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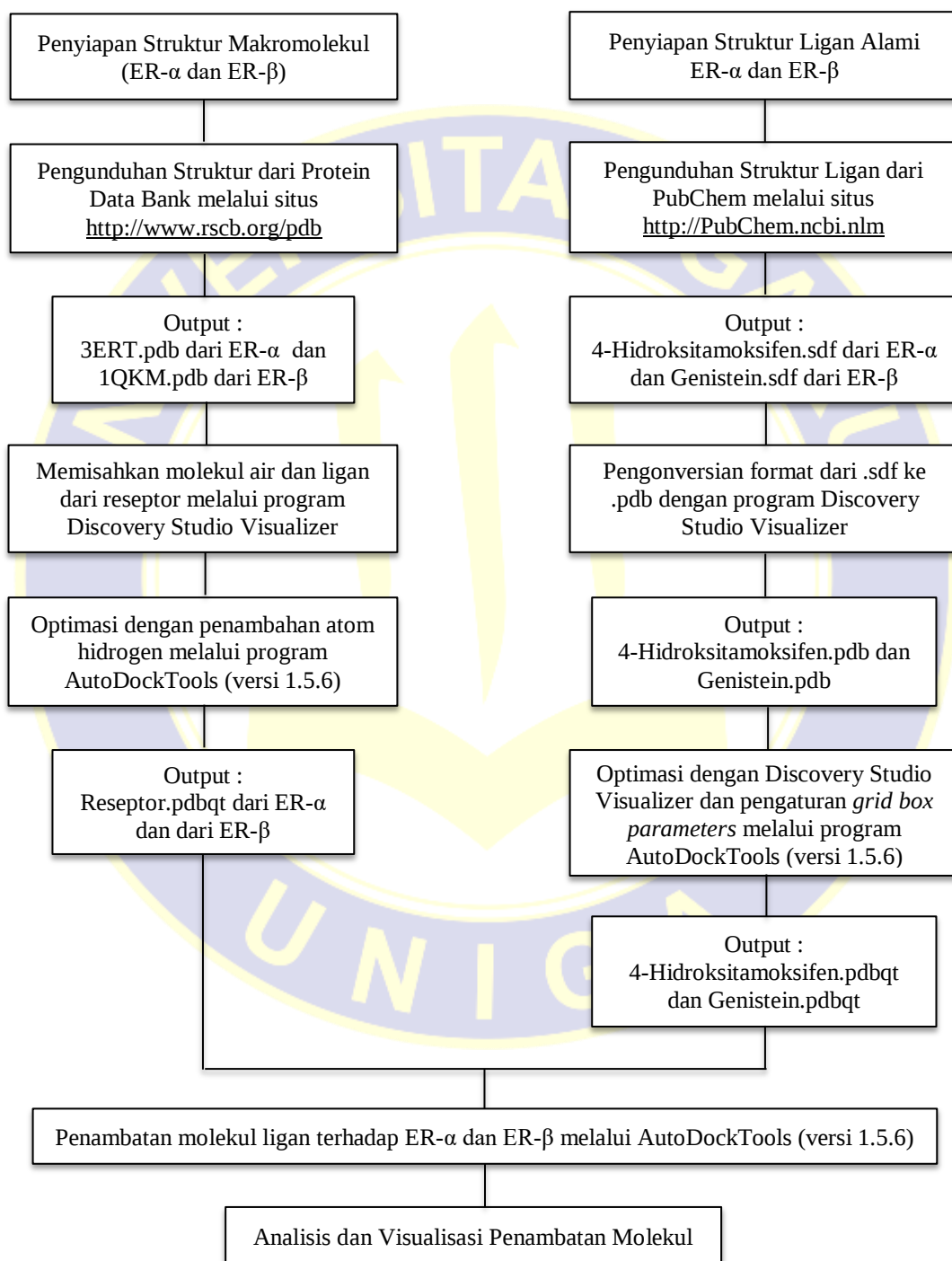
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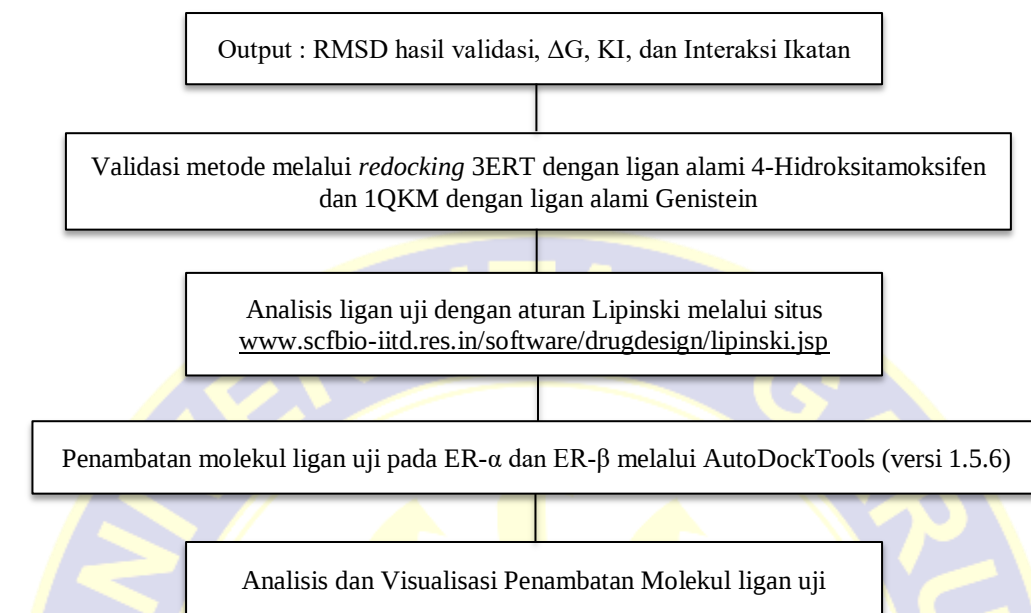
LAMPIRAN 1

SKEMA PENELITIAN



Gambar II.1 Skema penelitian penambatan molekul

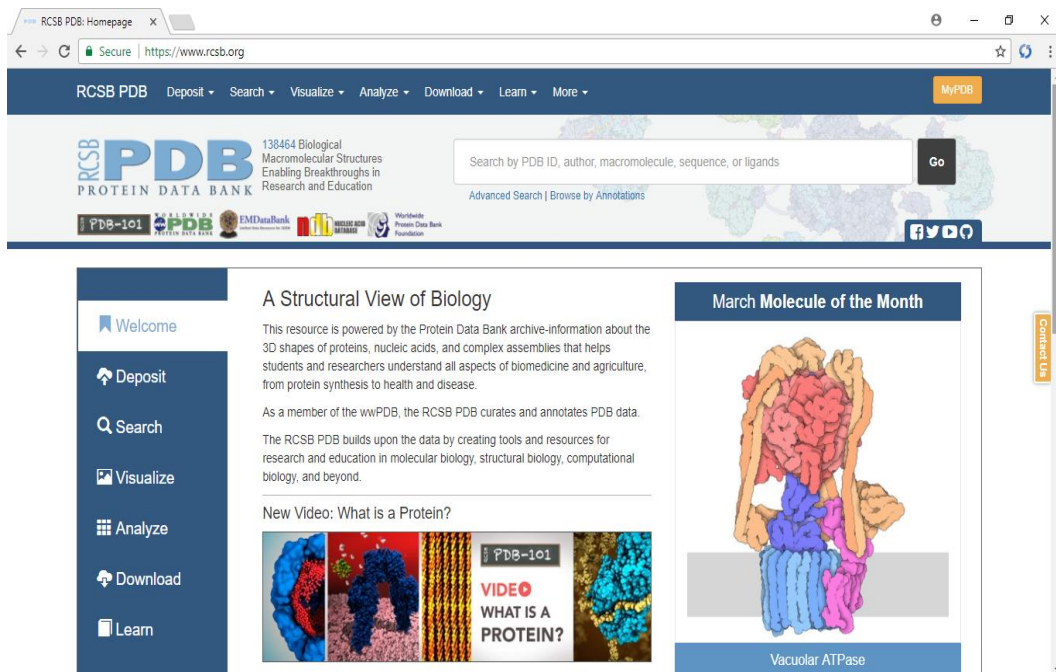
LAMPIRAN 1 (LANJUTAN)



Gambar II.1 (lanjutan)

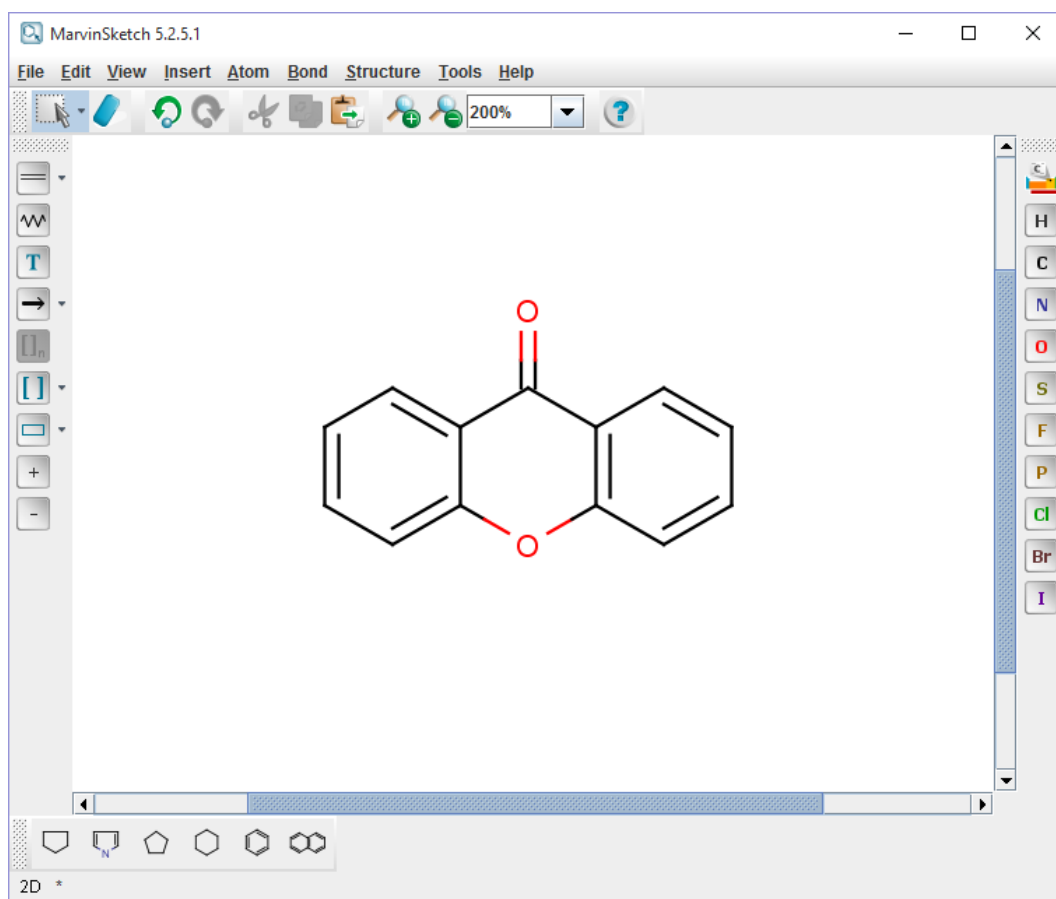
LAMPIRAN 2

PROTEIN DATA BANK



Gambar III.1 Tampilan Situs Protein Data Bank

LAMPIRAN 3
MARVINSKETCH (VERSI 5.2.5.1)

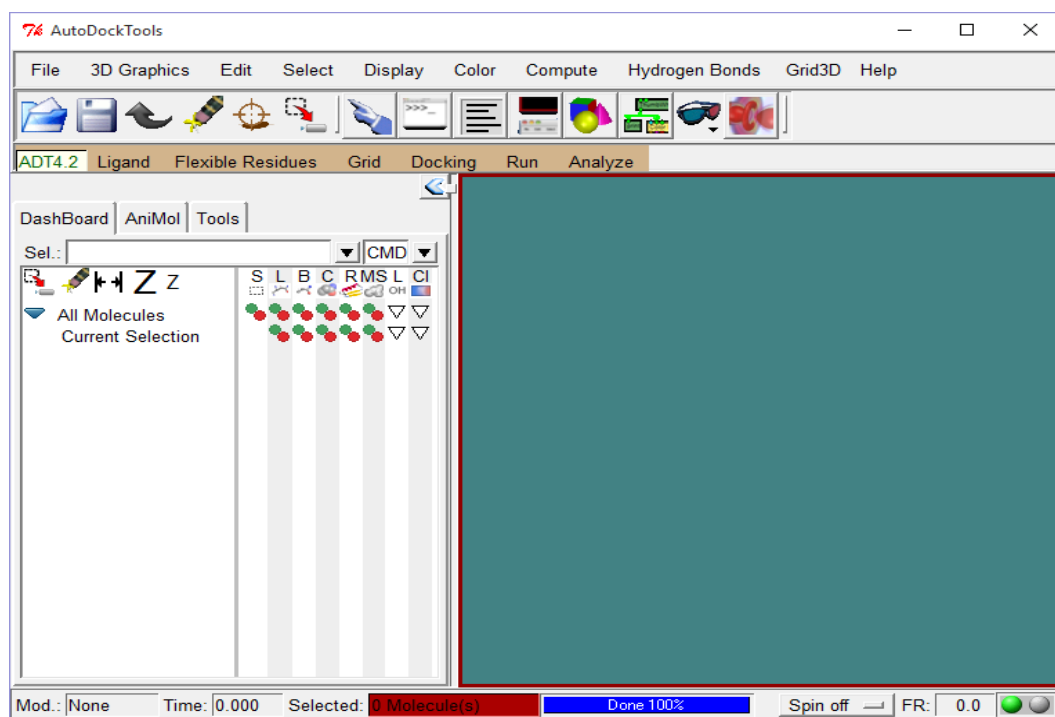


Gambar III.2 Tampilan Perangkat Lunak MarvinSketch (versi 5.2.5.1)

LAMPIRAN 4**PUBCHEM****Gambar III.3** Tampilan Situs PubChem

LAMPIRAN 5

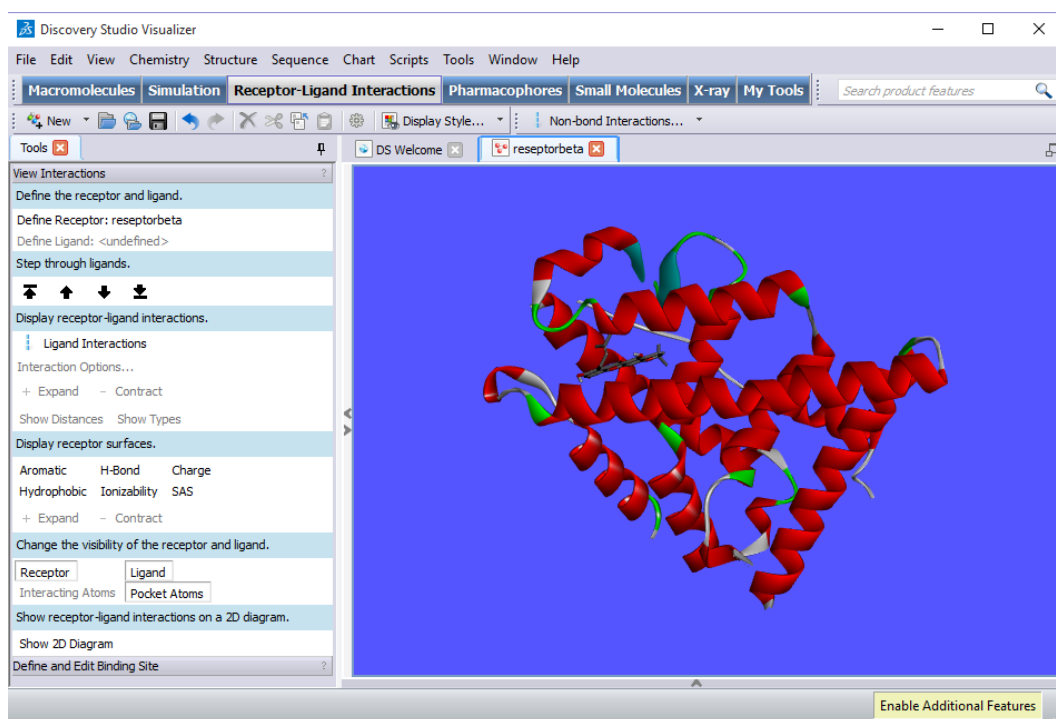
AUTODOCKTOOLS (VERSI 1.5.6)



Gambar III.4 Tampilan Perangkat Lunak AutoDockTools (versi 1.5.6)

LAMPIRAN 6

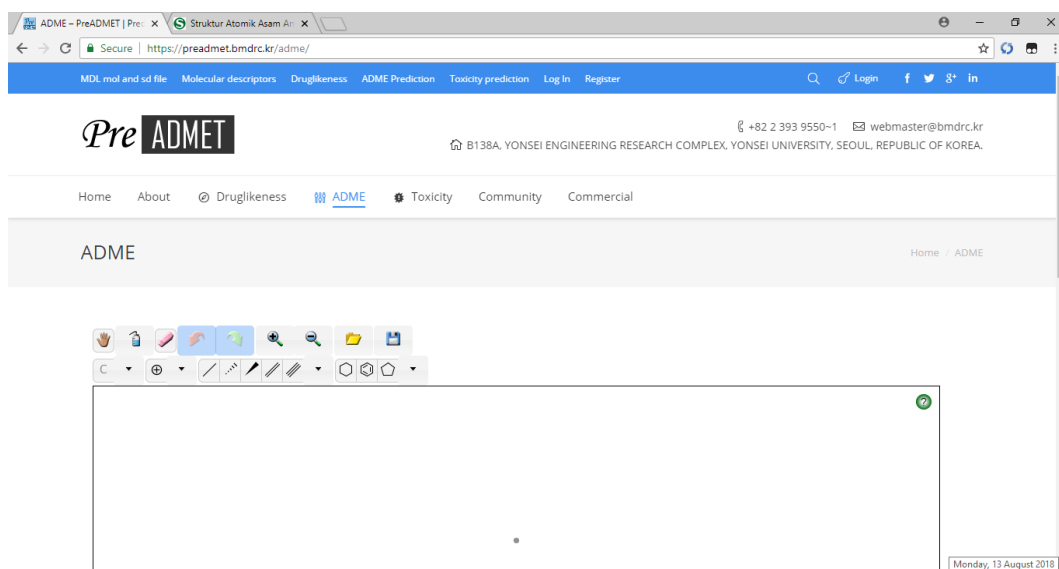
DISCOVERY STUDIO VISUALIZER



Gambar III.5 Tampilan Perangkat Lunak Discovery Studio Visualizer

LAMPIRAN 7

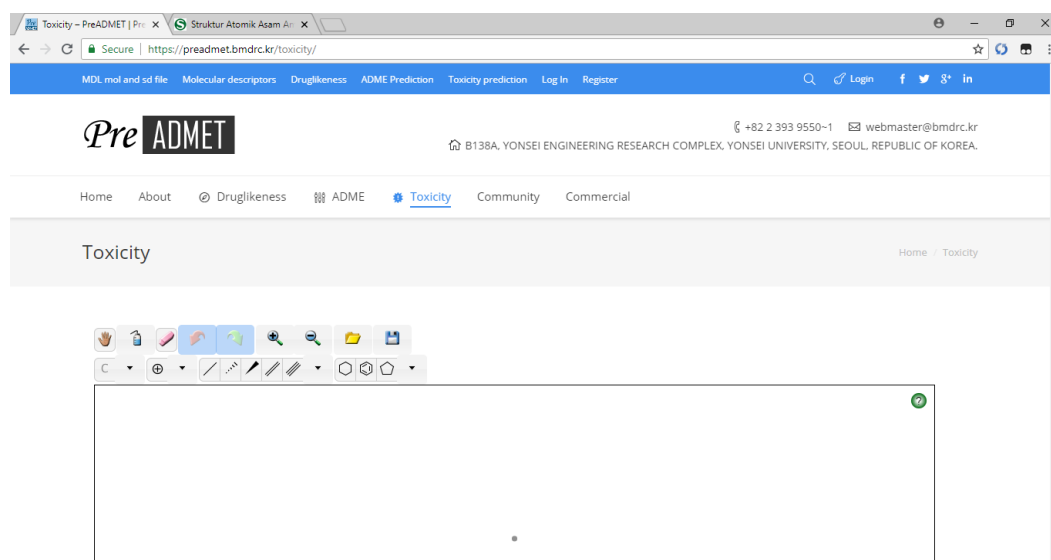
PRE-ADMET FARMAKOKINETIKA



Gambar III.6 Tampilan Situs Farmakokinetika

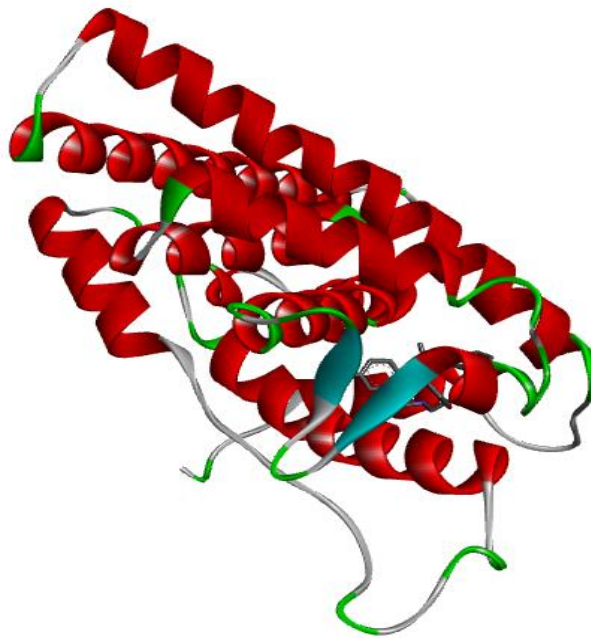
LAMPIRAN 8

PRE-ADMET TOKSISITAS

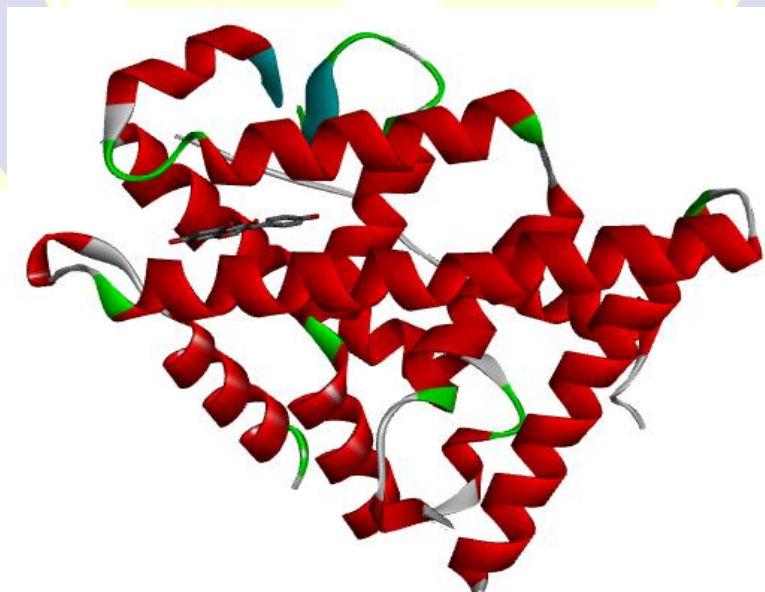


Gambar III.7 Tampilan Situs Toksisitas

LAMPIRAN 9
STRUKTUR 3D MAKROMOLEKUL



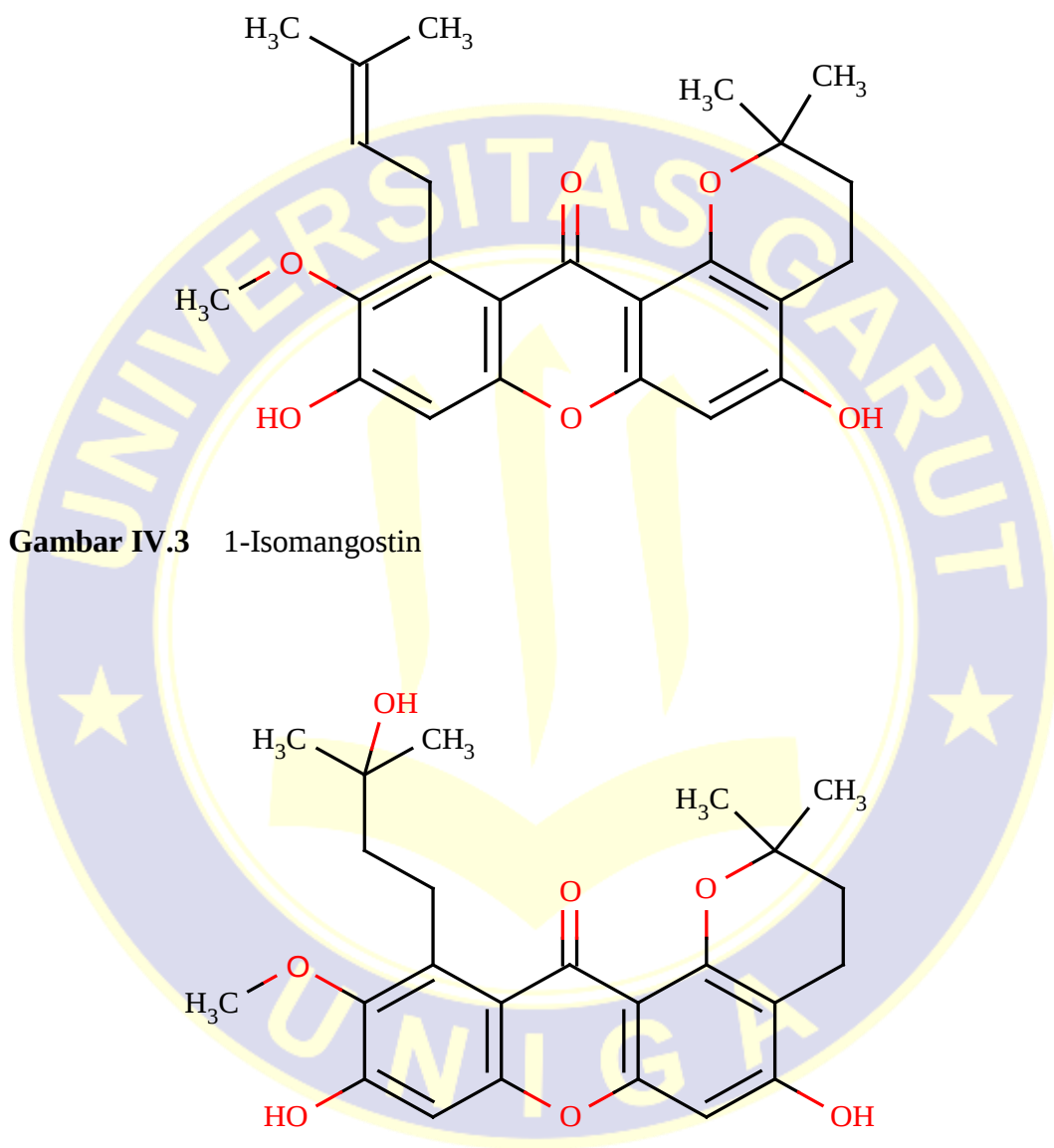
Gambar IV.1 Struktur ER- α tertambat 4-Hidroksitamoksifen ID 3ERT



Gambar IV.2 Struktur ER- β tertambat genistein ID 1QKM

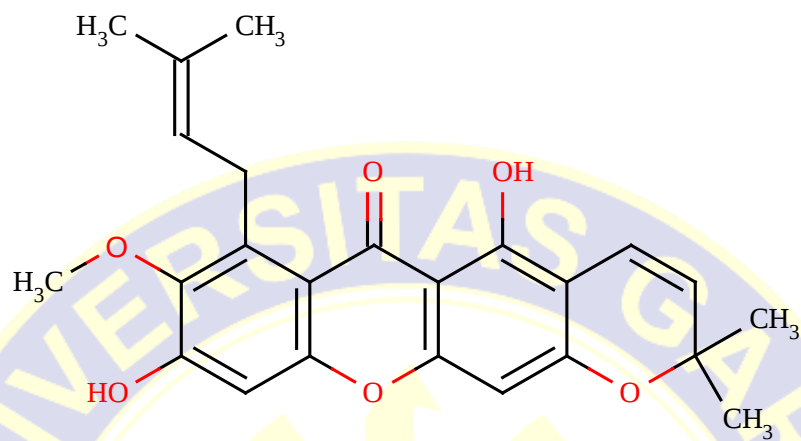
LAMPIRAN 10

STRUKTUR 2D LIGAN UJI TURUNAN XANTON

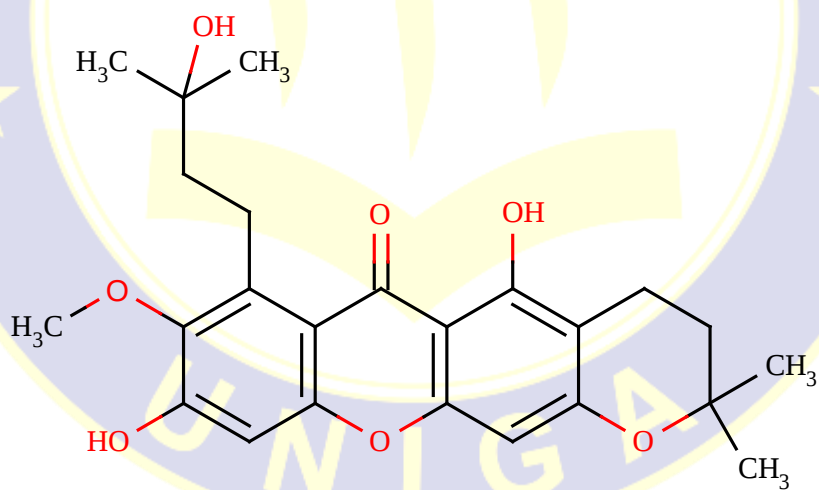


Gambar IV.4 1-Isomangostin Hidrat

**LAMPIRAN 10
(LANJUTAN)**

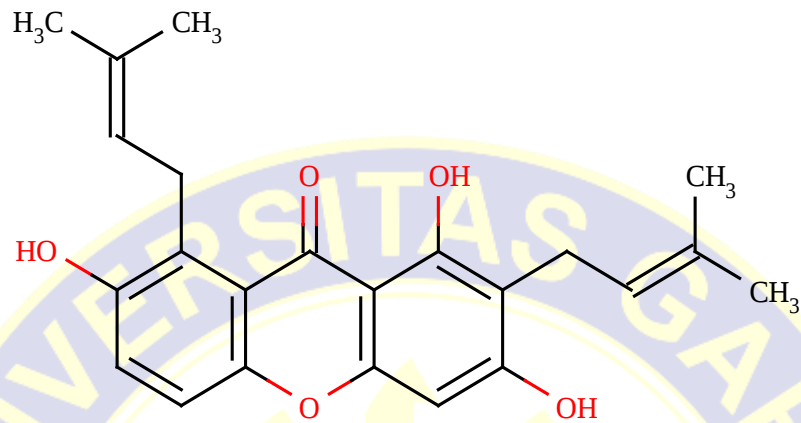


Gambar IV.5 3-Isomangostin

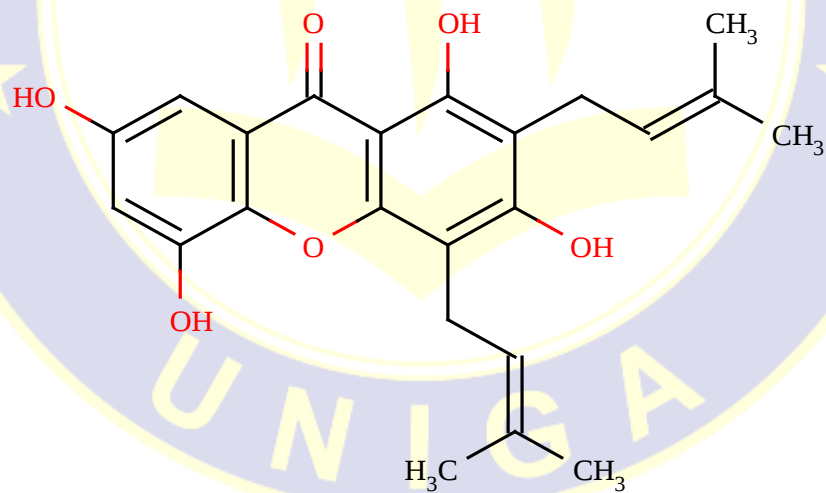


Gambar IV.6 3-Isomangostin Hidrat

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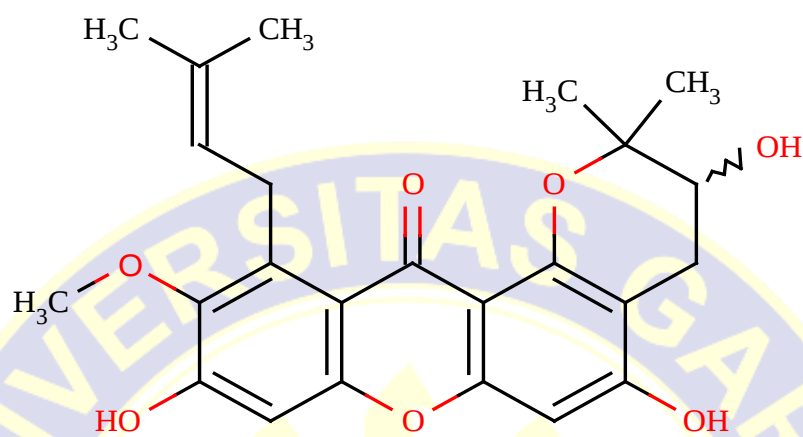


Gambar IV.7 6-Deoksi-γ-Mangostin

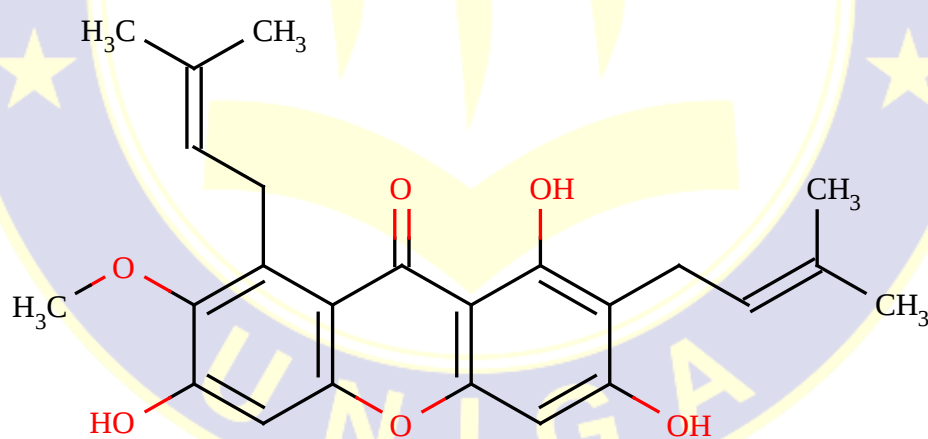


Gambar IV.8 8-Desoksiganartanin

LAMPIRAN 10
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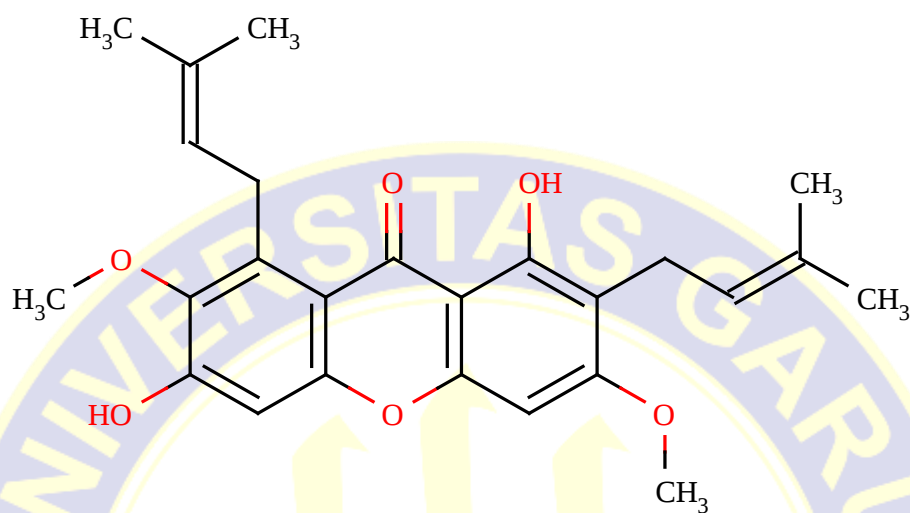


Gambar IV.9 11-Hidroksi-1-Isomangostin

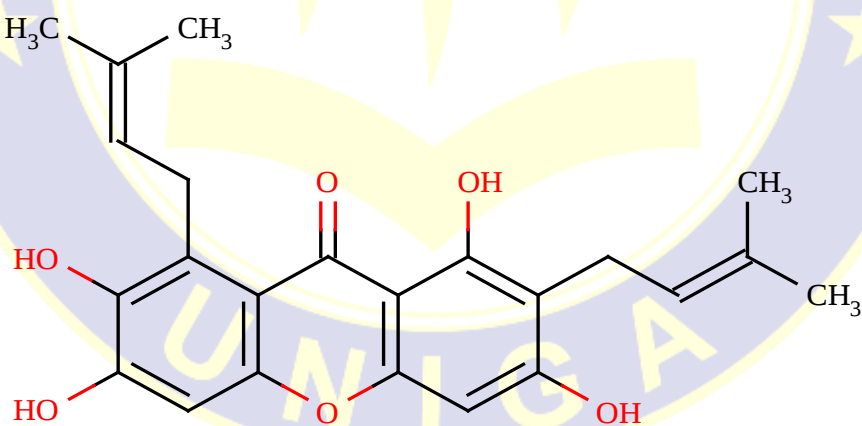


Gambar IV.10 α -Mangostin

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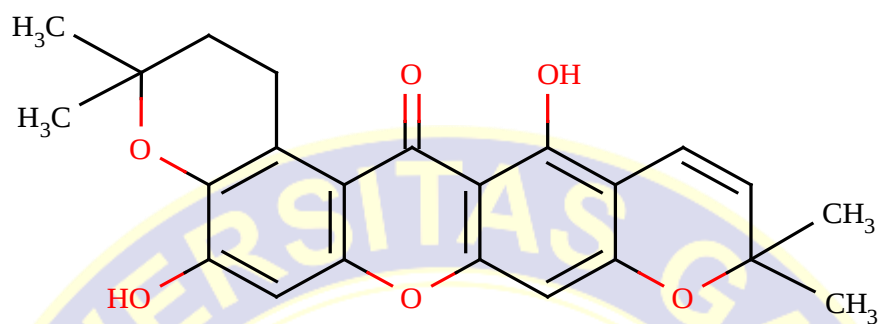


Gambar IV.11 β -Mangostin

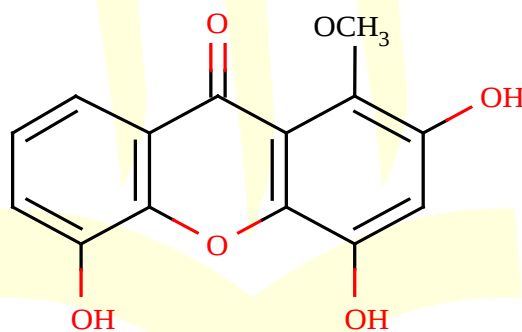


Gambar IV.12 γ -Mangostin

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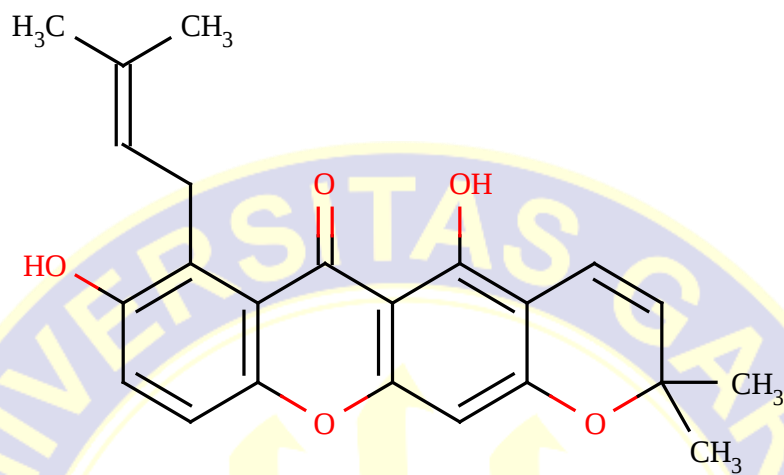


Gambar IV.13 Br-Xanton A

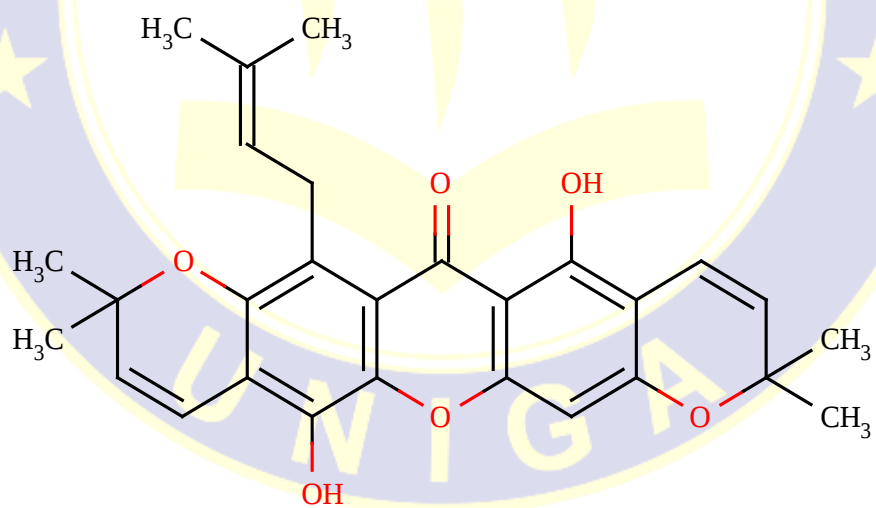


Gambar IV.14 Br-Xanton B

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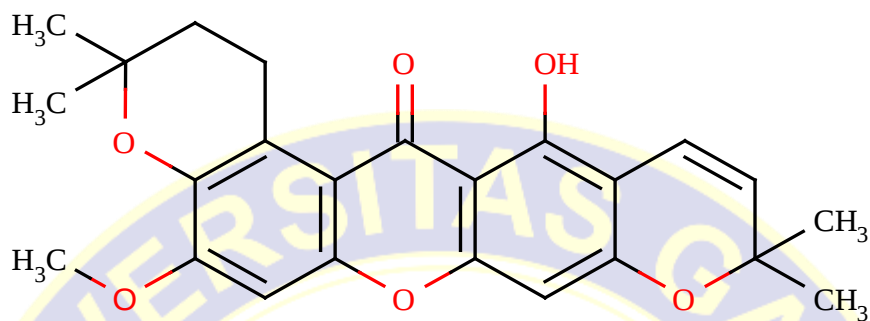


Gambar IV.15 Demetilcalabaxanton

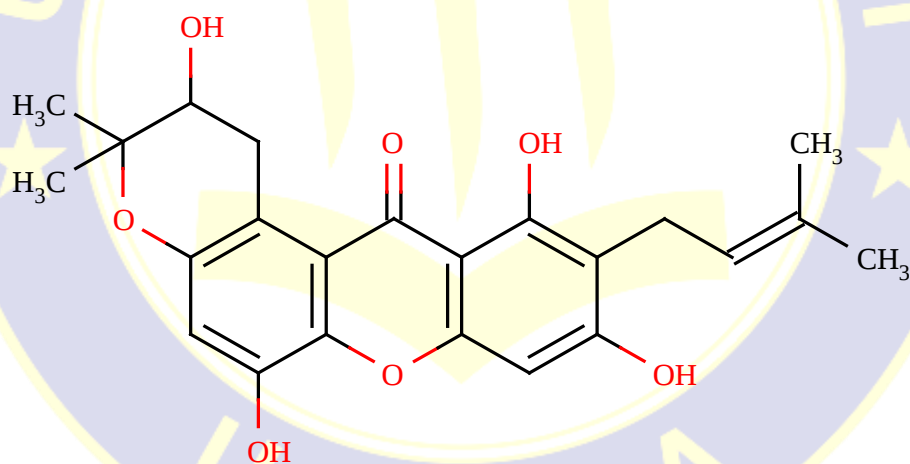


Gambar IV.16 Garcimangoson A

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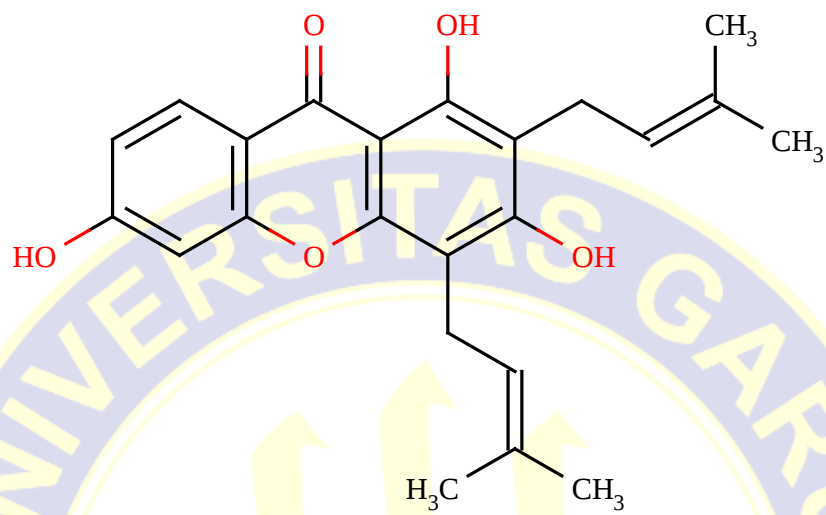


Gambar IV.17 Garcimangoson B

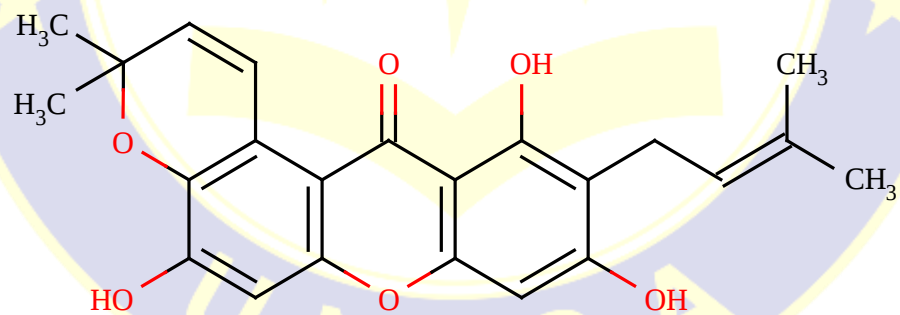


Gambar IV.18 Garcimngoson C

LAMPIRAN 10
(LANJUTAN)

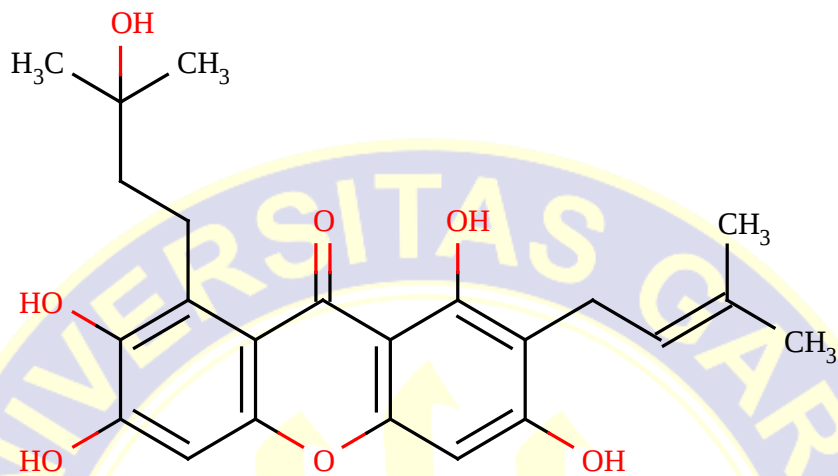


Gambar IV.19 Garcinon A

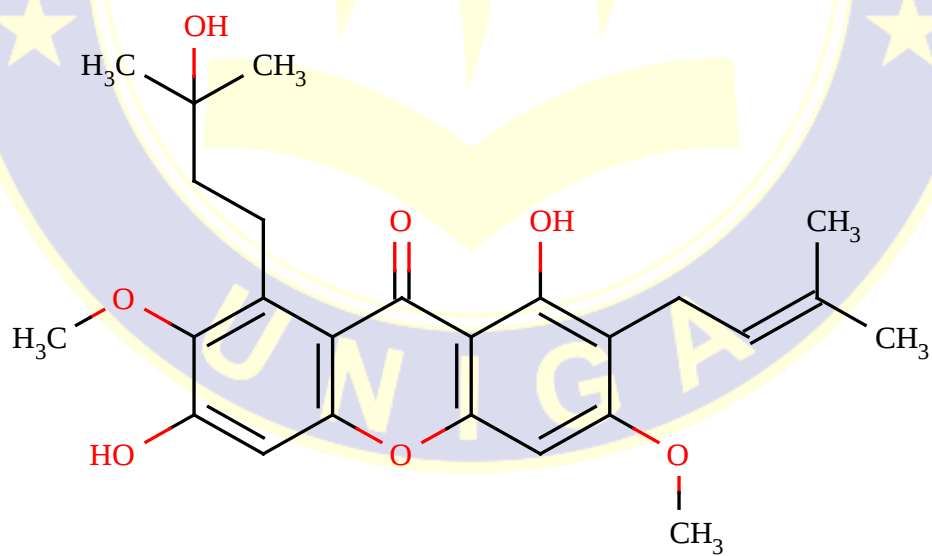


Gambar IV.20 Garcinon B

LAMPIRAN 10
(LANJUTAN)

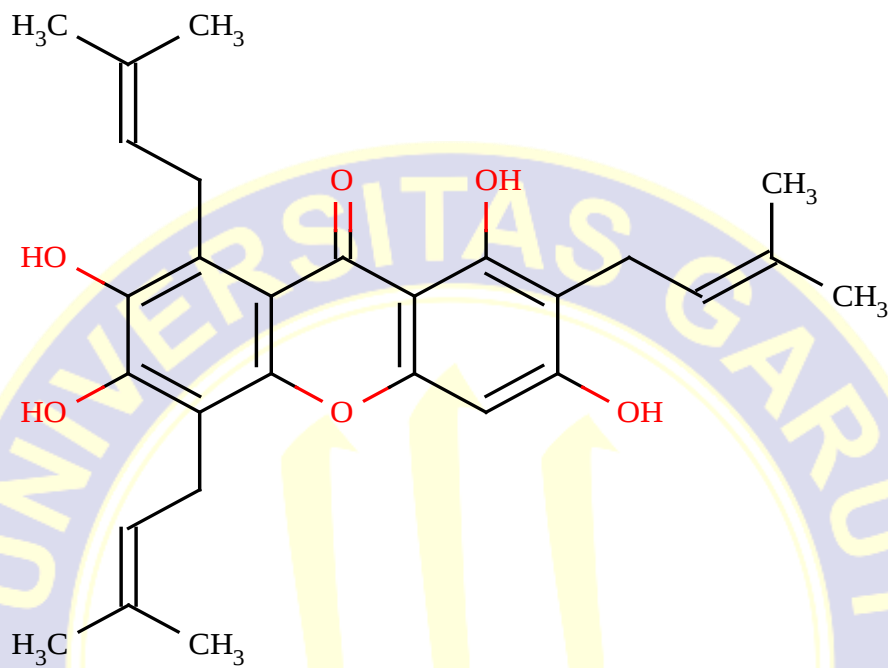


Gambar IV.21 Garcinon C

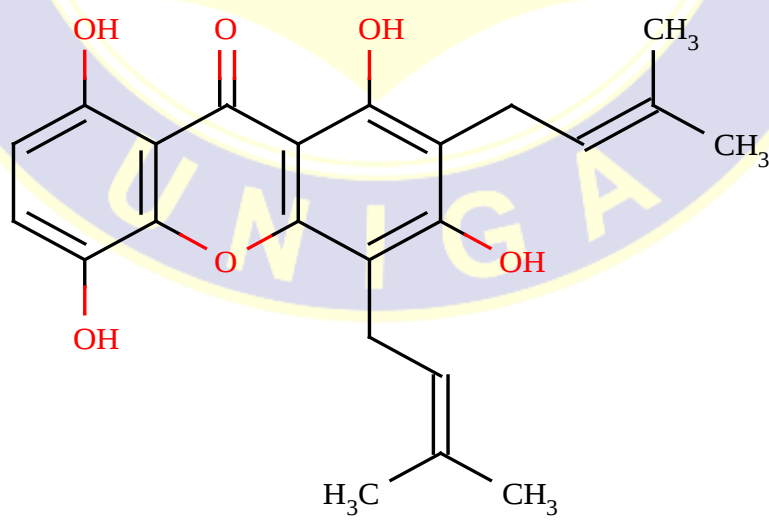


Gambar IV.22 Garcinon D

**LAMPIRAN 10
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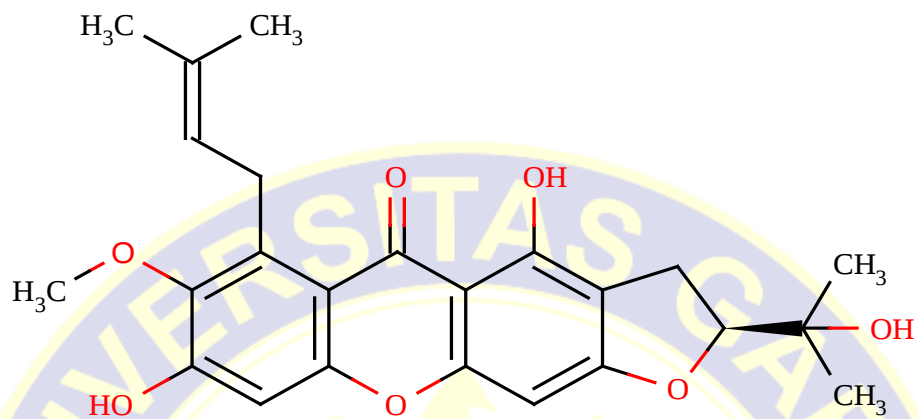


Gambar IV.23 Garcinon E

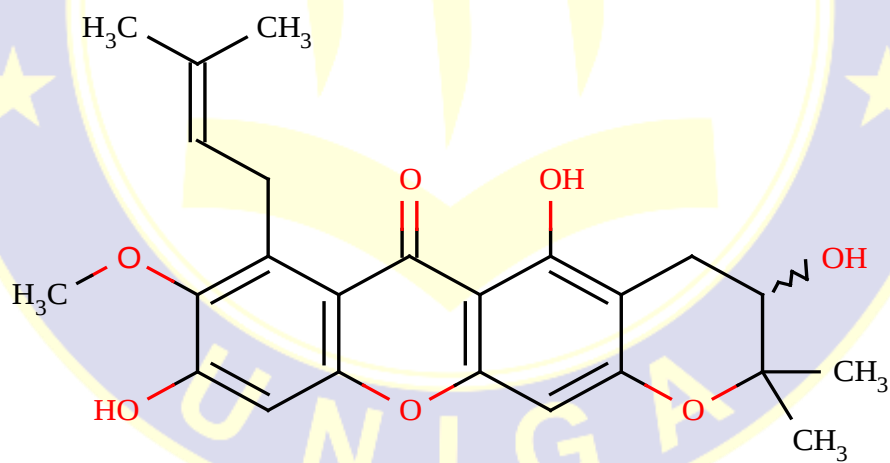


Gambar IV.24 Gartanin

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(LANJUTAN)**

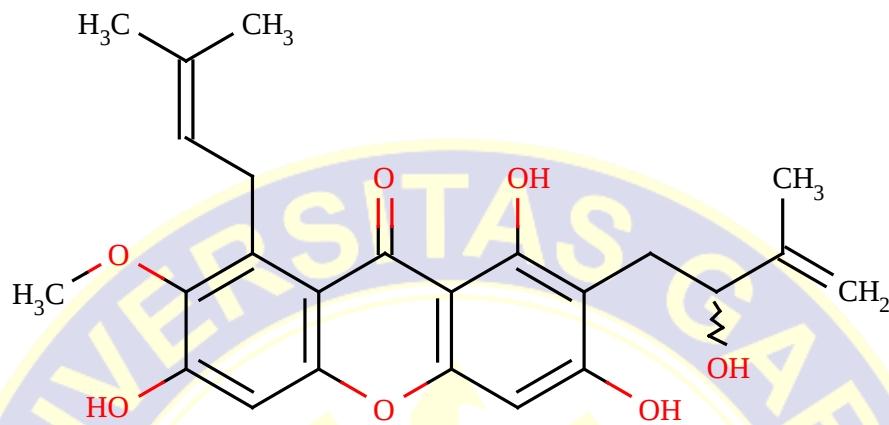


Gambar IV.25 Mangostanin

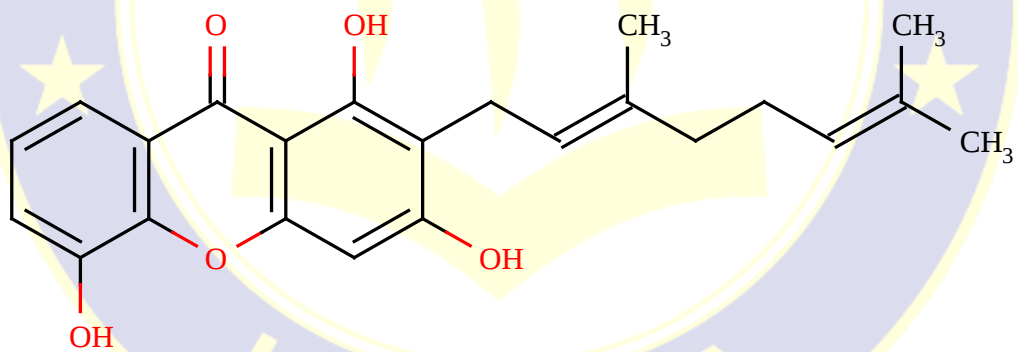


Gambar IV.26 Mangostanol

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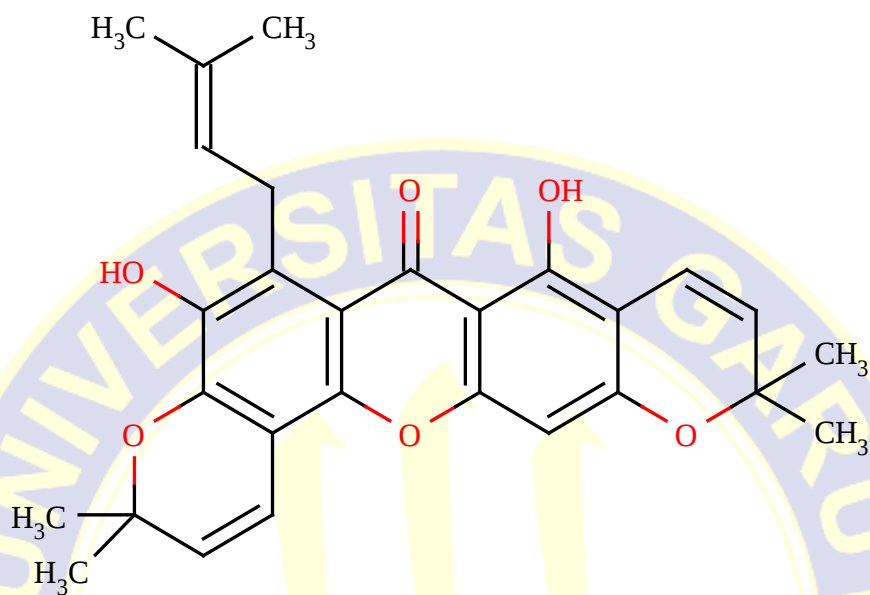


Gambar IV.27 Mangostenol

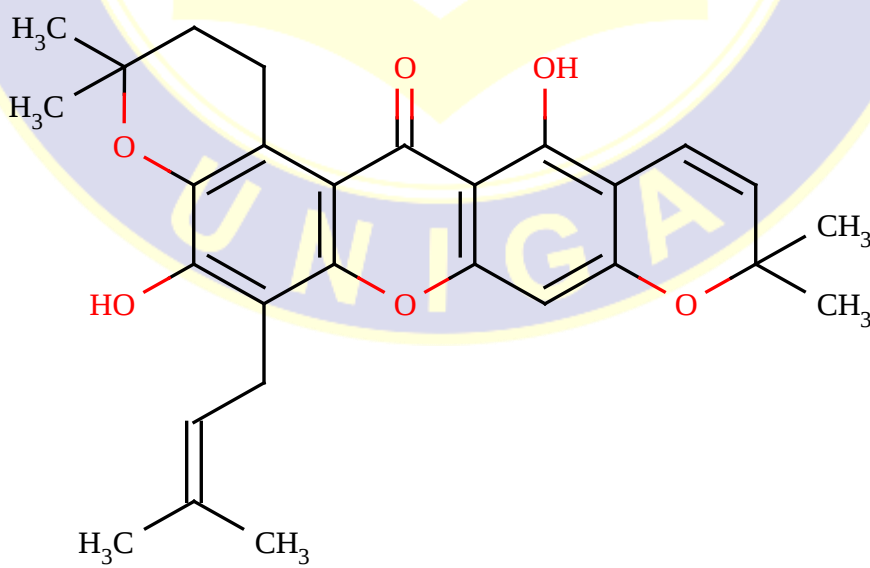


Gambar IV.28 Mangostinon

**LAMPIRAN 10
(LANJUTAN)**

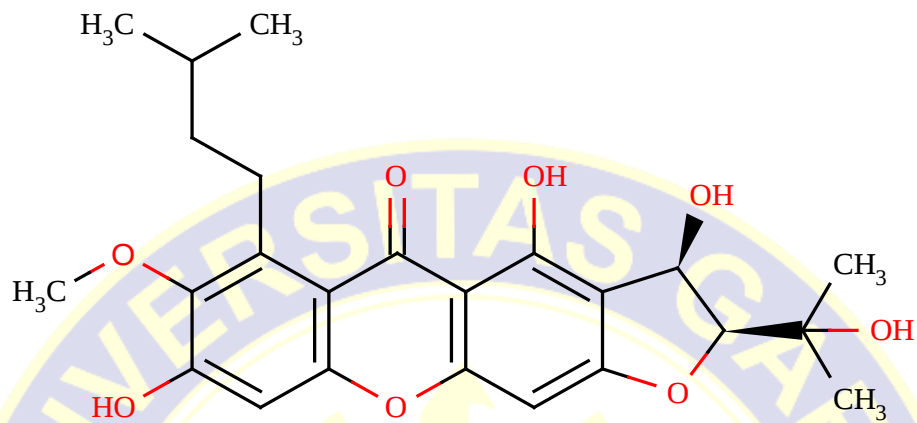


Gambar IV.29 Mangostenon A

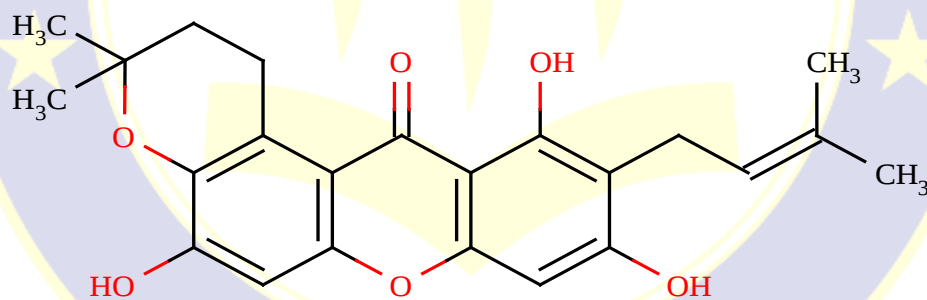


Gambar IV.30 Mangostenon B

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(LANJUTAN)**

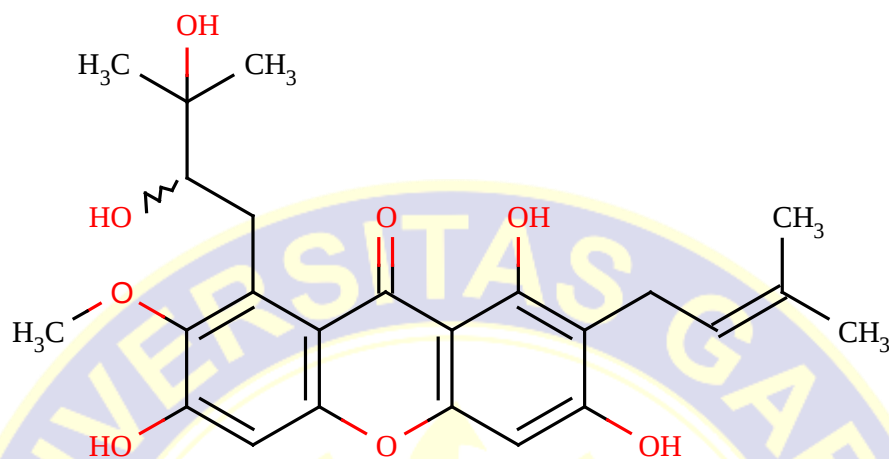


Gambar IV.31 Mangostenon C

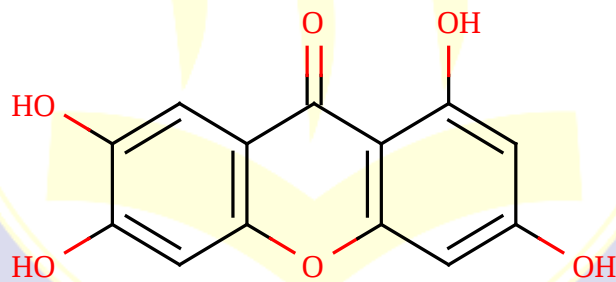


Gambar IV.32 Mangostenon D

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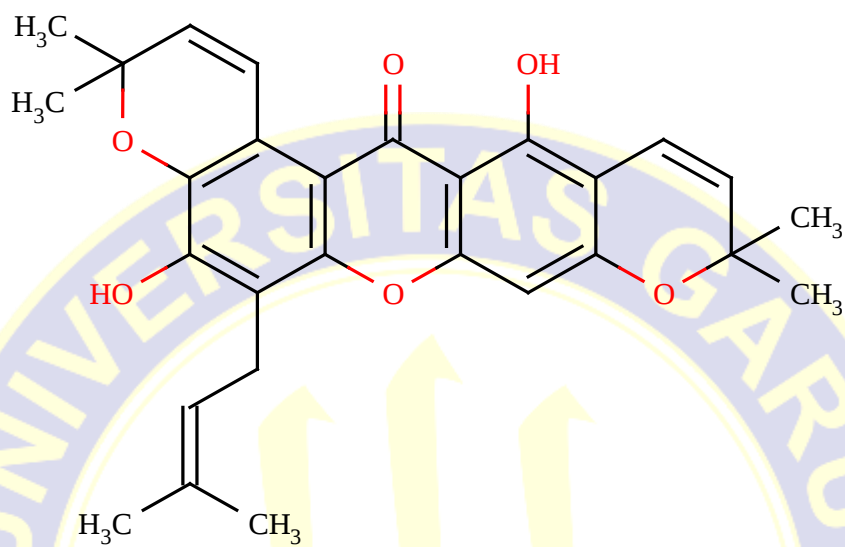


Gambar IV.33 Mangostenon E

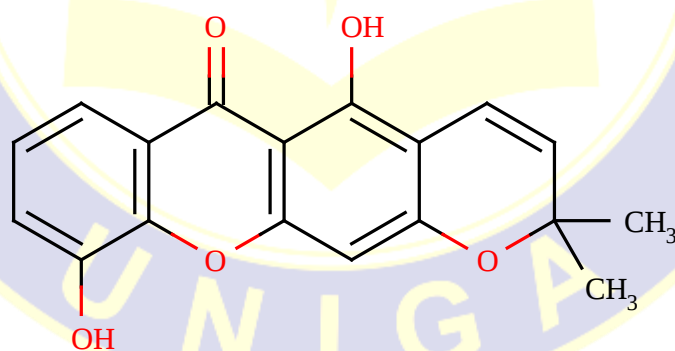


Gambar IV.34 Norathyriol

**LAMPIRAN 10
(LANJUTAN)**

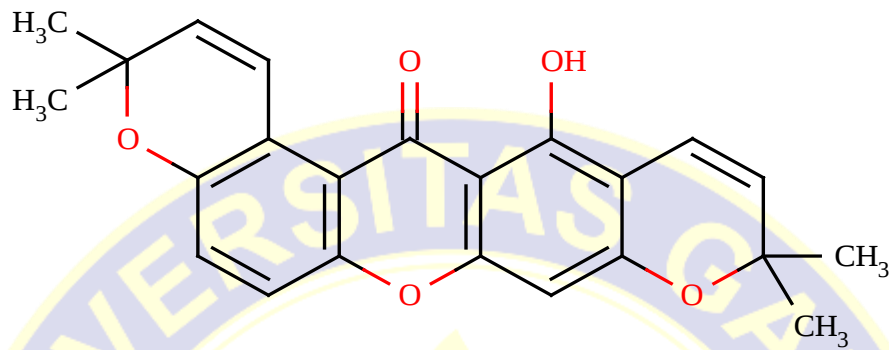


Gambar IV.35 Tovofilin B

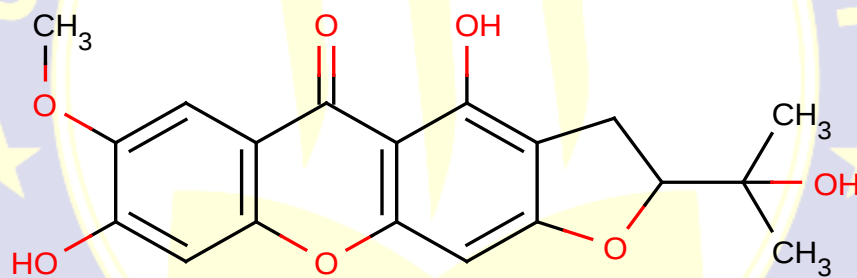


Gambar IV.36 Trapezifolixanton

LAMPIRAN 10 (LANJUTAN)

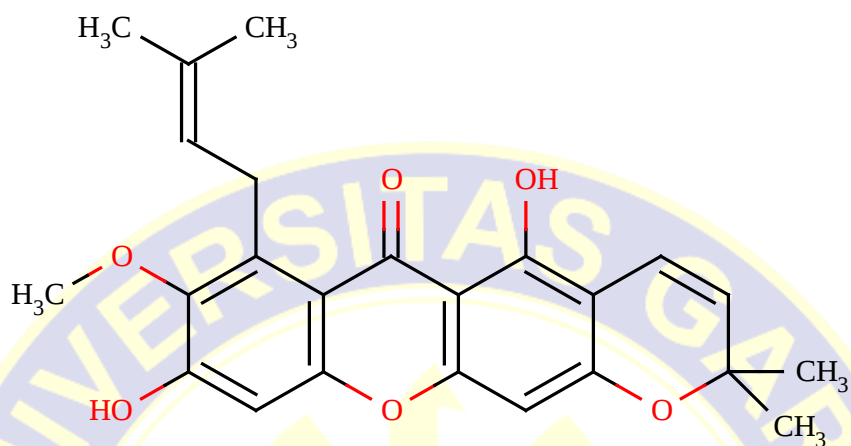


Gambar IV.37 Twaitesixanton

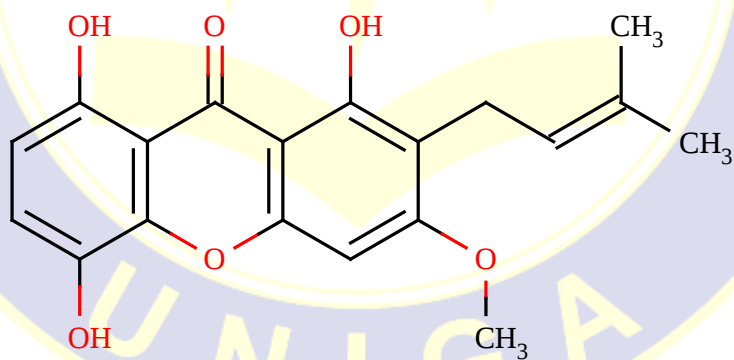


Gambar IV.38 Mangostatin

**LAMPIRAN 10
(LANJUTAN)**

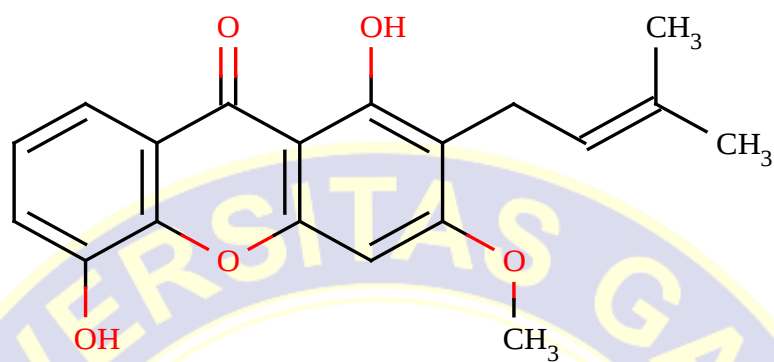


Gambar IV.39 1,6-Dihidroksi-7-Metoksi-8-(3-metilbut-2-enil)-6',6'-Dimetil-Pirano(2',3':2,3)Santon

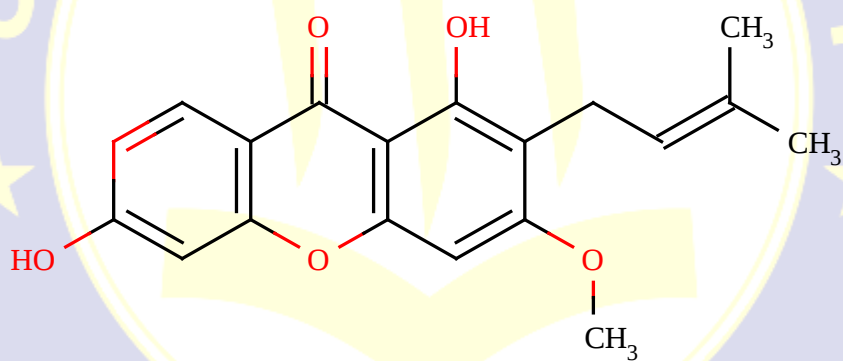


Gambar IV.40 1,5,8-Trihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon

**LAMPIRAN 10
(LANJUTAN)**

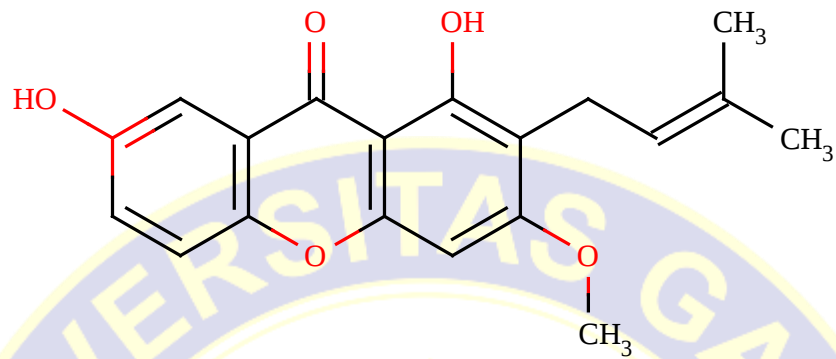


Gambar IV.41 1,5-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon



Gambar IV.42 1,6-Dihidroksi-3-Metoksi-2-(3-metilbut-2-Enil)Santon

**LAMPIRAN 10
(LANJUTAN)**



Gambar IV.43 1,7-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon

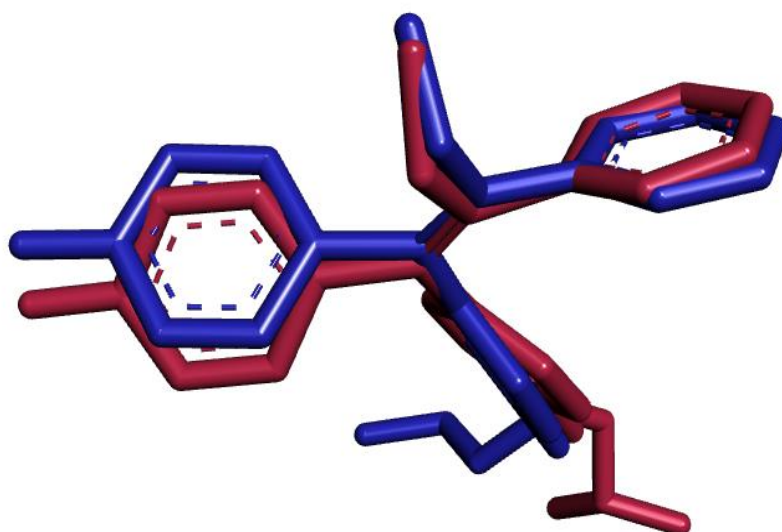
LAMPIRAN 11

HASIL VALIDASI METODE DOCKING (*REDOCKING*) ER- α ID 3ERT

Tabel V.1
Hasil Validasi *Redocking* ER- α ID 3ERT

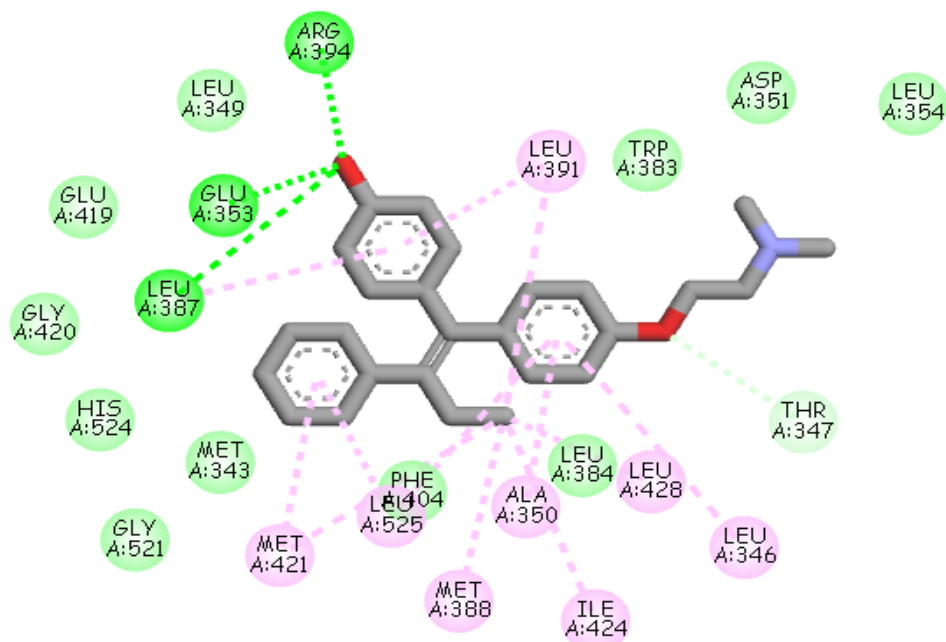
CLUSTERING HISTOGRAM

Clus-ter Rank	Lowest Binding Energy	Run	Mean Binding Energy	Num in Clus	Histogram
					5 10 15 20 25 30 35
					:_

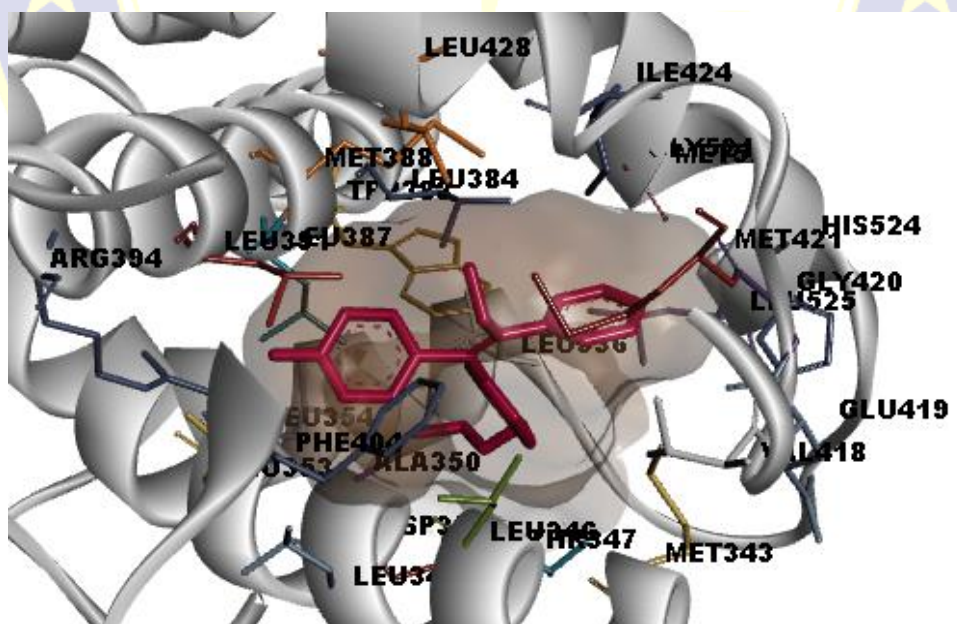


Gambar V.1 Hasil visualisasi tumpang tindih dari ER- α ID 3ERT ligan alami 4-Hidroksitamoksifen (merah muda) dengan *redocking* (biru) menghasilkan nilai RMSD 1,09 Å

LAMPIRAN 11 (LANJUTAN)



Gambar V.2 Interaksi hasil validasi *redocking* pada ER- α ID 3ERT



Gambar V.3 Visualisasi interaksi 4-Hidroksitamoksifen dengan ER- α ID 3ERT

LAMPIRAN 12

HASIL VALIDASI METODE DOCKING (*REDOCKING*) ER- β ID 1QKM

Tabel V.2
Hasil Validasi *redocking* ER- β ID 1QKM

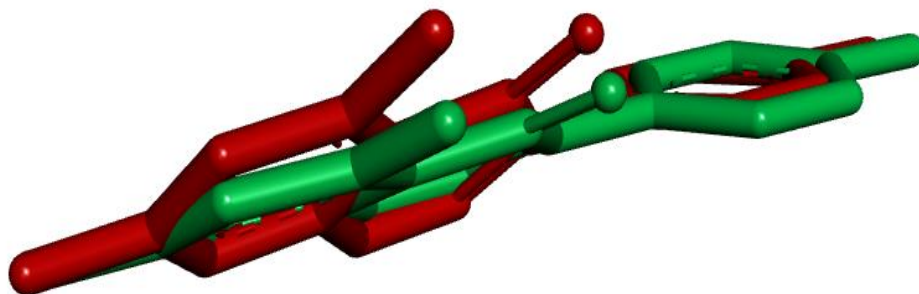
CLUSTERING HISTOGRAM

Clus-ter Rank	Lowest Binding Energy	Run	Mean Binding Energy	Num in Clus	Histogram
					5 10 15 20 25 30 35
					: : : : :
1	-10.25	28	-10.25	100	#####

Number of multi-member conformational clusters found = 1, out of 100 runs.

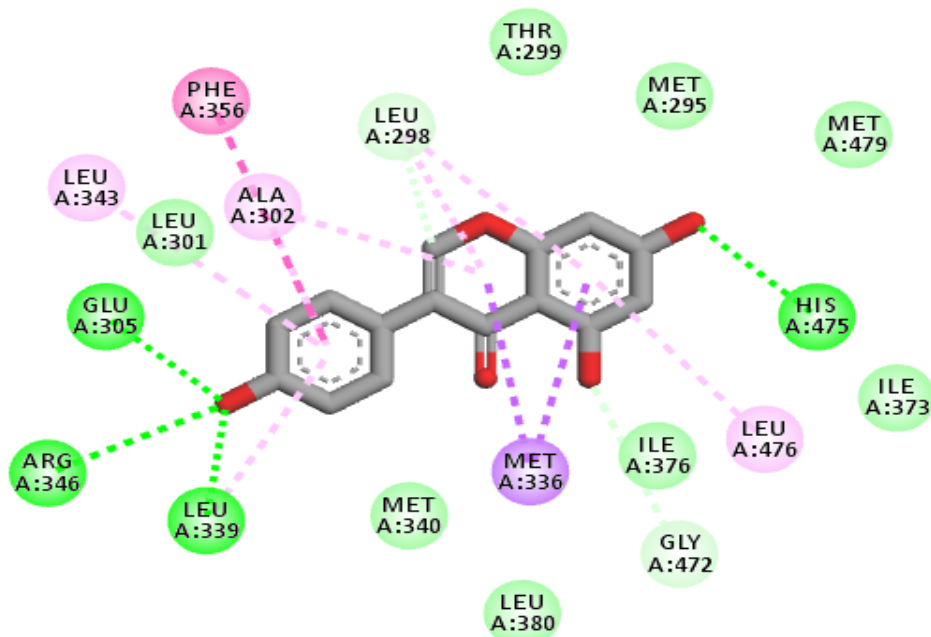
RMSD TABLE

Rank	Sub-Rank	Run	Binding Energy	Cluster RMSD	Reference RMSD	Grep Pattern
1	1	28	-10.25	0.00	0.48	RANKING
1	2	15	-10.25	0.02	0.47	RANKING
1	3	5	-10.25	0.03	0.49	RANKING
1	4	81	-10.25	0.04	0.46	RANKING
1	5	14	-10.25	0.03	0.49	RANKING
1	6	72	-10.25	0.19	0.50	RANKING
1	7	57	-10.25	0.02	0.49	RANKING
1	8	6	-10.25	0.19	0.50	RANKING

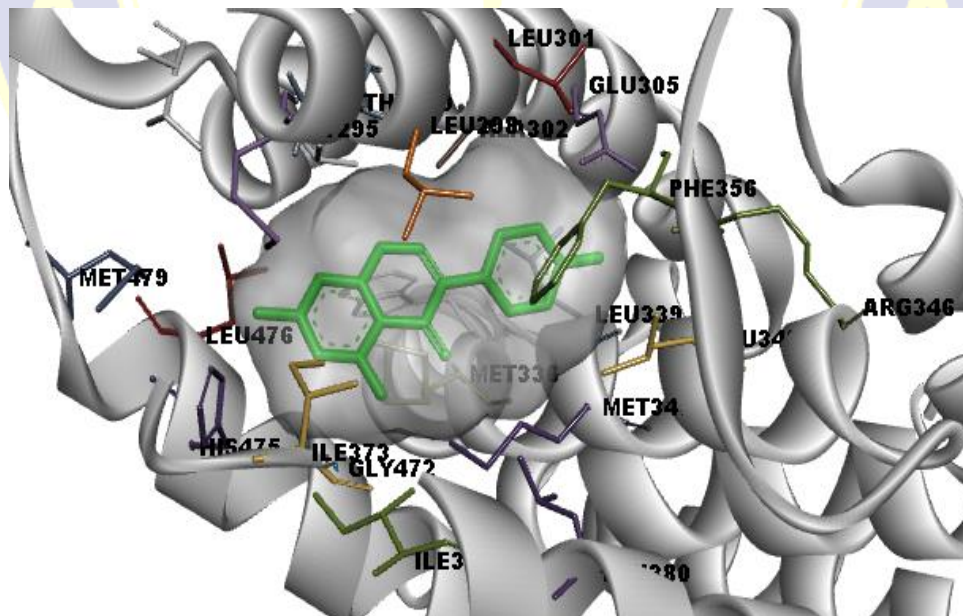


Gambar V.4 Hasil visualisasi tumpang tindih dari ER- β ID 1QKM ligan alami genistein (merah) dengan *redocking* (hijau) menghasilkan nilai RMSD 0,48 Å

LAMPIRAN 12 (LANJUTAN)

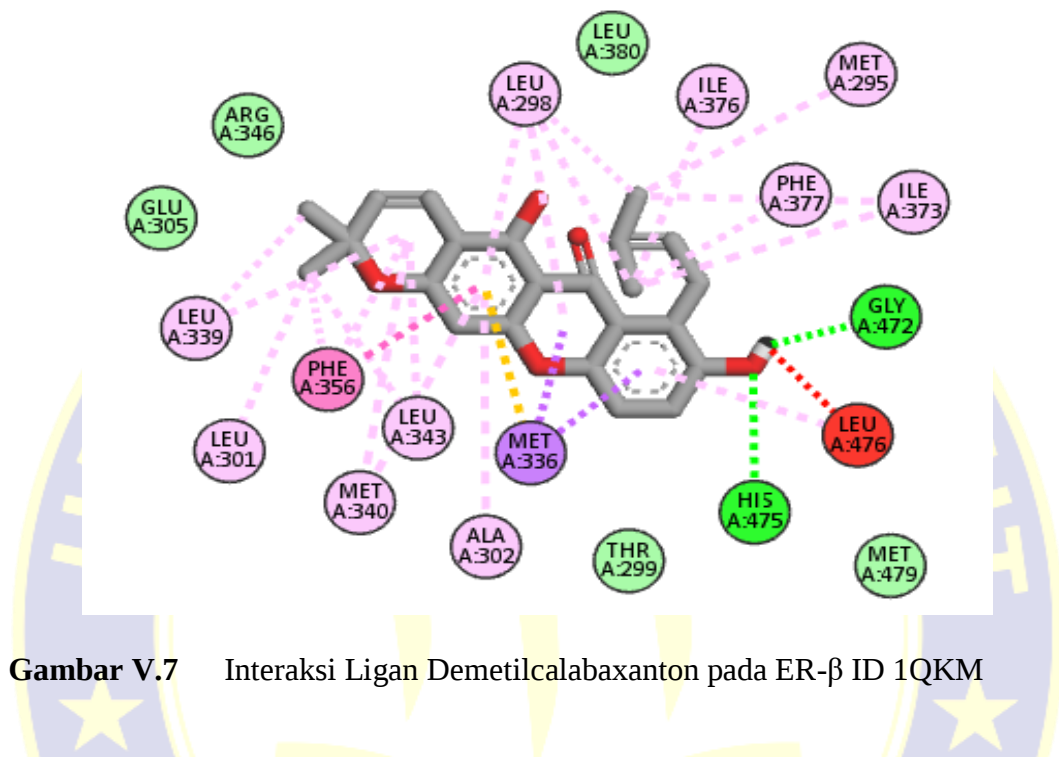


Gambar V.5 Interaksi hasil validasi *redocking* pada ER- β ID 1QKM

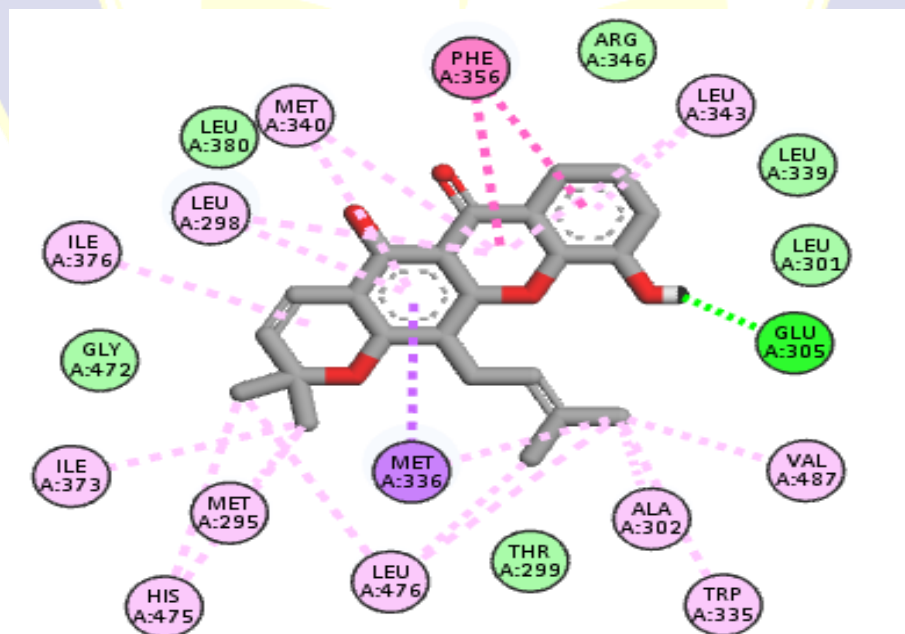


Gambar V.6 Visualisasi interaksi genistein dengan ER- β ID 1QKM

LAMPIRAN 13

LEAD COMPOUND XANTON

Gambar V.7 Interaksi Ligan Demetilcalabaxanton pada ER-β ID 1QKM



Gambar V.8 Interaksi Ligan Trapezifolisanton pada ER-β ID 1QKM

LAMPIRAN 14

SIFAT FISIKOKIMIA LIGAN

Tabel V.3
Hasil Prediksi Sifat Fisikokimia Ligan

No	Nama Ligan	BM	Log P	Ikatan Hidrogen		Molar Refraktivitas
				D	A	
1	1-Isomangostin	410	5,05	2	6	112,43
2	1-Isomangostin Hidrat	428	4,01	3	7	112,98
3	3-Isomangostin	410	5,05	2	6	112,43
4	3-Isomangostin Hidrat	428	4,01	3	7	112,98
5	6-Deoksi- γ -Mangostin	396	4,86	4	6	109,31
6	8-Desoksigartanin	380	5,15	3	5	107,65
7	11-Hidroksi-1-Isomangostin	426	4,02	3	7	113,82
8	Alfa Mangostin	410	5,16	3	6	114,21
9	Beta Mangostin	424	5,46	2	6	119,09
10	Gama Mangostin	396	4,86	4	6	109,31
11	Br-Xanton A	396	4,64	2	6	105,77
12	Br-Xanton B	274	2,14	3	6	67,93
13	Demetilcalabaxanton	378	5,12	2	5	106,59
14	Garcimangoson A	460	6,31	2	6	130,33
15	Garcimangoson B	408	5,02	1	6	111,37
16	Garcimangoson C	412	3,72	4	7	108,93
17	Garcinon A	380	5,15	3	5	107,65
18	Garcinon B	394	4,83	3	6	108,26
19	Garcinon C	414	4,05	5	7	110,80
20	Garcinon D	428	4,36	4	7	115,69
21	Garcinon E	464	6,37	4	6	132,45
22	Gartanin	396	4,86	4	6	109,31
23	Mangostanin	426	4,02	3	7	113,82
24	Mangostanol	426	4,02	3	7	113,82
25	Mangostenol	426	4,13	4	7	115,59
26	Mangostenon A	460	6,31	2	6	130,33
27	Mangostenon B	462	6,23	2	6	129,62
28	Mangostenon C	442	3,51	4	8	115,01
29	Mangostenon D	396	4,75	3	6	107,54

**LAMPIRAN 14
(LANJUTAN)**

No	Nama Ligan	BM	Log P	Ikatan Hidrogen		Molar Refraktivitas
				D	A	
31	Mangostinon	380	5,37	3	5	107,51
32	Norathyriol	260	1,84	4	6	63,04
33	Tovofilin B	460	6,31	2	6	130,33
34	Trapezifolixanton	378	5,12	2	5	106,59
35	Twaitesixanton	376	5,09	1	5	105,53
36	Mangostatin	358	2,51	3	7	90,68
37	1,6-Dihidroksi-7-Metoksi-8-(3-Metilbut-2-Enil)-6',6'-Dimetil-Pirano-(2',3':2,3)Santon	423	5,55	2	6	118,96
38	1,5,8-Trihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	324	0,00	0	6	0,00
39	1,5-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	326	3,95	2	5	89,47
40	1,6-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	326	3,95	2	5	89,47
41	1,7-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	326	3,95	2	5	89,47
42	4-Hidroksitamoksifen	387	5,71	1	3	121,24
43	Genistein	260	-1,31	0	5	62,69
44	Klomifen	405	6,56	0	2	124,37
45	Tamoksifen	385	6,38	0	2	124,19

Keterangan : Log P = Kelarutan
D = Donor Ikatan Hidrogen
A = Akseptor Ikatan Hidrogen
BM = Bobot Molekul

LAMPIRAN 15

PENAMBATAN MOLEKUL PADA ER- α ID 3ERT

Tabel V.4
 Hasil Penambatan Ligan pada ER- α

No	Nama Ligan	ΔG	KI	Ikatan Hidrogen	Residu Asam Amino
1	1-Isomangostin	-8,07	1,2	1	MET421
2	1-Isomangostin Hidrat	-9,09	215	1	GLU353
3	3-Isomangostin	-8,09	1,2	3	MET343, ASP351, THR347
4	3-Isomangostin Hidrat	-9,20	181	2	GLU353, ARG394
5	6-Deoksi gama mangostin	-8,13	1,2	1	ASP351
6	8-Desoksigartanin	-9,28	157	2	MET343, GLU353
7	11-Hidroksi-1-Isomangostin	-7,76	2	-	-
8	Alfa Mangostin	-8,51	573	1	THR347
9	Beta Mangostin	-8,69	427	1	THR347
10	Gama Mangostin	-8,13	1,1	1	THR347
11	Br-Xanton A	-7,86	1,2	2	THR347, MET343
12	Br-Xanton B	-6,45	19	3	LEU346, ARG394, LEU387
13	Demetilcalabaxanton	-7,66	2,43	2	THR347, MET343
14	Garcimangoson A	-8,61	485	-	-
15	Garcimangoson B	-8,18	1	-	-
16	Garcimangoson C	-7,00	7,4	1	THR347
17	Garcinon A	-9,41	126	2	GLU353, MET343
18	Garcinon B	-7,73	2,2	3	ASP351, THR347, MET343
19	Garcinon C	-8,86	322	3	GLU353, ARG394, THR347
20	Garcinon D	-9,13	203	2	THR347, GLU353
21	Garcinon E	-9,56	99	1	THR347
22	Gartanin	-8,48	611	1	LEU346
23	Mangostanin	-8,17	1	3	ASP351, THR347, MET343
24	Mangostanol	-7,81	1,9	2	THR347, MET343
25	Mangostenol	-7,89	1	2	LEU387, THR347
26	Mangostenon A	-9,20	181	1	THR347
27	Mangostenon B	-9,55	100	3	THR347, ASP351, MET343

LAMPIRAN 15
(LANJUTAN)

No	Nama Ligan	ΔG	KI	Ikatan Hidrogen	Residu Asam Amino
28	Mangostenon C	-8,12	1	3	THR347, ASP351 (2)
29	Mangostenon D	-7,87	2	3	THR347, MET343, ASP351
30	Mangostenon E	-8,94	278	3	THR347, ASP351 (2)
31	Mangostinon	-8,39	702	2	THR347, MET343,
32	Norathyriol	-6,89	9	4	GLU419, GLU353 (2), ARG394
33	Tovofilin B	-9,70	77	3	ASP351, MET343, THR347
34	Trapezifolixanton	-8,75	388	1	LEU346
35	Twaitesixanton	-8,15	1	2	THR347, MET343
36	Mangostatin	-7,32	4	2	GLU353, ARG394
37	1,6-Dihidroksi-7-Metoksi-8-(3-Metilbut-2-Enil)-6',6'-Dimetil-Pirano-(2',3':2,3)Santon	-8,58	513	-	-
38	1,5,8-Trihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	-7,51	3	1	GLU353
39	1,5-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	-8,13	1	1	GLU353
40	1,6-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	-8,73	395	2	GLU353, ARG394
41	1,7-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	-8,04	1	2	GLY521, HIS524
42	4-Hidroksitamoksifen	-11,7	3	3	ARG394, GLU353, LEU387
43	Genistein	-	-	-	-
44	Klomifen	-10,8	12	-	-
45	Tamoksifen	-10,8	12	-	-

Keterangan : ΔG = Nilai Energi Bebas (kJ/mol)
KI = Konstanta Inhibisi (nM)

LAMPIRAN 16

PENAMBATAN MOLEKUL PADA ER- β ID 1QKM

Tabel V.5
 Hasil Penambatan Ligan pada ER- β

No	Nama Ligan	ΔG	KI	Ikatan Hidrogen	Residu Asam Amino
1	1-Isomangostin	-9,62	88	2	LEU339, HIS475
2	1-Isomangostin Hidrat	-7,91	1,5	2	LEU339, HIS475
3	3-Isomangostin	-6,85	9,6	-	-
4	3-Isomangostin Hidrat	-7,25	4,8	-	-
5	6-Deoksi gama mangostin	-7,93	1,5	2	GLU305, HIS475
6	8-Desoksigartanin	-9,07	224	-	-
7	11-Hidroksi-1-Isomangostin	-9,10	212	3	HIS475, GLU305, ARG346
8	Alfa Mangostin	-7,66	2,4	2	HIS475, LEU339
9	Beta Mangostin	-5,57	82	-	-
10	Gama Mangostin	-8,11	1	2	HIS475, GLU305
11	Br-Xanton A	+23,4	-	2	LEU339, LEU298
12	Br-Xanton B	-7,70	2	2	LEU298, GLU305
13	Demetilcalabaxanton	-10,36	25	2	HIS475, GLY472
14	Garcimangoson A	+37,7	-	-	-
15	Garcimangoson B	+25,3	-	1	LEU298
16	Garcimangoson C	-0,03	945	2	GLU305, GLY472
17	Garcinon A	-9,57	96	1	HIS475
18	Garcinon B	-1,97	36	1	GLU305
19	Garcinon C	-6,62	14	1	GLU305
20	Garcinon D	-6,98	7,6	2	HIS475, LEU339
21	Garcinon E	-6,68	12	1	HIS475
22	Gartanin	-8,71	412	1	LEU298
23	Mangostanin	-2,42	16	2	LEU339, ARG346
24	Mangostanol	-1,17	139	-	-
25	Mangostenol	-8,77	373	2	LEU339, HIS475
26	Mangostenon A	+32	-	1	LEU298
27	Mangostenon B	+26	-	-	-
28	Mangostenon C	-0,20	709	2	LEU339, ARG346
29	Mangostenon D	-3,61	2,2	1	GLU305
30	Mangostenon E	-4,43	567	3	HIS475, GLY472, LEU339
31	Mangostinon	-8,96	269	3	LEU298, GLY472, HIS475

LAMPIRAN 16
(LANJUTAN)

No	Nama Ligan	ΔG	KI	Ikatan Hidrogen	Residu Asam Amino
32	Norathyriol	-8,03	2	2	GLY472, GLU305 (2)
33	Tovofilin B	+24	-	-	-
34	Trapezifolixanton	-10,37	25	1	GLU305
35	Twaitesixanton	+21	-	-	-
36	Mangostatin	-5,5	91	-	-
37	1,6-Dihidroksi-7-Metoksi-8-(3-Metilbut-2-Enil)-6',6'-Dimetil-Pirano-(2',3':2,3)Santon	-4	1,2	-	-
38	1,5,8-Trihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	-8,4	767	1	GLU305
39	1,5-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	-8,7	436	-	-
40	1,6-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	-9,4	142	1	HIS475
41	1,7-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	-9	219	2	HIS475, LEU298
42	4-Hidroksitamoksifen	-	-	-	-
43	Genistein	-10,25	30	4	HIS475, LEU339, ARG346, GLU305
44	Klomifen	-8,87	315	-	-
45	Tamoksifen	-8,54	551	-	-

Keterangan : ΔG = Nilai Energi Bebas (kKal/mol)

KI = Konstanta Inhibisi (nM)

LAMPIRAN 17

PENGUJIAN FARMAKOKINETIKA

Tabel V.6
 Hasil Pengujian Prediksi Farmakokinetika Ligan

No	Nama Ligan	Absorpsi		Distribusi
		CaCo-2 (nm. Sec ⁻¹)	HIA (%)	PPB (%)
1	1-Isomangostin	38,81	94,31	93,28
2	1-Isomangostin Hidrat	18,78	91,11	90,26
3	3-Isomangostin	37,18	94,45	91,73
4	3-Isomangostin Hidrat	16,52	91,48	89,44
5	6-Deoksi gama mangostin	11,12	91,78	100
6	8-Desoksigartanin	8,58	87,25	100
7	11-Hidroksi-1-Isomangostin	19,02	91,49	91,31
8	Alfa Mangostin	20,69	91,81	96,61
9	Beta Mangostin	36,59	94,57	93,75
10	Gama Mangostin	18,72	87,25	100
11	Br-Xanton A	31,96	94,08	93,01
12	Br-Xanton B	18,97	85,39	92,91
13	Demetilcalabaxanton	17,63	94,35	95,63
14	Garcimangoson A	26,12	95,16	93,89
15	Garcimangoson B	51,89	96,31	90,76
16	Garcimangoson C	7,76	86,01	94,61
17	Garcinon A	20,25	91,78	100
18	Garcinon B	16,19	91,52	94,92
19	Garcinon C	15,55	77,82	98,58
20	Garcinon D	15,07	86,58	94,37
21	Garcinon E	19,81	90,42	100
22	Gartanin	14,26	87,25	100
23	Mangostanin	20,67	91,49	90,48
24	Mangostanol	17,36	91,49	91,49
25	Mangostenol	16,77	87,37	93,17
26	Mangostenon A	44,68	95,16	91,77
27	Mangostenon B	44,83	94,98	92,75
28	Mangostenon C	14,77	86,15	87,76

**LAMPIRAN 17
(LANJUTAN)**

No	Nama Ligan	Absorbsi		Distribusi
		CaCo-2 (nm. Sec ⁻¹)	HIA (%)	PPB (%)
29	Mangostenon D	16,28	91,13	97,32
30	Mangostenon E	15,63	77,62	90,51
31	Mangostinon	10,34	91,78	100
32	Norathyriol	19,68	74,43	99,18
33	Tovofilin B	44,68	95,16	91,73
34	Trapezifolixanton	4,036	93,38	91,53
35	Twaitesixanton	30,89	96,07	91,49
36	Mangostatin	16,31	88,65	85,46
37	1,6-Dihidroksi-7-Metoksi-8-(3-Metilbut-2-Enil)-6',6'-Dimetil-Pirano-(2',3':2,3)Santon	37,18	94,45	91,73
38	1,5,8-Trihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	13,27	89,69	96,79
39	1,5-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	7,36	93,52	96,73
40	1,6-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	23,96	93,52	95,55
41	1,7-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	7,36	93,52	98,81
42	4-Hidroksitamoksifen	47,74	97,21	99,51
43	Genistein	5,75	88,12	89,43
44	Klomifen	58,04	100	92,96
45	Tamoksifen	49,54	100	94,74

Keterangan : HIA (*Human Intestinal Absorbsi*) = 70-100% *well absorbed*
 20-70% *moderately absorbed*
 0-20% *poorly absorbed*

In Vitro Caco-2 cell permeability = > 70 *higher permeability*
 4-70 *medium Permeability*
 < 4 *low permeability*

Plasma Protein Binding = > 90 *strongly bound*
 < 90% *weakly bound*

LAMPIRAN 18

PENGUJIAN TOKSISITAS

Tabel V.7
 Hasil Pengujian Prediksi Toksisitas Ligan

No	Ligan Uji	Ames Test	Karsinogen
		Mutagen / Non Mutagen	(-) / (+)
1	1-Isomangostin	Non mutagen	Negativ
2	1-Isomangostin Hidrat	Non mutagen	Negativ
3	3-Isomangostin	Non mutagen	Negativ
4	3-Isomangostin Hidrat	Non mutagen	Negativ
5	6-Deoksi gama mangostin	Non mutagen	Positiv
6	8-Desoksigartanin	Non mutagen	Negativ
7	11-Hidroksi-1-Isomangostin	Non mutagen	Negativ
8	Alfa Mangostin	Non mutagen	Negativ
9	Beta Mangostin	Non mutagen	Negativ
10	Gama Mangostin	Non mutagen	Negativ
11	Br-Xanton A	Non mutagen	Negativ
12	Br-Xanton B	Mutagen	Negativ
13	Demetilcalabaxanton	Non mutagen	Negativ
14	Garcimangoson A	Non mutagen	Negativ
15	Garcimangoson B	Non mutagen	Negativ
16	Garcimangoson C	Non mutagen	Negativ
17	Garcinon A	Non mutagen	Negativ
18	Garcinon B	Non mutagen	Negativ
19	Garcinon C	Non mutagen	Negativ
20	Garcinon D	Non mutagen	Negativ
21	Garcinon E	Non mutagen	Negativ
22	Gartanin	Mutagen	Negativ
23	Mangostanin	Non mutagen	Negativ
24	Mangostanol	Non mutagen	Negativ
25	Mangostenol	Non mutagen	Negativ
26	Mangostenon A	Non mutagen	Negativ
27	Mangostenon B	Non mutagen	Negativ
28	Mangostenon C	Non mutagen	Negativ
29	Mangostenon D	Non mutagen	Negativ
30	Mangostenon E	Non mutagen	Negativ
31	Mangostinon	Non mutagen	Negativ
32	Norathyriol	Mutagen	Negativ
33	Tovofilin B	Mutagen	Negativ
34	Trapezifolixanton	Non mutagen	Negativ

LAMPIRAN 18
(LANJUTAN)

No	Ligan Uji	Ames Test	Karsinogen
		Mutagen / Non Mutagen	(-) / (+)
35	Twaitesixanton	Mutagen	Negativ
36	Mangostatin	Non mutagen	Negativ
37	1,6-Dihidroksi-7-Metoksi-8-(3-Metilbut-2-Enil)-6',6'-Dimetil-Pirano-(2',3':2,3)Santon	Non mutagen	Negativ
38	1,5,8-Trihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	Non mutagen	Negativ
39	1,5-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	Mutagen	Positiv
40	1,6-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	Mutagen	Negativ
41	1,7-Dihidroksi-3-Metoksi-2-(3-Metilbut-2-Enil)Santon	Non mutagen	Negativ
42	4-Hidroksitamoksifen	Non mutagen	Negativ
43	Genistein	Mutagen	Negativ
44	Klomifen	Mutagen	Positiv
45	Tamoksifen	Non mutagen	Positiv