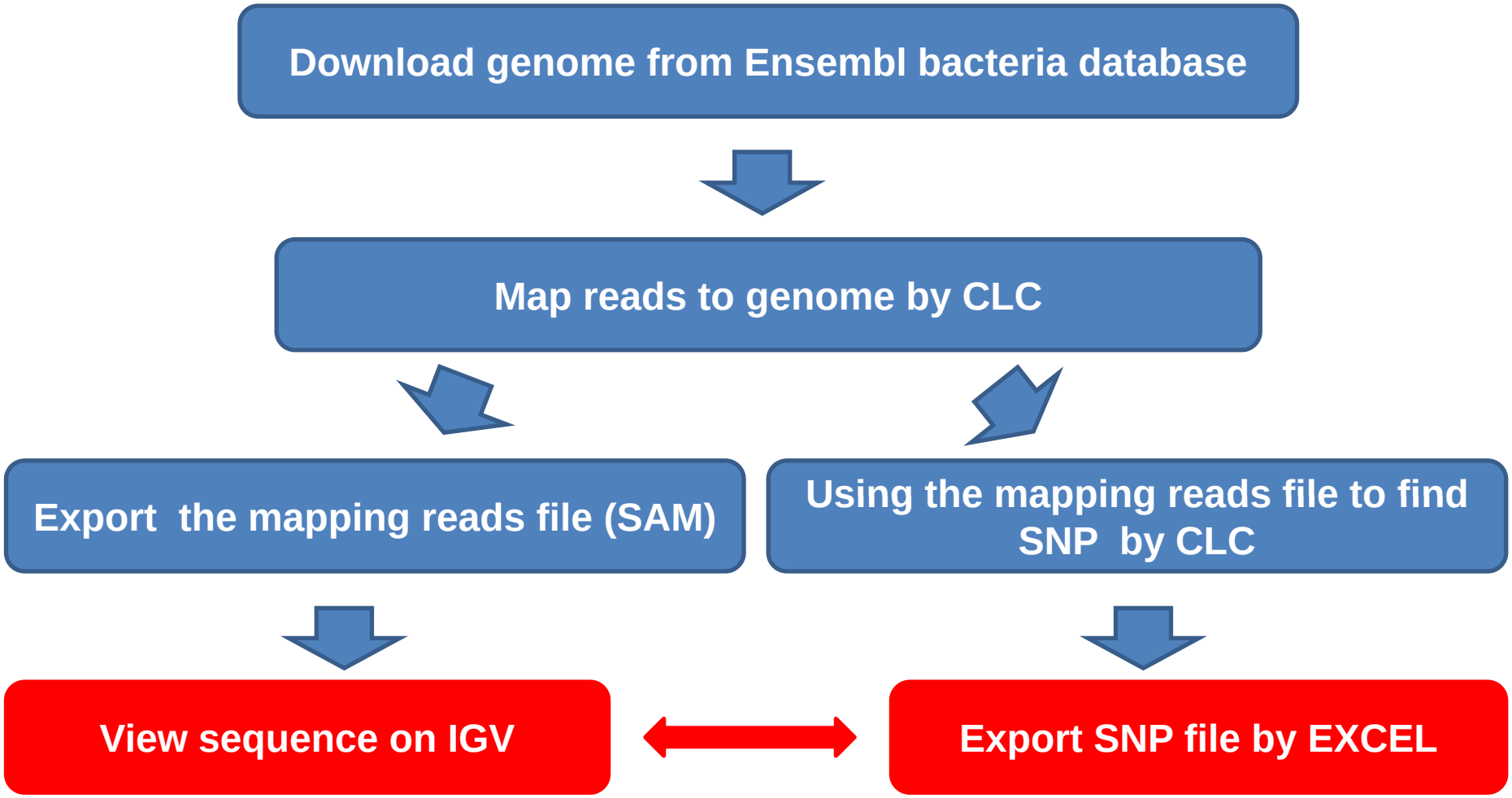


IGV Features



- Supports integration of diverse data types, including microarray, next-generation sequencing, and sample annotations.
- Allows loading from local files, the web, or DAS servers.
- Scales to very large datasets on standard desktop computers.
- Enables easy integration of investigator-generated datasets with public annotations and datasets hosted at the Broad and elsewhere.
- Supports sharing of data over the web using standard http and https protocols.

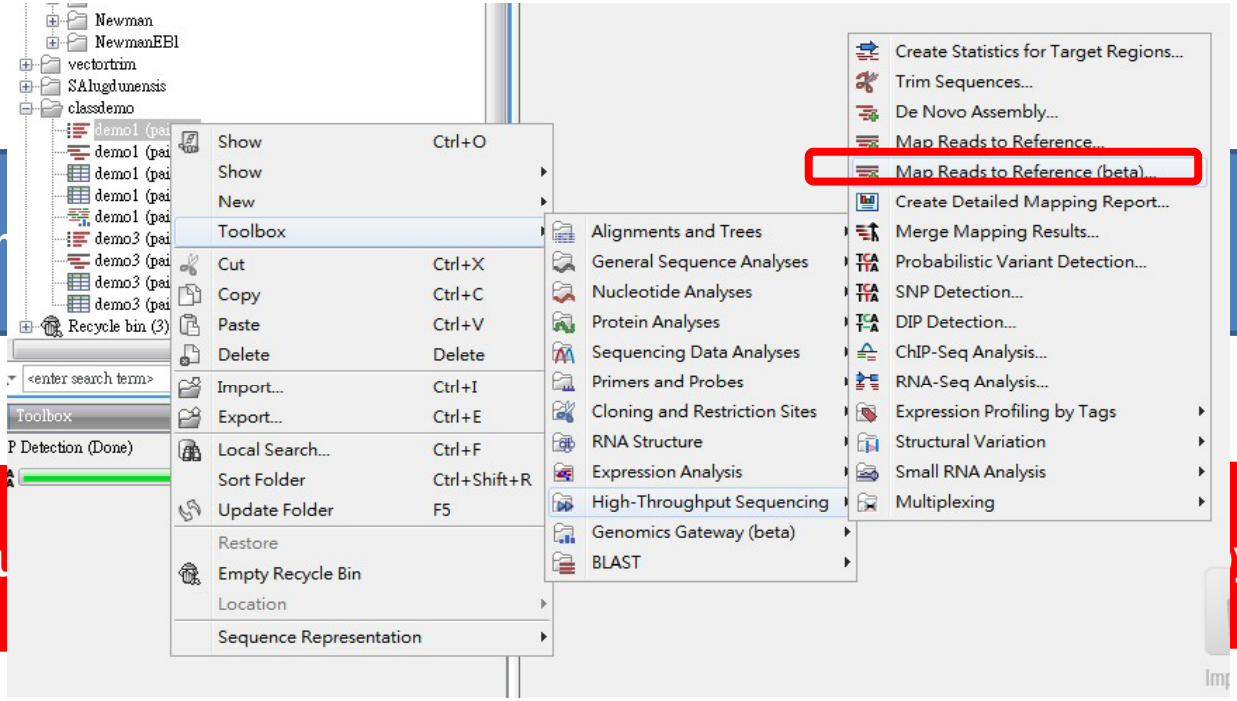
Pipeline


Download genome from Ensembl bacteria database
Map reads to genome by CLC
Export the mapping reads file (SAM)
Using the mapping reads file to find SNP by CLC
View sequence on IGV
Export SNP file by EXCEL

Download genome from Ensembl bacteria database

Integrative Genomics Viewer

Map reads to genome by CLC



Export the m

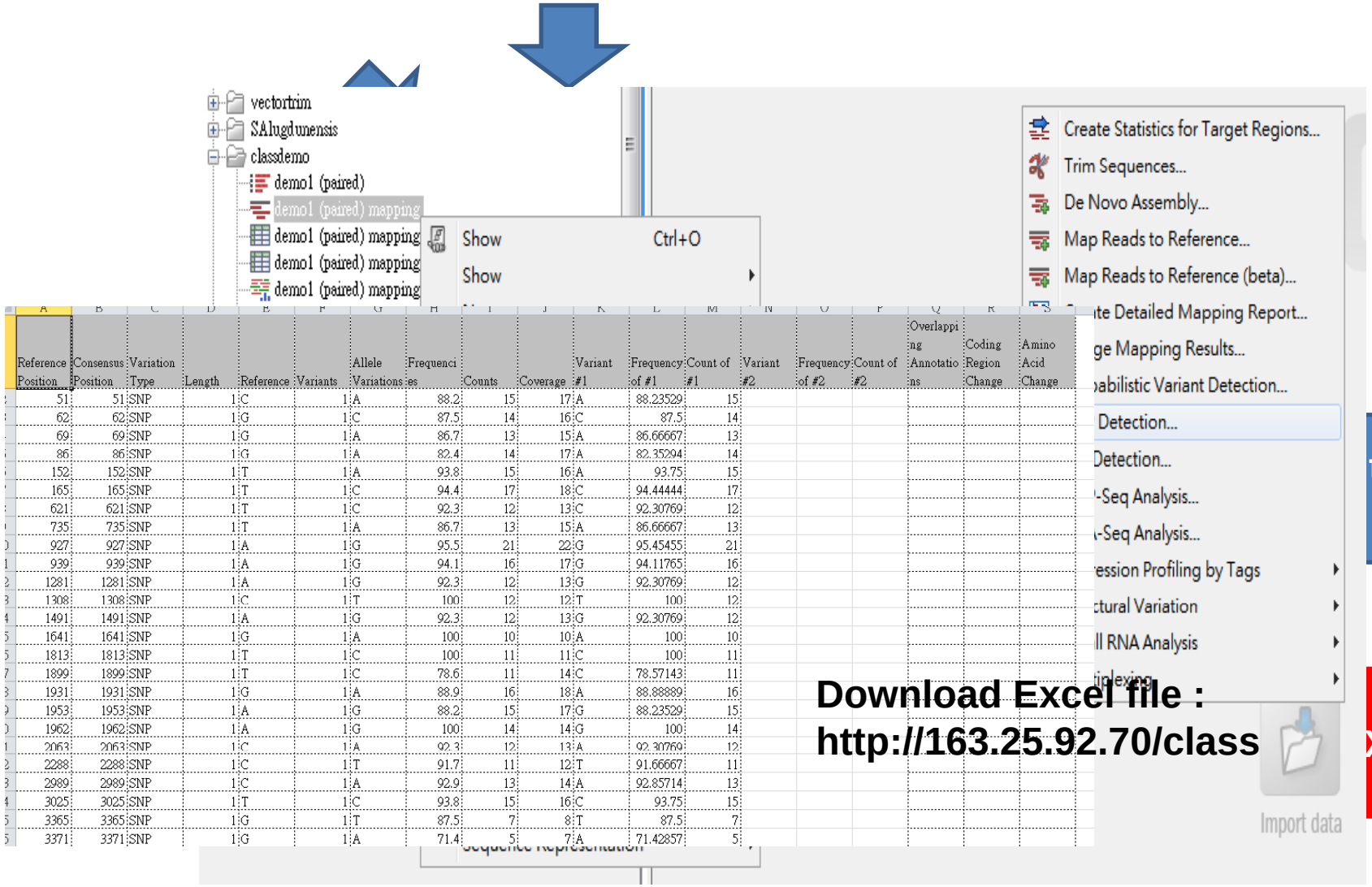
file to find

View sequ

y EXCEL

Download genome from Ensembl bacteria database

Integrative Genomics Viewer



Reference Position	Consensus Position	Variation Type	Length	Reference	Variants	Allele Variations	Frequencies	Counts	Coverage	Variant #1	Frequency of #1	Count of #1	Variant #2	Frequency of #2	Count of #2	Overlapping Annotations	Coding Region Change	Amino Acid Change
51	51	SNP	1	C	1	A	88.2	15	17	A	88.23529	15						
62	62	SNP	1	G	1	C	87.5	14	16	C	87.5	14						
69	69	SNP	1	G	1	A	86.7	13	15	A	86.66667	13						
86	86	SNP	1	G	1	A	82.4	14	17	A	82.35294	14						
152	152	SNP	1	T	1	A	93.8	15	16	A	93.75	15						
165	165	SNP	1	T	1	C	94.4	17	18	C	94.44444	17						
621	621	SNP	1	T	1	C	92.3	12	13	C	92.30769	12						
735	735	SNP	1	T	1	A	86.7	13	15	A	86.66667	13						
927	927	SNP	1	A	1	G	95.5	21	22	G	95.45455	21						
939	939	SNP	1	A	1	G	94.1	16	17	G	94.11765	16						
1281	1281	SNP	1	A	1	G	92.3	12	13	G	92.30769	12						
1308	1308	SNP	1	C	1	T	100	12	12	T	100	12						
1491	1491	SNP	1	A	1	G	92.3	12	13	G	92.30769	12						
1641	1641	SNP	1	G	1	A	100	10	10	A	100	10						
1813	1813	SNP	1	T	1	C	100	11	11	C	100	11						
1899	1899	SNP	1	T	1	C	78.6	11	14	C	78.57143	11						
1931	1931	SNP	1	G	1	A	88.9	16	18	A	88.88889	16						
1953	1953	SNP	1	A	1	G	88.2	15	17	G	88.23529	15						
1962	1962	SNP	1	A	1	G	100	14	14	G	100	14						
2063	2063	SNP	1	C	1	A	92.3	12	13	A	92.30769	12						
2288	2288	SNP	1	C	1	T	91.7	11	12	T	91.66667	11						
2989	2989	SNP	1	C	1	A	92.9	13	14	A	92.85714	13						
3025	3025	SNP	1	T	1	C	93.8	15	16	C	93.75	15						
3365	3365	SNP	1	G	1	T	87.5	7	8	T	87.5	7						
3371	3371	SNP	1	G	1	A	71.4	5	7	A	71.42857	5						

to find

Download Excel file :
http://163.25.92.70/class

XCEL

Download genome from Ensembl bacteria database

Integrative Genomics Viewer

Using samtools

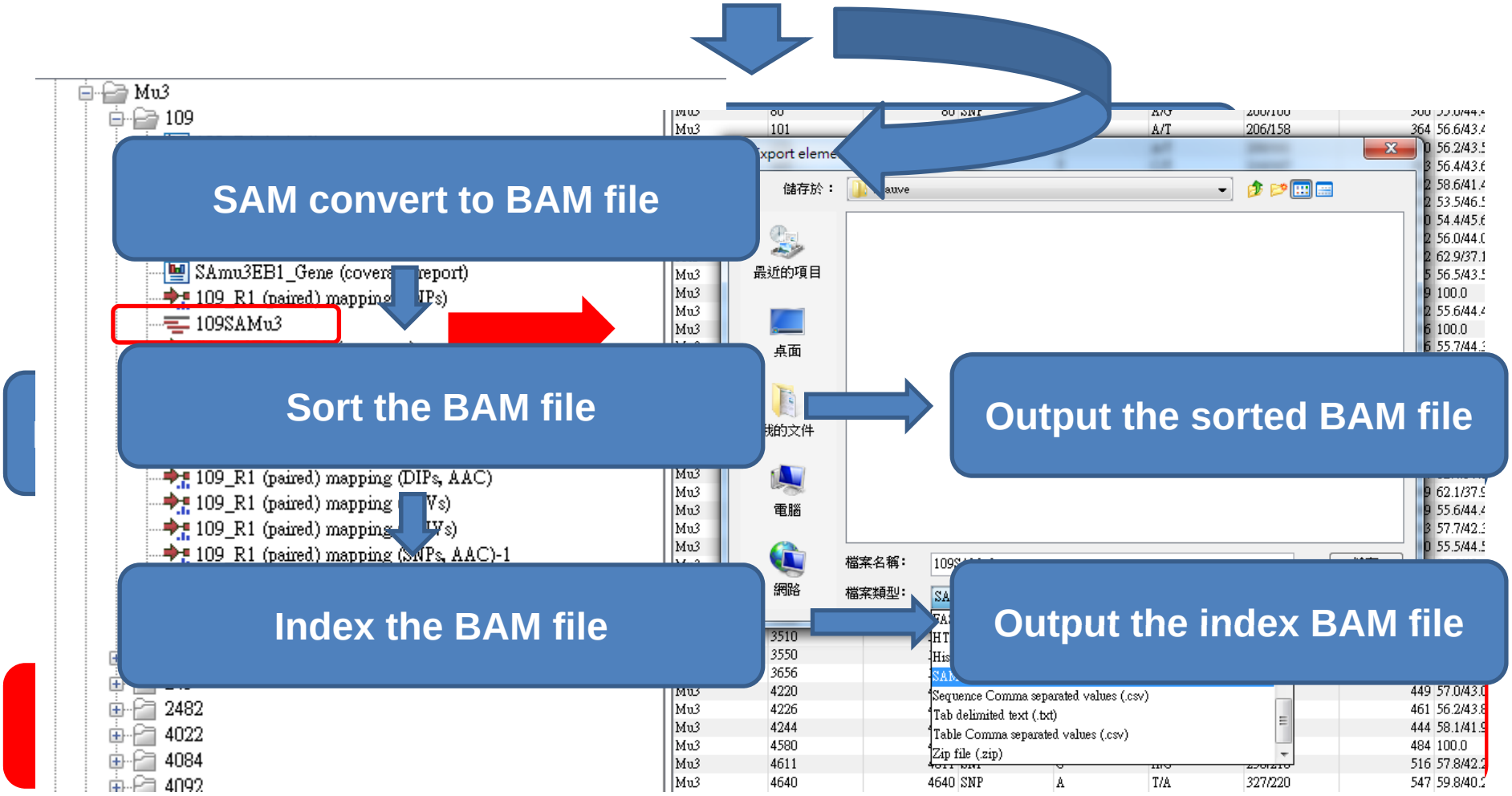
SAM convert to BAM file

Sort the BAM file

Output the sorted BAM file

Index the BAM file

Output the index BAM file





Download SAM file : http://163.25.92.70/class

SAM convert to BAM file

samtools view –bS (SAM) –T (Reference) –o (BAM)
ex : samtools view –bS demo1.sam –T SAmu50Ebl.fa –o demo1.bam

Sort the BAM file

samtools sort (BAM) (BAM.sorted)
ex : samtools sort demo1.bam demo1.sorted

Index the BAM file

samtools index (BAM.sorted)
ex : samtools index demo1.sorted

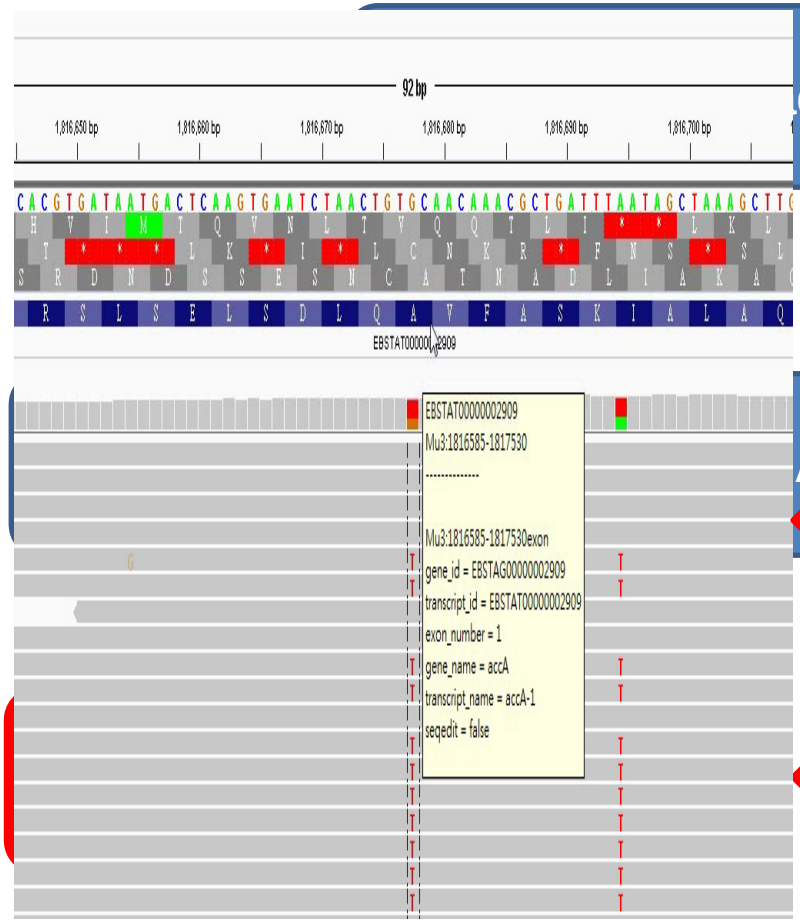
Download genome from Ensembl bacteria database

Integrative Genomics Viewer

ds to genc

AM)

U



Protein region	SNP/DIP reg	Gene nam	AAC	109 (se	205 (ns	243 (ns	2482 (s	4022 (S	4084 (S	4092 (S	9148 (S	總計
join(1810341..1811699,1	SNP1811653	aapA	Ala438Gly	1			1		1		1	4
join(1810341..1811699,1	SNP1811298	aapA	Ser320Thr	1			1		1		1	4
complement(join(181658	SNP1816677	accA	Ala285Glu	1			1		1		1	4
complement(join(181658	SNP1816717	accA	Val272Ile	1	1	1	1	1	1	1		8
complement(join(164557	SNP1645664	accB	Ala60Val	1					1		1	6
complement(join(164402	SNP1644732	accC	Ser216Asn	1					1			4
complement(join(181753	SNP1818105	accD	Leu95Ile	1					1		1	4
complement(join(183119	SNP1852117	ackA	His93Gln						1			1
complement(join(183119	SNP1852299	ackA	Ile33Val	1	1		1	1	1	1	1	7
complement(join(183119	SNP1852142	ackA	Val85Asp	1	1	1	1	1	1	1	1	8
complement(join(220107	SNP2201177	acpS	Leu85Phe	1			1		1		1	4
complement(join(220107	SNP2201384	acpS	Lys16Gln	1	1	1		1		1		5
complement(join(220107	SNP2201380	acpS	Val17Ala	1	1	1		1		1		5
complement(join(185970	SNP1861249	acsA	Arg56Gly	1	1	1	1	1	1	1	1	8
complement(join(185970	SNP1860560	acsA	Gln285His	1			1		1		1	4
complement(join(185970	SNP1859863	acsA	Leu518Ile		1			1		1		3
complement(join(185970	SNP1861245	acsA	Leu57Ser	1			1		1		1	4
complement(join(185970	SNP1861210	acsA	Tyr69His	1	1	1	1	1	1	1	1	8
join(1861583..1862212,1	SNP1861855	acuA	Asn91Lys		1			1		1		3