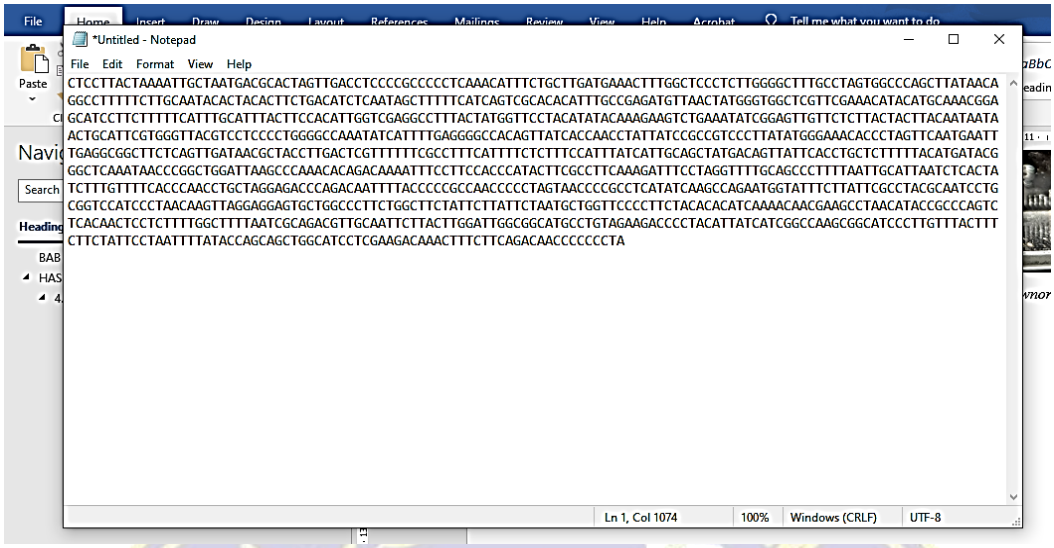
LAMPIRAN

Lampiran 1.1 Jadwal Pelaksanaan Penelitian

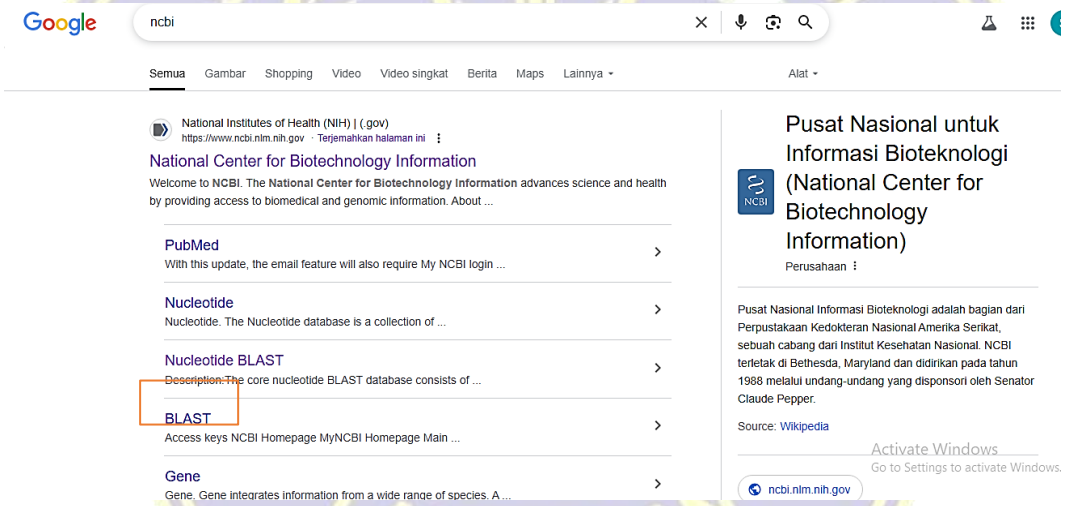
No	Kegiatan	Okt	Nov	Des	Jan	Feb	Mar	Apr	Mei	jun
1.	Pengajuan judul	■								
2.	Pengajuan Proposal		■	■						
3.	Seminar Proposal				■					
4.	Pengambilan Sampel							■		
5.	Proses Ekstraksi DNA								■	
6.	Analisis Data								■	■
7.	Sidang Skripsi									■

Lampiran 1.2 Sampel *Betta brownorum*

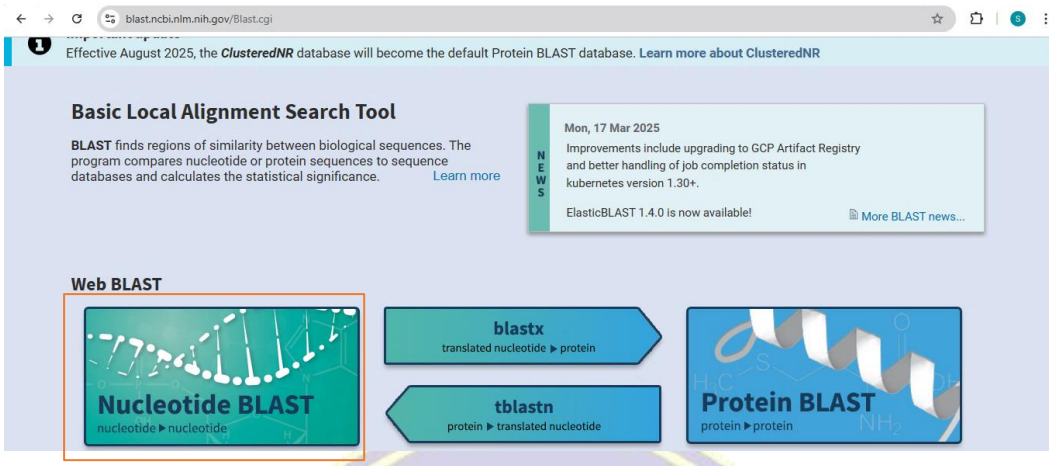
Lampiran 1.3 Cara kerja analisis komposisi nukleotida *Betta brownorum*



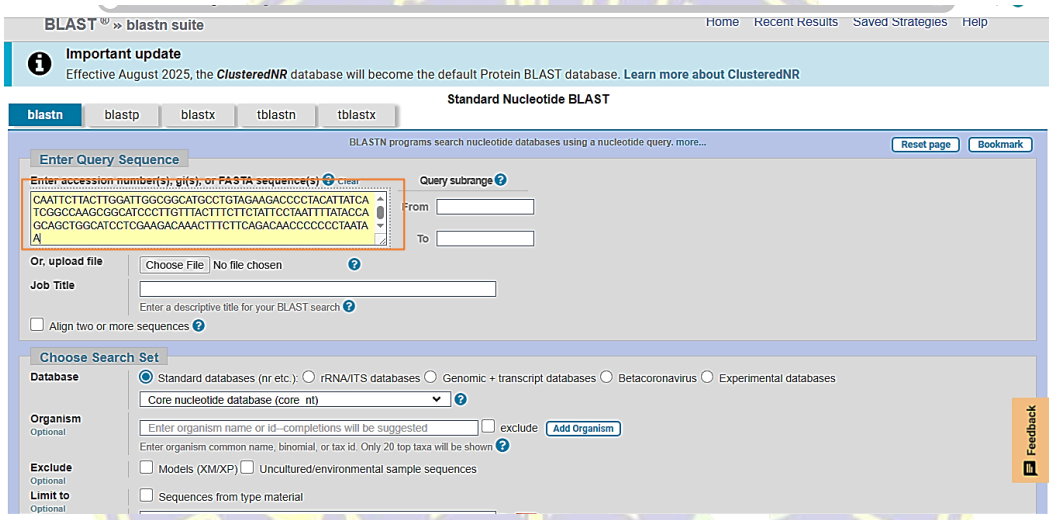
Keterangan: Membuka notepad lalu menyalin hasil sekuensing di lembar notepad



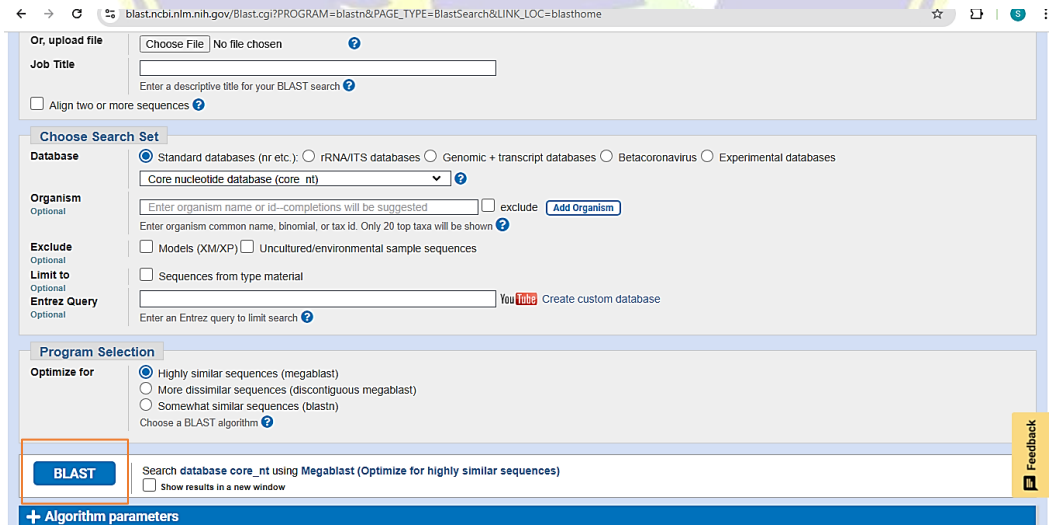
Keterangan: Membuka Google lalu menuliskan https://www.ncbi.nlm.nih.gov, kemudian memilih BLAST.



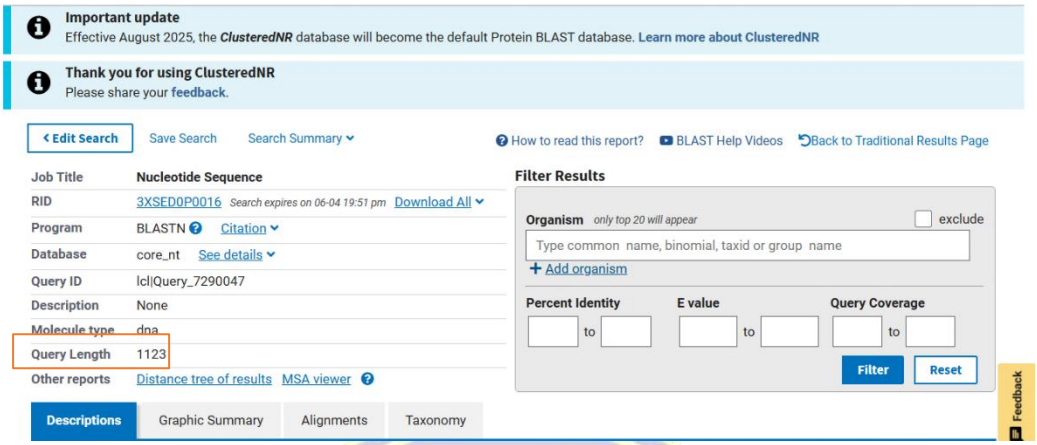
Keterangan: Memilih menu Nukleotide BLAST.



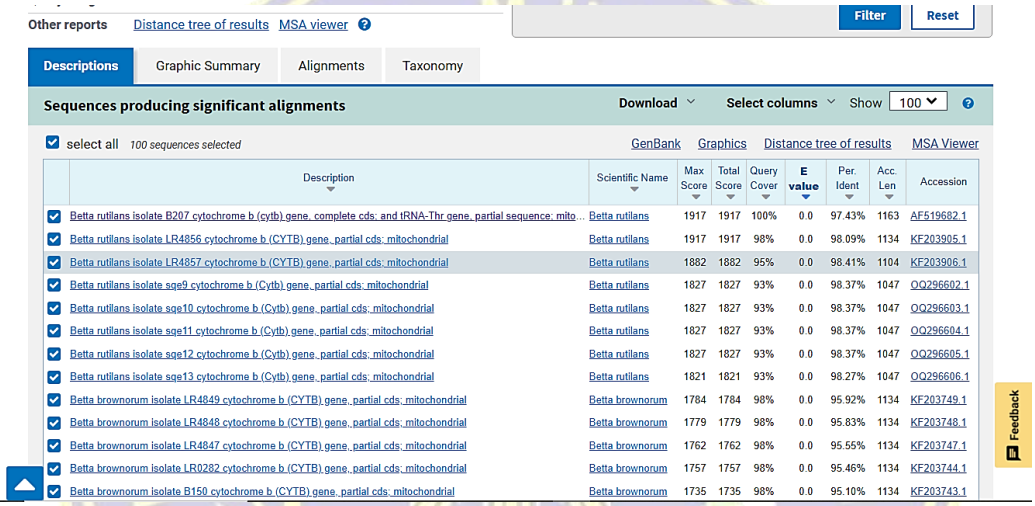
Keterangan: Menyalin hasil sekuensing di kolom pencarian.



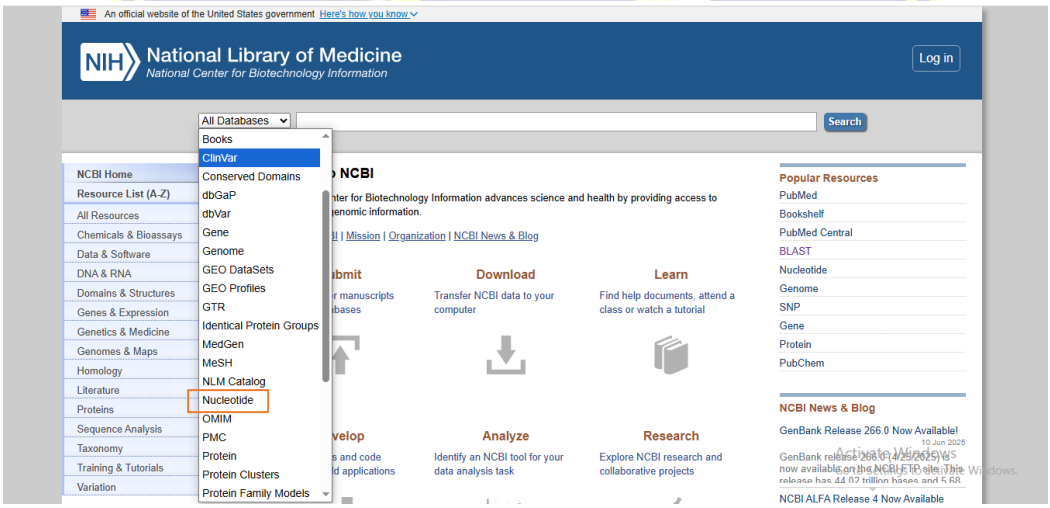
Keterangan: Mengklik BLAST.



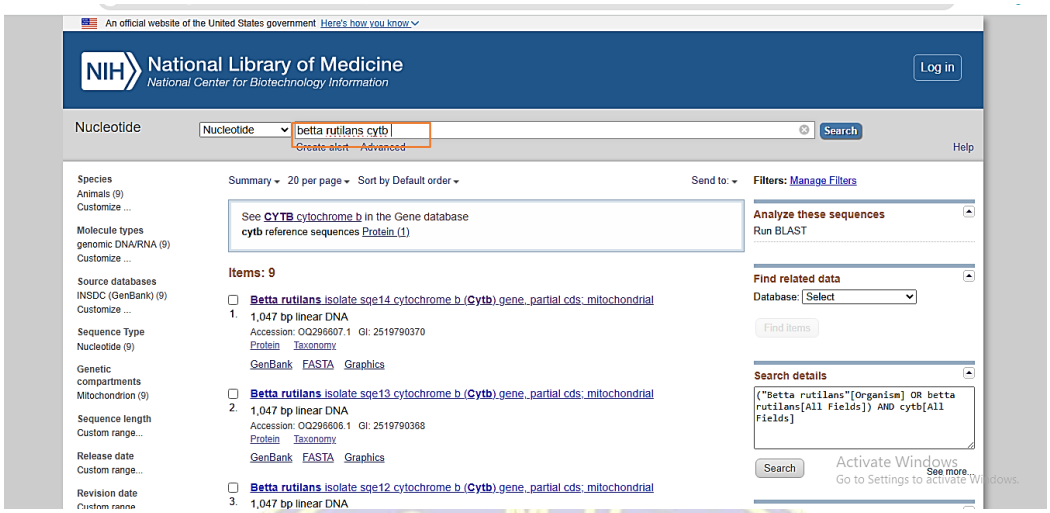
Keterangan: Mendapatkan hasil panjang nukleotida



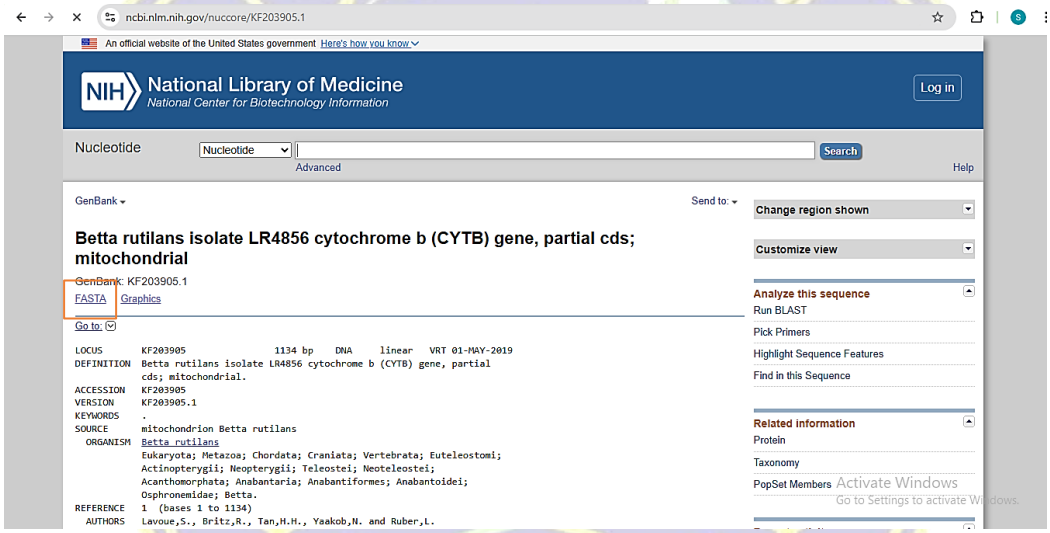
Keterangan: Menggeser halaman ke bawah lalu menyalin Accession yang dikehendaki



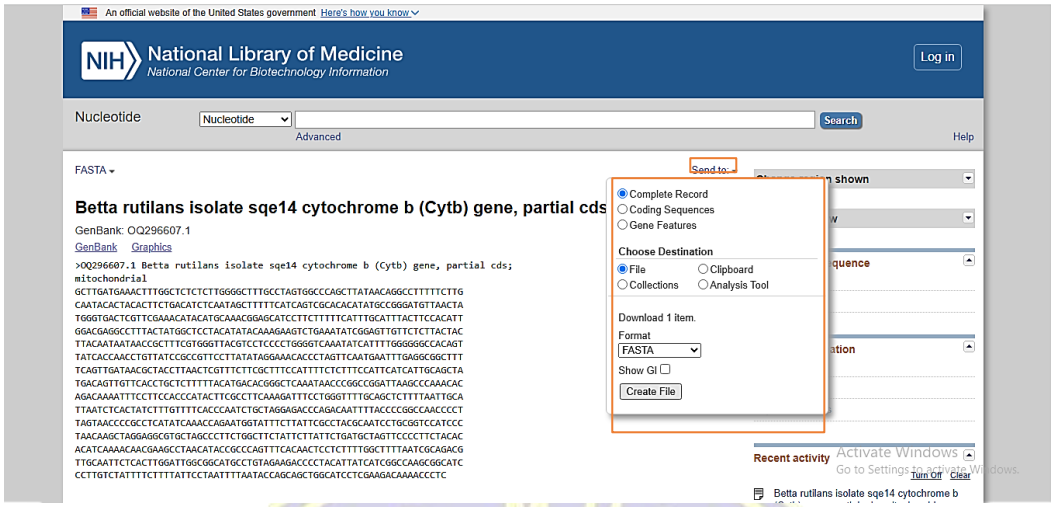
Keterangan: Membuka Google lalu menuliskan ncbi.nlm.nih.gov , lalu mengganti all databases menjadi nucleotides.



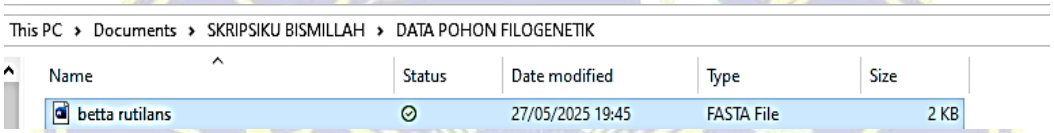
Keterangan: Menulis nama spesies yang dicari pada kolom pencarian lalu menyalin Accession



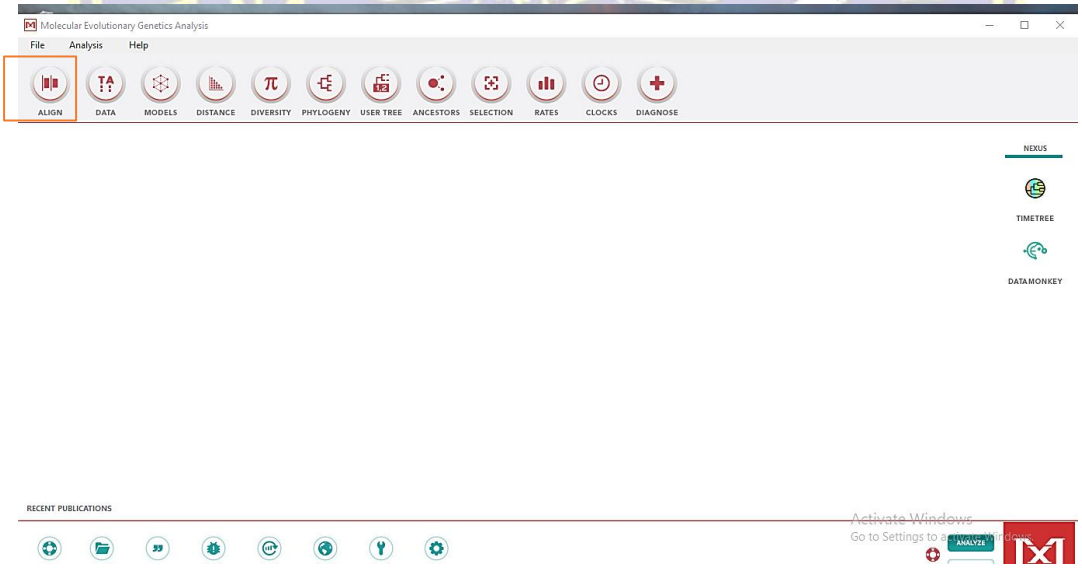
Keterangan: Menyalin Accession pada kolom pencarian lalu mengklik FASTA



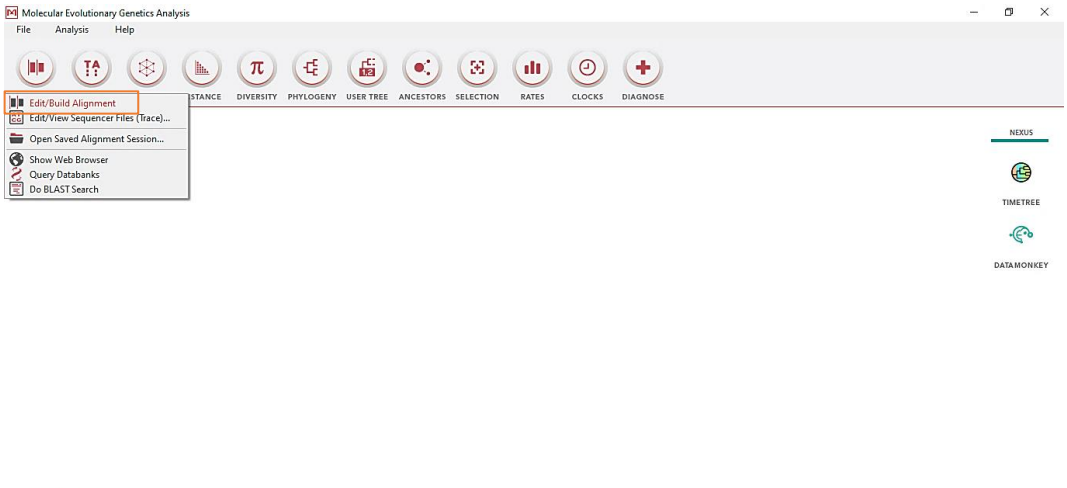
Keterangan: Memilih Send to, Complete Record, File, dan menyimpannya dalam format FASTA kemudian klik Create file



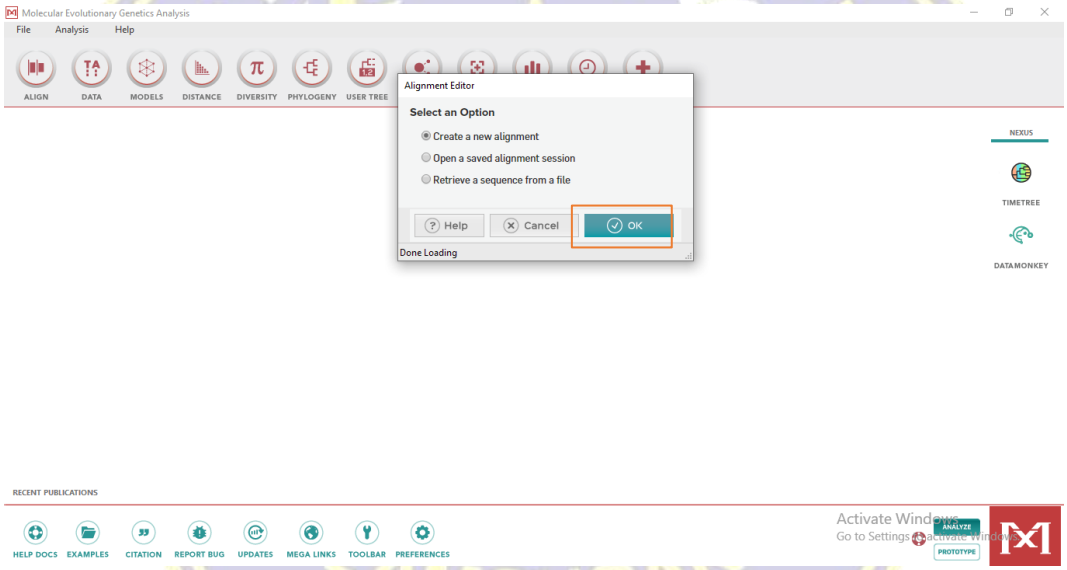
Keterangan: Menyimpan file dengan format fasta dan memberikan nama sesuai dengan nama spesies.



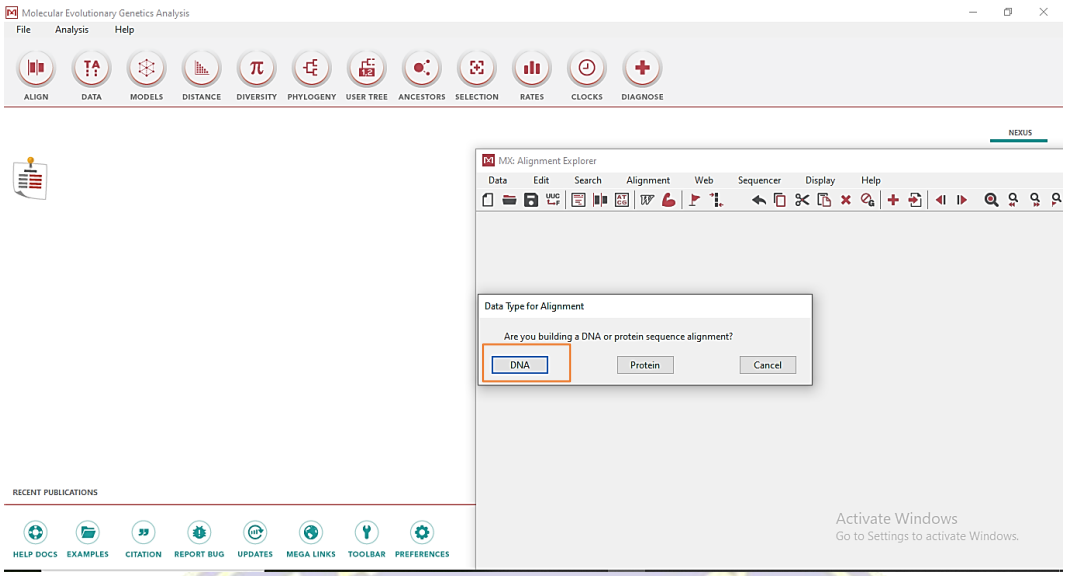
Keterangan: Buka aplikasi MEGA 10 dan memilih menu Align.



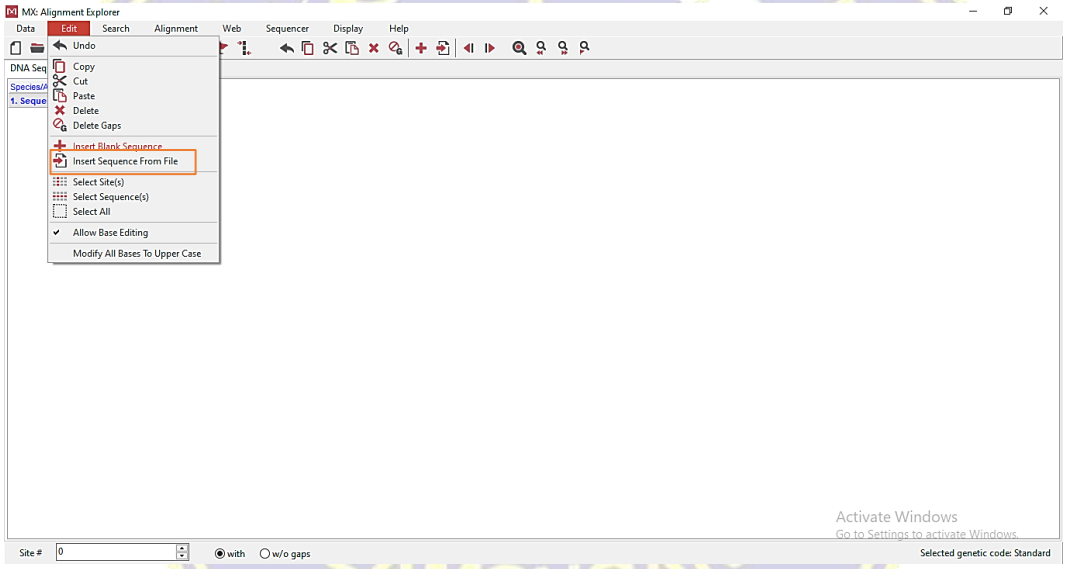
Keterangan: Memilih Edit/Build Alignment



Keterangan: Pilih Create a new alignment lalu OK

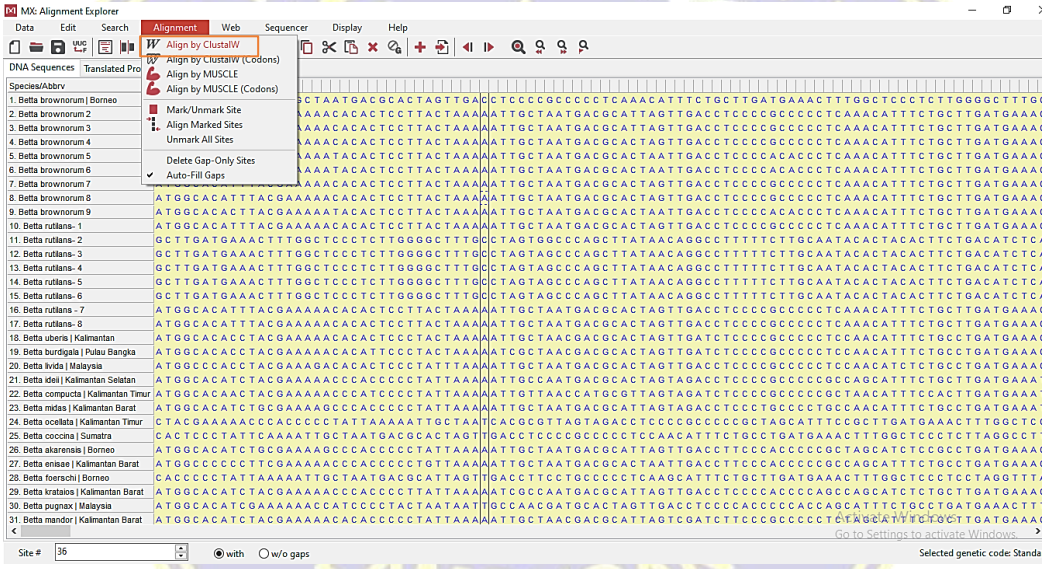


Keterangan: Memilih pilihan DNA

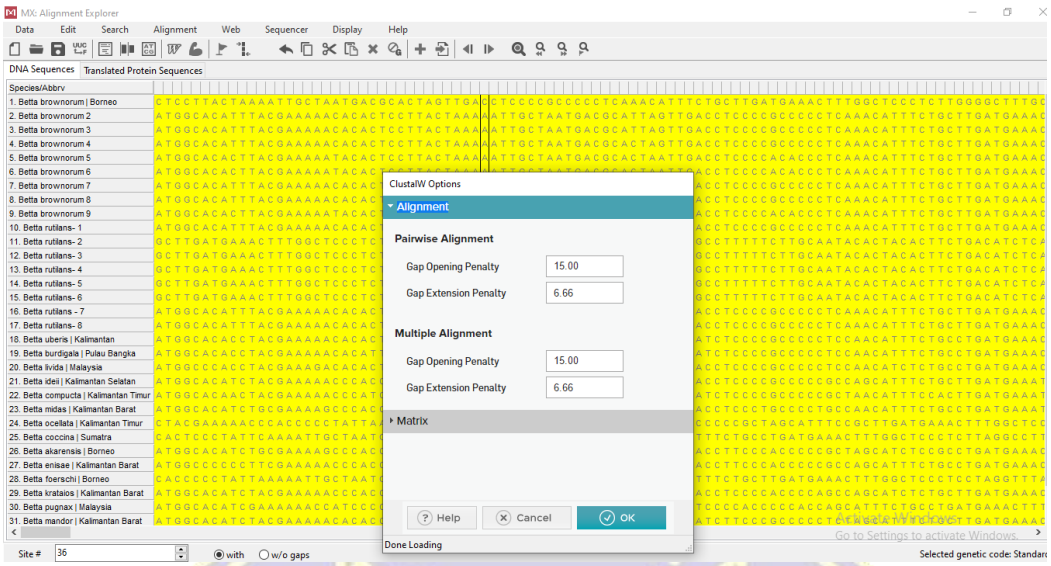


Keterangan: Memilih menu edit lalu memilih Insert Sequences From File lalu pilih file sekuens dengan format FASTA.

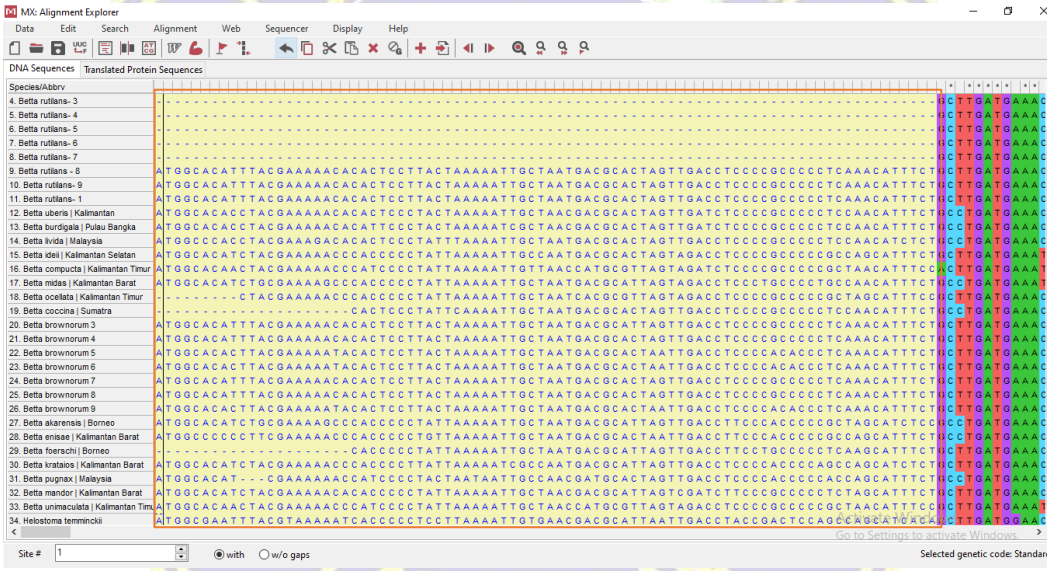
Keterangan: Memilih menu Alignment



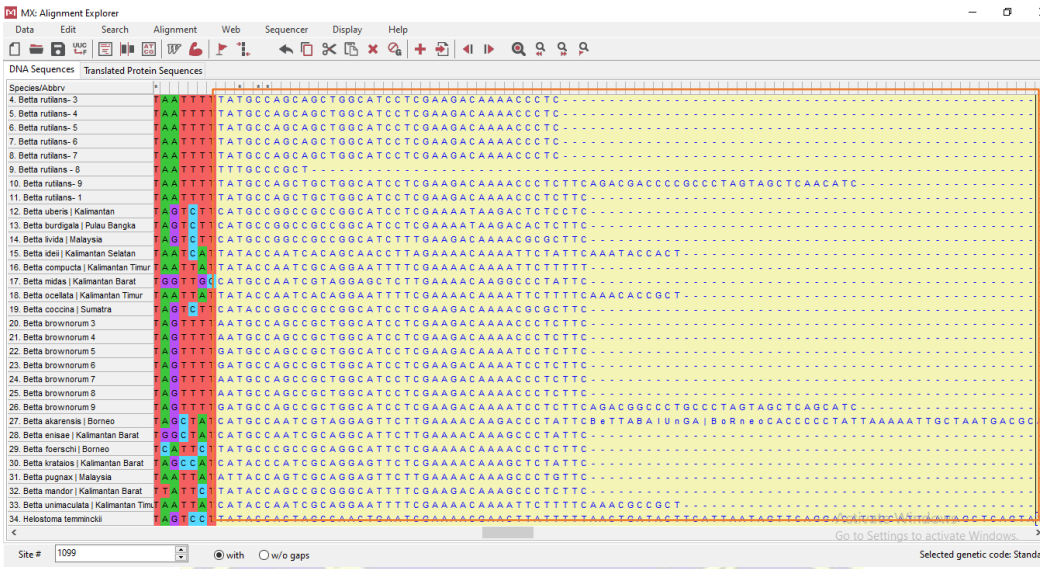
Keterangan : Mengklik kiri sekali pada salah satu basa nukleotida lalu mengklik Ctrl+A, lalu memilih Align by ClustalW.



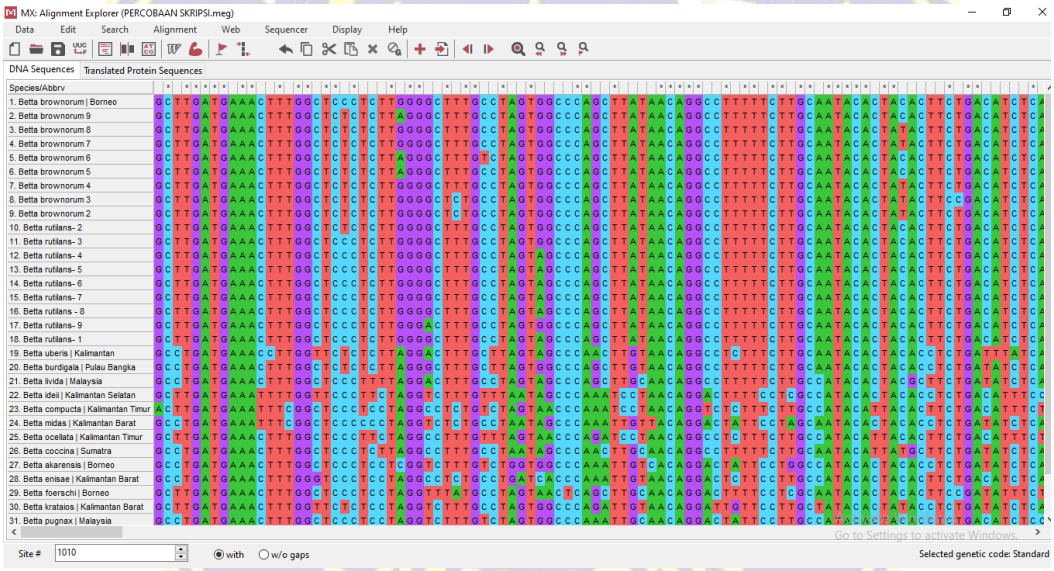
Keterangan: Mengklik OK.



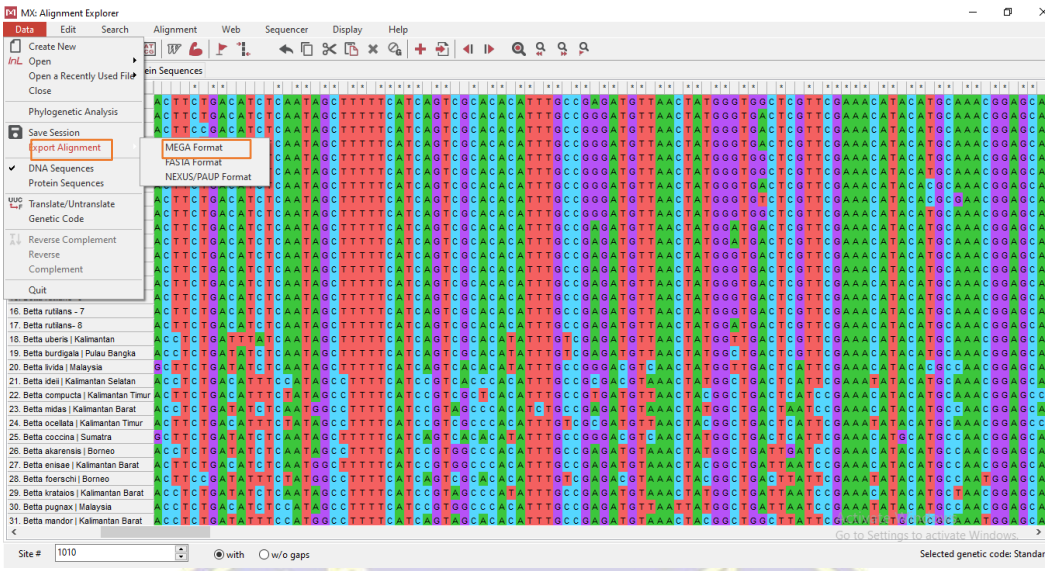
Keterangan: Memangkas kolom yang tidak terisi basa nukleotida di ujung kiri



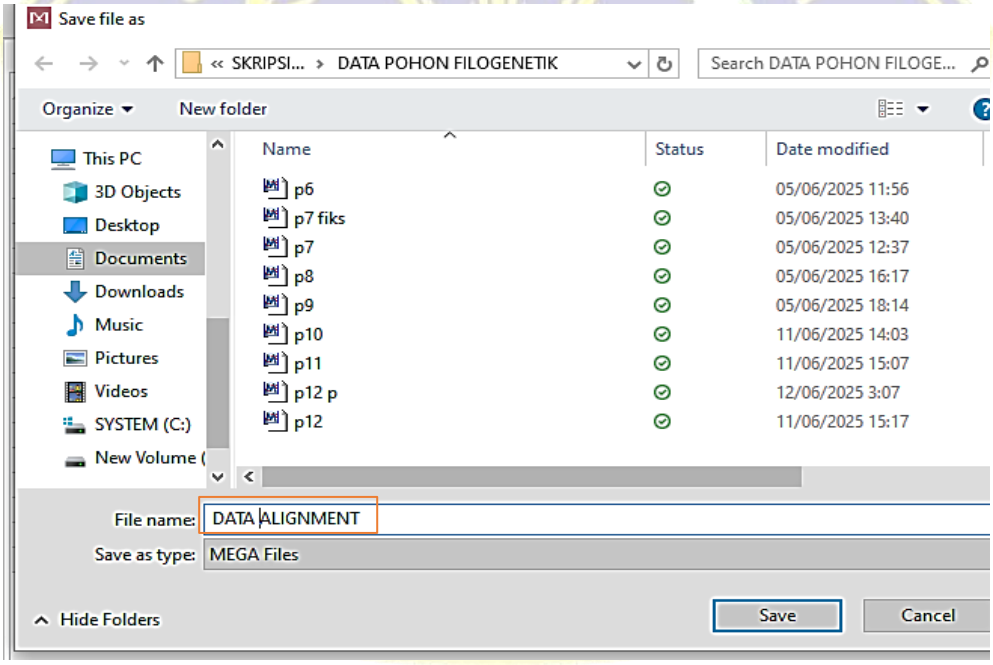
Keterangan: Memangkas kolom yang tidak terisi basa nukleotida di ujung kanan.



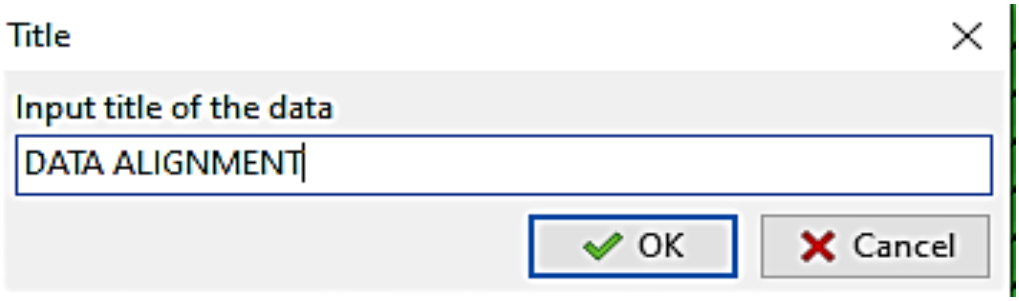
Keterangan: Hasil pensejajaran yang akan digunakan untuk analisis filogenetik, komposisi nukleotida, dan jarak genetik.



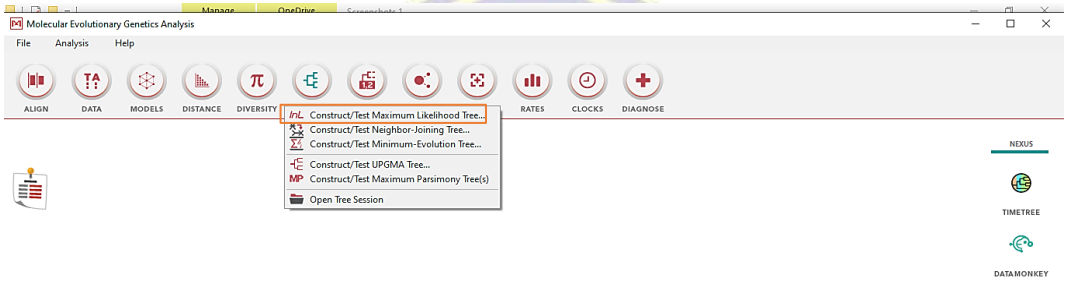
Keterangan: Memilih menu Data lalu Export Alignment dan memilih MEGA format.



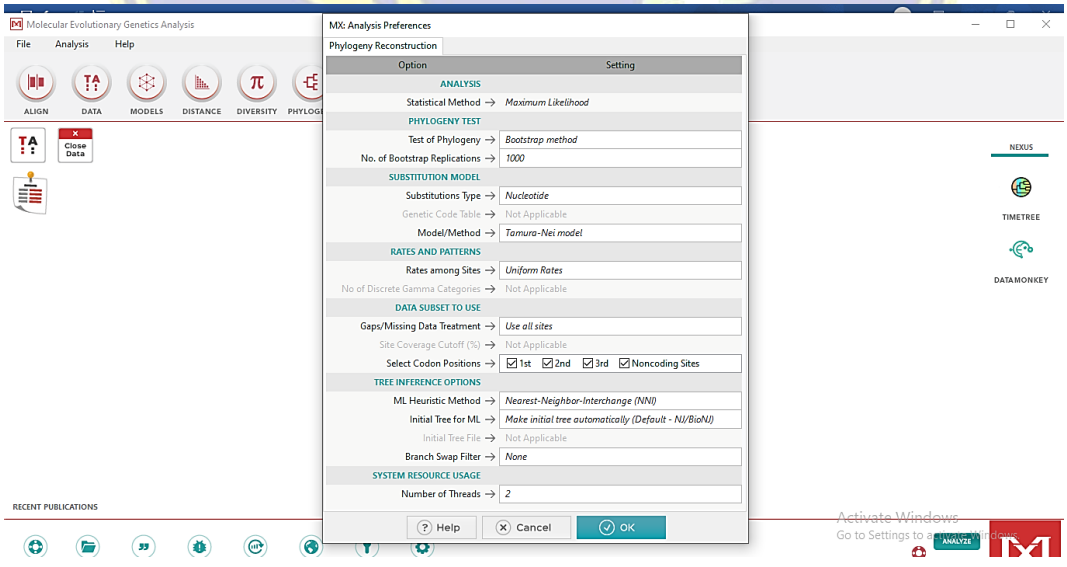
Keterangan: Memberikan nama pada hasil pensejajaran dengan format MEGA lalu Save.



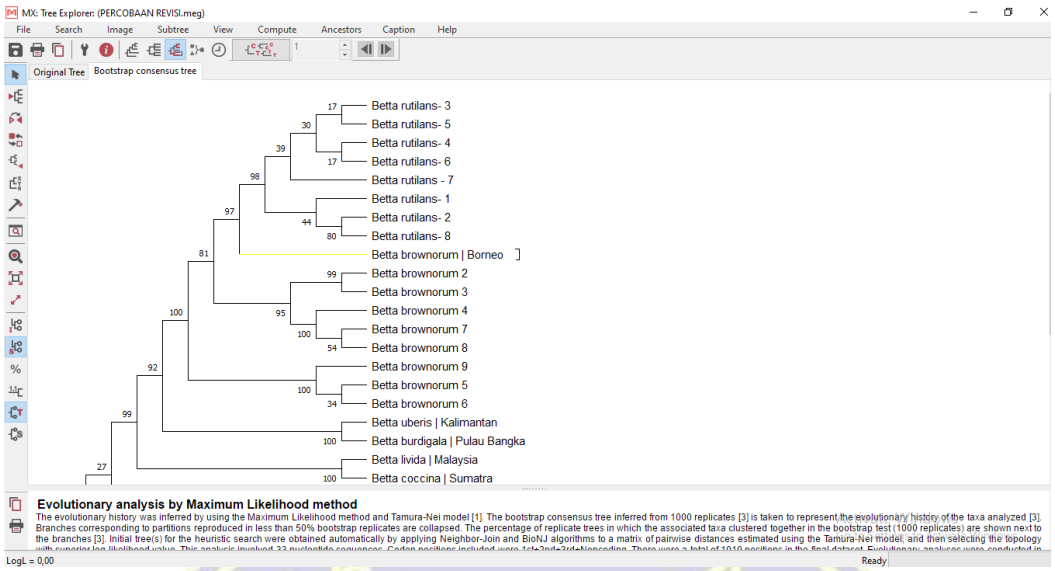
Keterangan: Menuliskan kembali nama hasil pensejajaran di kolom yang tersedia lalu OK.



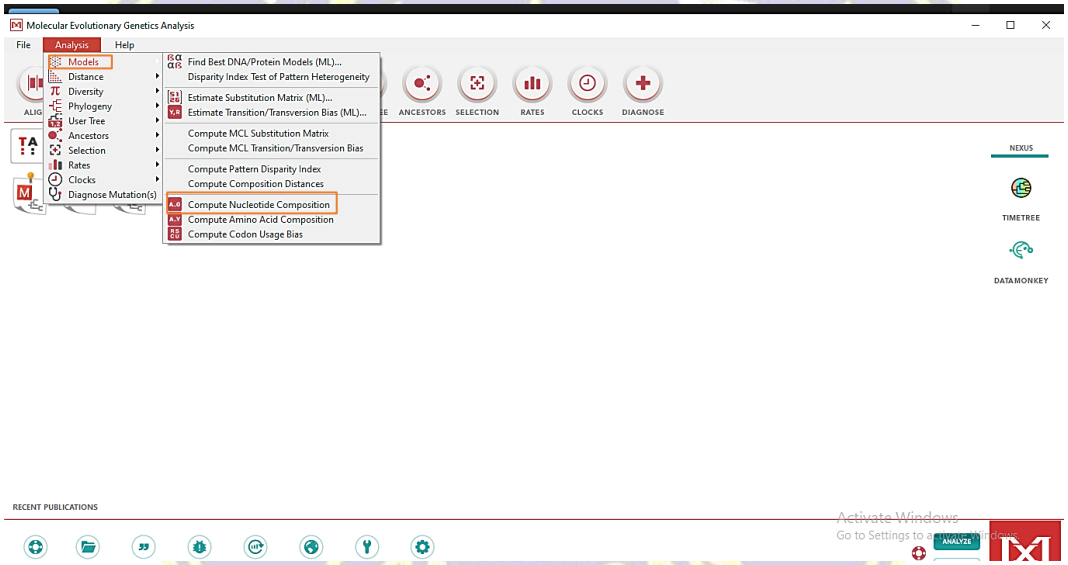
Keterangan: Memilih menu PHILOGENY lalu Construck/Test Maximum Likelihood Tree



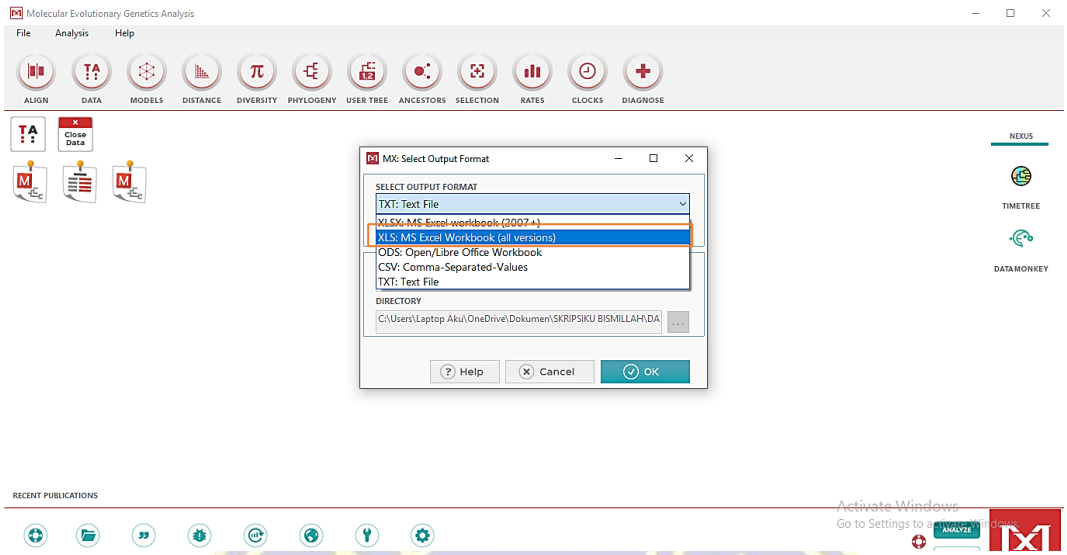
Keterangan: Mengatur Phylogeny Reconstruction seperti gambar di atas lalu OK



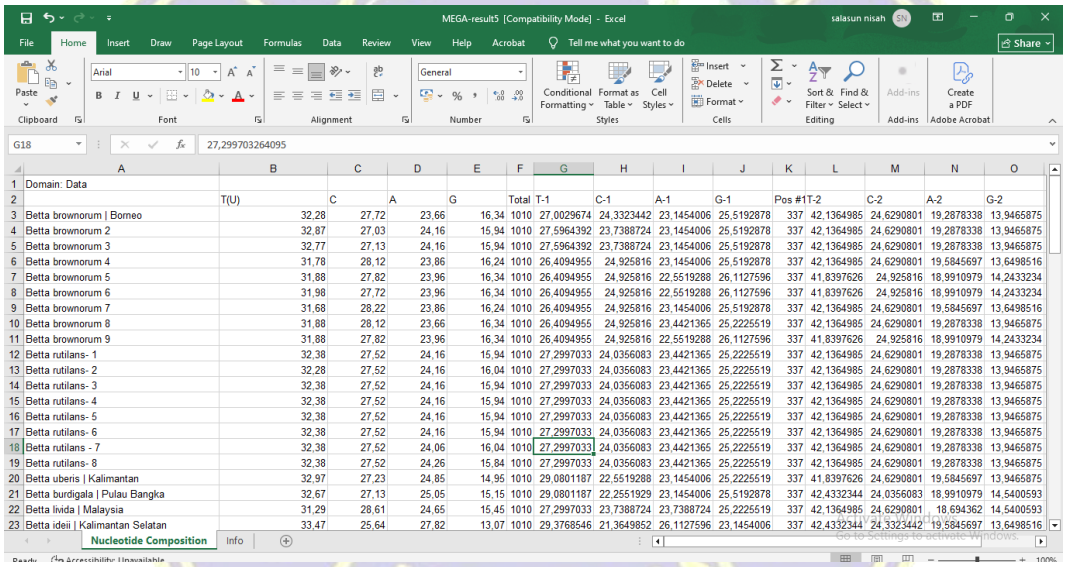
Keterangan: Hasil pohon filogenetika.



Keterangan : minimize hasil filogenetik, memilih menu Analysis lalu models kemudian memilih Compute Nucleotida composition.

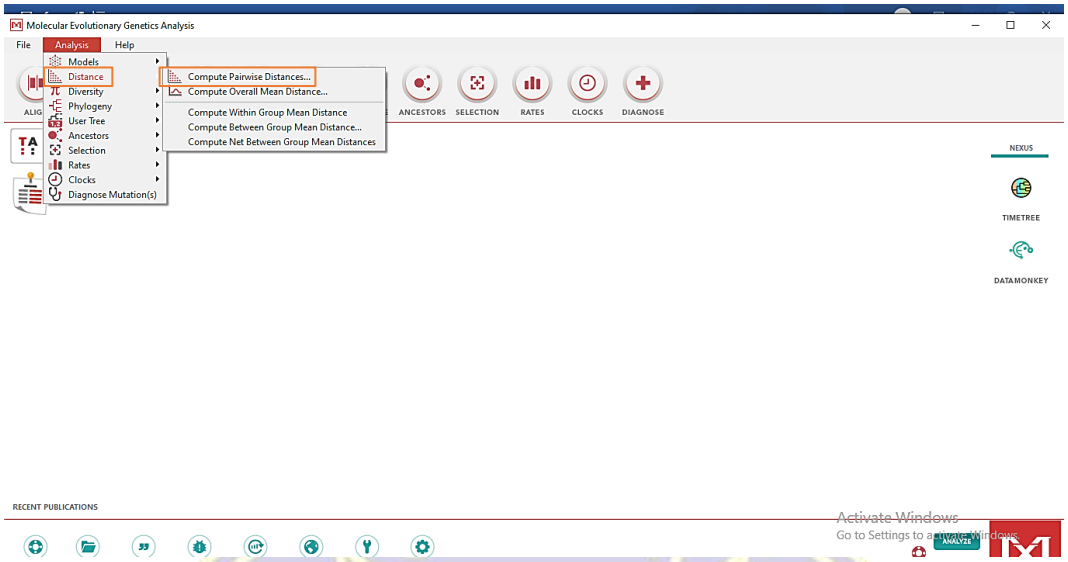


Keterangan: Memilih formas XLS lalu OK.

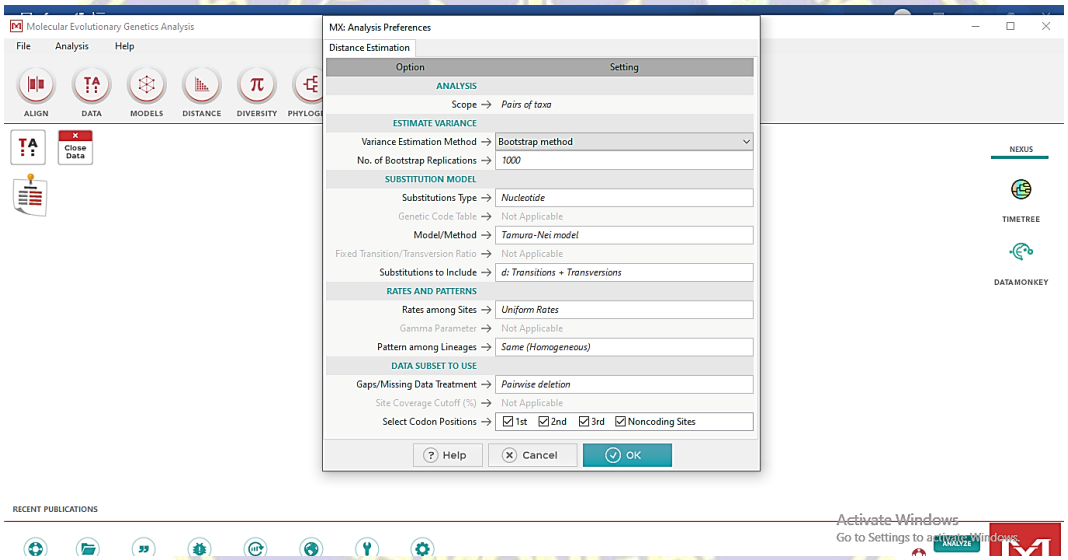


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Domain: Data														
2		T(U)	C	A	G	Total	T-1	C-1	A-1	G-1	Pos #1	T-2	C-2	A-2	G-2
3	Betta brownorum | Borneo	32,28	27,72	23,66	16,34	1010	27,0029674	24,3323442	23,1454006	25,5192878	337	42,1364985	24,6290801	19,2878338	13,9465875
4	Betta brownorum 2	32,87	27,03	24,16	15,94	1010	27,5964392	23,7388724	23,1454006	25,5192878	337	42,1364985	24,6290801	19,2878338	13,9465875
5	Betta brownorum 3	32,77	27,13	24,16	15,94	1010	27,5964392	23,7388724	23,1454006	25,5192878	337	42,1364985	24,6290801	19,2878338	13,9465875
6	Betta brownorum 4	31,78	28,12	23,86	16,24	1010	26,4094955	24,925816	23,1454006	25,5192878	337	42,1364985	24,6290801	19,5845697	13,6498516
7	Betta brownorum 5	31,88	27,82	23,96	16,34	1010	26,4094955	24,925816	22,5519288	26,1127596	337	41,8397626	24,925816	18,9910979	14,2433234
8	Betta brownorum 6	31,98	27,72	23,96	16,34	1010	26,4094955	24,925816	22,5519288	26,1127596	337	41,8397626	24,925816	18,9910979	14,2433234
9	Betta brownorum 7	31,68	28,22	23,86	16,24	1010	26,4094955	24,925816	23,1454006	25,5192878	337	42,1364985	24,6290801	19,5845697	13,6498516
10	Betta brownorum 8	31,88	28,12	23,66	16,34	1010	26,4094955	24,925816	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
11	Betta brownorum 9	31,88	27,82	23,96	16,34	1010	26,4094955	24,925816	22,5519288	26,1127596	337	41,8397626	24,925816	18,9910979	14,2433234
12	Betta rutilans- 1	32,38	27,52	24,16	15,94	1010	27,2997033	24,0356083	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
13	Betta rutilans- 2	32,28	27,52	24,16	16,04	1010	27,2997033	24,0356083	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
14	Betta rutilans- 3	32,38	27,52	24,16	15,94	1010	27,2997033	24,0356083	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
15	Betta rutilans- 4	32,38	27,52	24,16	15,94	1010	27,2997033	24,0356083	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
16	Betta rutilans- 5	32,38	27,52	24,16	15,94	1010	27,2997033	24,0356083	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
17	Betta rutilans- 6	32,38	27,52	24,16	15,94	1010	27,2997033	24,0356083	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
18	Betta rutilans - 7	32,38	27,52	24,06	16,04	1010	27,2997033	24,0356083	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
19	Betta rutilans- 8	32,38	27,52	24,26	15,84	1010	27,2997033	24,0356083	23,4421365	25,2225519	337	42,1364985	24,6290801	19,2878338	13,9465875
20	Betta uberis | Kalimantan	32,97	27,23	24,85	14,95	1010	29,0801187	22,5519288	23,1454006	25,2225519	337	41,8397626	24,6290801	19,5845697	13,9465875
21	Betta burdigala | Pulau Bangka	32,67	27,13	25,05	15,15	1010	29,0801187	22,2551929	23,1454006	25,5192878	337	42,4332344	24,0356083	18,9910979	14,5400593
22	Betta livida | Malaysia	31,29	28,61	24,65	15,45	1010	27,2997033	23,7388724	23,7388724	25,2225519	337	42,1364985	24,6290801	18,694362	14,5400593
23	Betta ideii | Kalimantan Selatan	33,47	25,64	27,82	13,07	1010	29,3768546	21,3649852	26,1127596	23,1454006	337	42,4332344	24,3323442	19,5845697	13,6498516

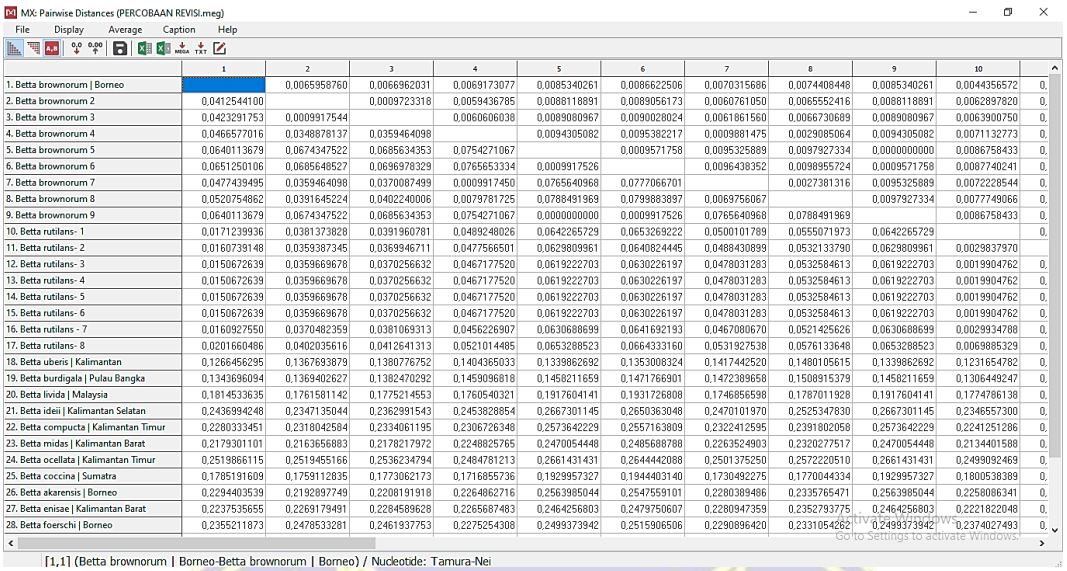
Keterangan: Hasil komposisi nukleotida



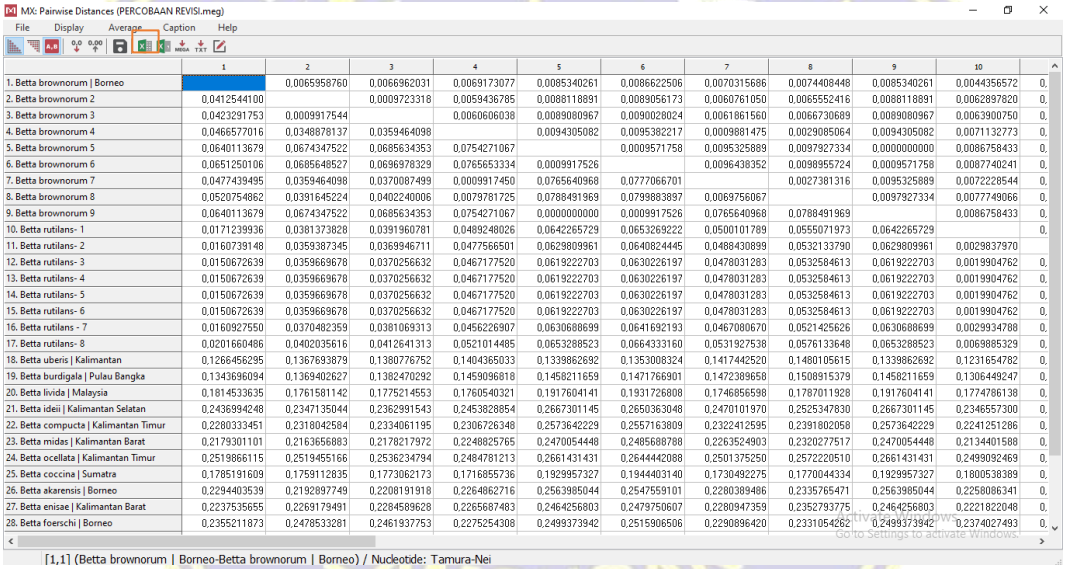
Keterangan: Minimize hasil komposisi nukleotida, memilih menu Analysis lalu Distance kemudian Compute Pairwise Distances.



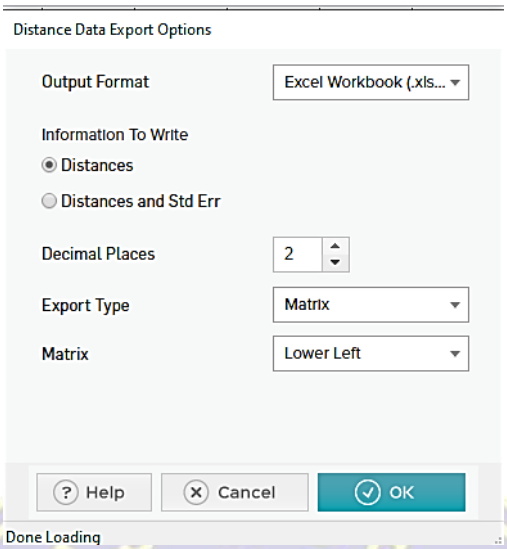
Keterangan: Mengisi format Distance Estimation sesuai dengan gambar di atas lalu OK.



Keterangan: Hasil jarak genetik.



Keterangan: Memilih icon Excel untuk menyimpan hasil jarak genetik



Keterangan: Mengatur Distance Data Export Options seperti gambar di atas.