Supplementary Table S1: Evaluation of Anxiolytic Activity through Elevated Plus Maze Test.

Test Samples	Dose (mg/kg)	Time Spent in Open Arms (sec)	Time Spent in Closed Arms (sec)	% Time Spent in Open Arms	% Time Spent in Closed Arms
Control	10	126.14 ± 2.41	173.86 ±2.41	-	-
Diazepam	1	234.87 ± 2.72***	65.13 ±2.72***	87.20	62.54
SIF-ME	200	146.13 ±3.58*	153.86 ± 3.58*	16.85	11.50
SIF-ME	400	200.16 ± 1.76***	99.83 ±1.76***	59.69	42.58

All values are shown as Mean ± SEM, and statistical analysis is performed using One-Way Analysis of Variance (ANOVA). Subsequently, n = 5 is employed for Dunnett's multiple comparison test, with *p<.05, **p<.01, and ***p<.001 in comparison to the control group.

Supplementary Table S2: Evaluation of Antidepressant Activity through Forced Swimming Test.

Group	Dose (mg/kg)	Immobility Time (Sec)				% Immobility
		G-1	G-2	G-3	Mean ± SEM	
Control	10 mg/ kg	185.32	192.4	184.7	187.47 ± 2.46	-
Fluoxetine	1	87	92.3	88.5	89.26 ± 1.57***	52.38
SIF-ME	200	138.4	132.83	142.4	137.87 ± 2.77**	15.11
SIF-ME	400	105.8	93.5	95.3	98.2 ± 3.83**	47.62

All values are shown as Mean ± SEM, and statistical analysis is performed using One-Way Analysis of Variance (ANOVA). Subsequently, n = 3 is employed for Dunnett's multiple comparison test, with *p<.05, **p<.01, and ***p<.001 in comparison to the control group.

Supplementary Table S3: Evaluation of Locomotor Activity through Open Field Test.

Treatment Dose (mg/ml)	Number of Squares crossed				
	0 mins.	**30 mins.**	**60 mins.**	**90 mins.**	**120 mins.**
Control	73.33± 0.88	74.33± 1.45	71.33 ± 1.20	59.66 ± 3.52	66.33± 1.76
Diazepam	67.33 ± 0.88 *	52.66 ± 4.17**	34.33 ± 1.76***	28.33 ± 1.76*	26.66 ± 2.60 ***
SIF-ME 200	74.33 ± 1.45	68.66 ± 2.60	42.33 ±3.17**	35.33 ± 0.88*	38.33 ± 1.33**
SIF-ME 400	71.33± 1.76	65.33 ± 0.88*	35.33 ± 1.85 ***	32.66 ± 2.60*	25.33 ± 1.45***

All values are shown as Mean ± SEM, and statistical analysis is performed using One-Way Analysis of Variance (ANOVA). Subsequently, n = 5 is employed for Dunnett's multiple comparison test, with *p<.05, **p<.01, and ***p<.001 in comparison to the control group.

Supplementary Table S4: Molecular docking scores for anxiolytic, antidepressant, locomotor, antipyretic, thrombolytic, and anthelmintic activities.

Compounds Name	PubChem CID	Docking Score (Kcal/mol)					
		Anxiolytic (2z5x)	**Antidepressant (5i6x)**	**Locomotor (6x3t)**	**Antipyretic (4yk5)**	**Thrombolytic (1a5h)**	**Anthelmintic (1sa0)**
Butanoic acid, 3-methyl	10430	-4.8	-5.1	-3.2	-3.7	-4.5	-4.1
Phenol, 2-methoxy	460	-5.7	-5.4	-3.7	-4.2	-5	-4.4
2-Methoxy-4-vinyl phenol	332	-6.4	-6.1	-3.8	-4.5	-5.6	-5.2
Phenol, 2.6-dimethoxy	7041	-5.6	-5.4	-4.1	-4.1	-5.5	-4.7
Vanillin	1183	-6	-5.8	-4	-4.4	-5.6	-4.8
Phenol, 2-methoxy-4-propyl	17739	-6.6	-6.4	-3.9	-4.4	-5.6	-5.3
Phenol, 4-ethenyl-2,6-dimethoxy	35960	-6.3	-6.3	-4	-4.6	-5.8	-5.4
Benzaldehyde, 3-hydroxy-4-methoxy	12127	-6.3	-5.9	-3.9	-4.3	-5.7	-4.7
5-Methyl-3-phenyl-1,3-oxazolidine	319003	-7	-6.5	-4.2	-4.4	-6.1	-5.2

2,6-Dimethoxyhydroquinone	96038	-5.6	-5.4	-4.2	-4.1	-6	-4.7
Benzaldehyde, 4-hydroxy-3,5-dimethoxy	8655	-6.1	-5.8	-4.4	-4.5	-5.8	-5
Phenol, 2.6-dimethoxy-4-(2-propenyl)	226486	-6.7	-6.6	-4.2	-4.5	-5.7	-5.6
2-Propanone, 1-hydroxy-3-(4-hydroxy-3-methoxyphenyl)	586459	-6.9	-6.5	-4.1	-4.9	-5.9	-5.6
Retinoic acid	444795	**-10.2**	-9.2	-5.2	-5.1	-7.6	-7.7
Octahydro-9-phenanthrene methanol	607779	-9.3	-8.3	-4.9	-5	-6.8	-7.3
Epoxylathyrol	56841080	0	-8.9	-5.2	-5.8	-6.7	-7
Beta –Sitosterol	222284	-8	**-9.7**	-5.6	-5.4	-8	-7.6
24-Noroleana-3,12-diene	15427754	-1.6	-9.3	**-6.3**	**-6.3**	**-8**	**-8.8**
Standard (Diazepam, Fluoxetine, Diazepam, Paracetamol, Estreptoquinasa, Albendazole)		-8.5	-9.1	-4.9	-3.9	-6.5	-6.3

Abbreviation: The human monoamine oxidase (PDB: 2Z5X), human serotonin transporter (PDB: 5I6X), human $GABA_A$ receptor alpha1-beta2-gamma2 subtype (PDB: 6X3T), microsomal prostaglandin E synthase 1 (mPGES-1) (PDB: 4YK5), human tissue-type plasminogen activator (tPA) (PDB: 1A5H), and tubulin-colchicine: stathmin-like domain complex regulator (PDB: 1SA0)

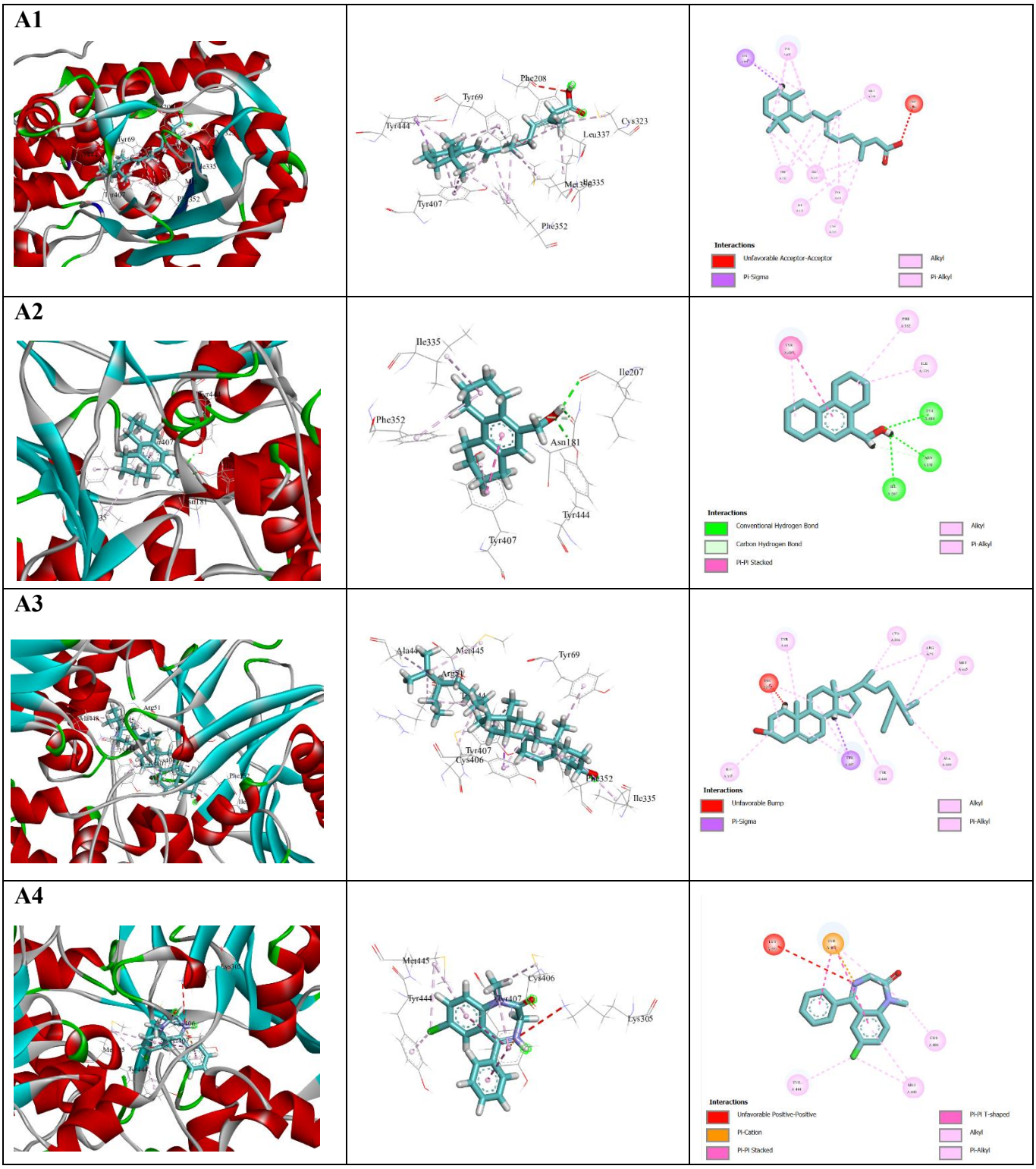
Supplementary Table S5: In silico binding affinity and non-bonding interaction of selected phytochemicals of SIF-ME for Anxiolytic, Antidepressant, Locomotor, Antipyretic, Thrombolytic, and Anthelmintic activities, respectively.

Section number	Receptor	Compound	Binding Affinity (kcal/mol)	Bond type	Amino acids
1	2Z5X	Retinoic acid	-10.2	Alkyl	LEU337, MET350, CYS323, ILE335,
				Pi-Alkyl	TYR69, PHE352, TYR407, TYR444
				Pi-Sigma	TYR444,
				Pi-Pi Stacked	TYR407
		Octahydro-9-phenanthrene methanol	-9.3	Conventional Hydrogen	TYR444, ASN181, ILE207
				Carbon Hydrogen	ASN181

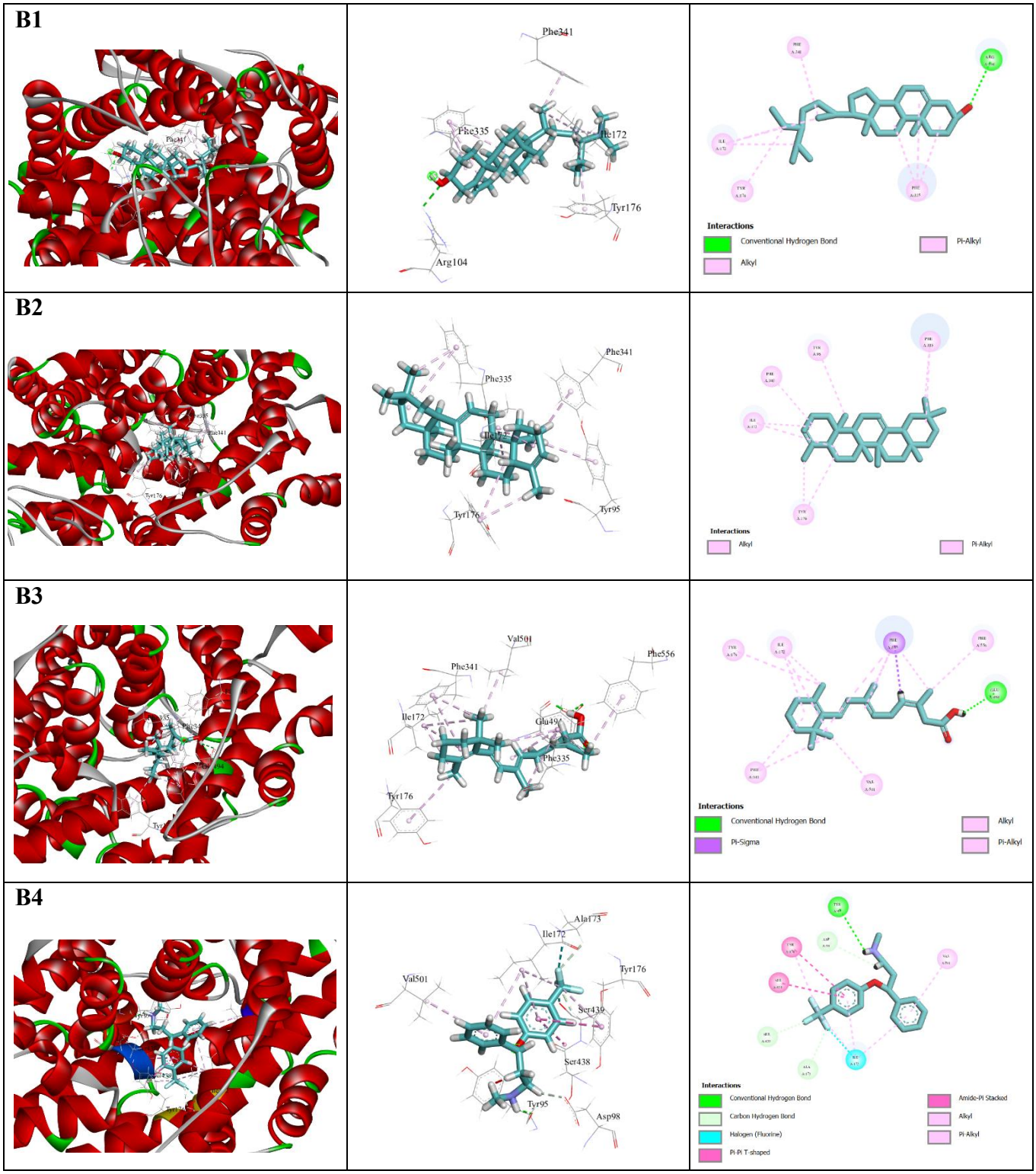
				Alkyl	ILE335
				Pi-Alkyl	PHE352, TYR407
		Beta-sitosterol	-8	Alkyl	ALA448, ILE335, ARG51, CYS406, MET445
				Pi-Alkyl	TYR69, PHE352, TYR407, TYR444
				Pi-Sigma	TYR407
		Diazepam (**Standard**)	-8.5	Alkyl	CYS406, MET445
				Pi-Alkyl	TYR444, MET445
				Pi-Pi Stacked	TYR407
				Pi-Pi T-shaped	TYR407
				Pi-Cation	TYR407
2	5I6X	Beta-sitosterol	-9.7	Conventional Hydrogen	ARG104
				Alkyl	ILE172
				Pi-Alkyl	TYR176PHE335
		24-Noroleana-3,12-diene	-9.3	Conventional Hydrogen	ILE172
				Pi-Alkyl	TYR95, TYR176, PHE335, PHE341
		Retinoic acid	-9.2	Conventional Hydrogen	GLU494
				Alkyl	ILE172, VAL501
				Pi-Alkyl	TYR176, PHE335, PHE341, PHE341
				Pi-Sigma	PHE335
		Fluoxetine (**Standard**)	-9.1	Conventional Hydrogen	TYR95
				Carbon Hydrogen	ASP98
				Hydrogen Bond	ALA173, SER439
				Halogen (Chlorine)	ILE172, SER439
				Alkyl	ILE172
				Pi-Alkyl	PHE556, TYR176, ILE172, VAL501
				Amide-Pi Stacked	SER438, SER439
				Pi-Pi T-shaped	TYR176
3	6X3T	24-Noroleana-3,12-diene	-6.3	Alkyl	PRO233, LEU240
		Beta-sitosterol	-5.6	Conventional Hydrogen	ILE228
				Carbon Hydrogen	ILE228
				Alkyl	PRO233, LEU240, LEU232
		Epoxylathyrol	-5.2	Carbon Hydrogen	PRO233, THR237
				Alkyl	LEU269, LEU240

		Diazepam (**Standard**)	-4.9	Carbon Hydrogen	THR237,
				Alkyl	LEU269, MET236, PRO233
				Pi-Alkyl	PRO233
4	4YK5	24-Noroleana-3,12-diene	-6.3	Alkyl	ARG70, ARG73
				Pi-Alkyl	TYR130
		Epoxylathyrol	-5.8	Conventional Hydrogen	ARG126
				Alkyl	ARG70, ARG73
				Pi-Alkyl	TYR130
		Beta –Sitosterol	-5.4	Alkyl	ALA138, LEU135, PRO81, PRO81, CYS137
				Pi-Alkyl	TYR130
		Paracetamol (**Standard**)	-3.9	Alkyl	TYR117, ARG126
				Pi-Alkyl	ARG126
5	1A5H	24-Noroleana-3,12-diene	-8	Alkyl	CYS42, LEU41
				Pi-Alkyl	HIS57
		Beta –Sitosterol	-8	Carbon Hydrogen	ASP97
				Alkyl	ARG174, LEU217
				Pi-Alkyl	TYR99, TRP215
		Retinoic acid	-7.6	Conventional Hydrogen	THR175
				Carbon Hydrogen	ARG174
				Alkyl	LEU217, ARG174
				Pi-Alkyl	HIS57, TYR99, TRP215
		Estreptoquinasa (**Standard**)	-6.5	Conventional Hydrogen	THR175
				Carbon Hydrogen	THR175, ASP97
				Pi-Alkyl	TYR99, TRP215
6	1SA0	24-Noroleana-3,12-diene	-8.8	Alkyl	CYS24, LEU248, ALA250, LYS254, LEU255, ALA354, CYS241
		Retinoic acid	-7.7	Conventional Hydrogen	ASN167
				Alkyl	CYS241, LEU248, ALA250, ALA316, ALA354, LEU255, ILE378, LYS352
				Pi-Alkyl	TYR202
		Beta-sitosterol	-7.6	Alkyl	CYS241, LEU248, ALA250, ALA316, ALA354, LEU255, LYS254, LYS352
		Albendazole (**Standard**)	-6.3	Conventional Hydrogen	MET259, ASN258
				Carbon Hydrogen	MET259, ASN258

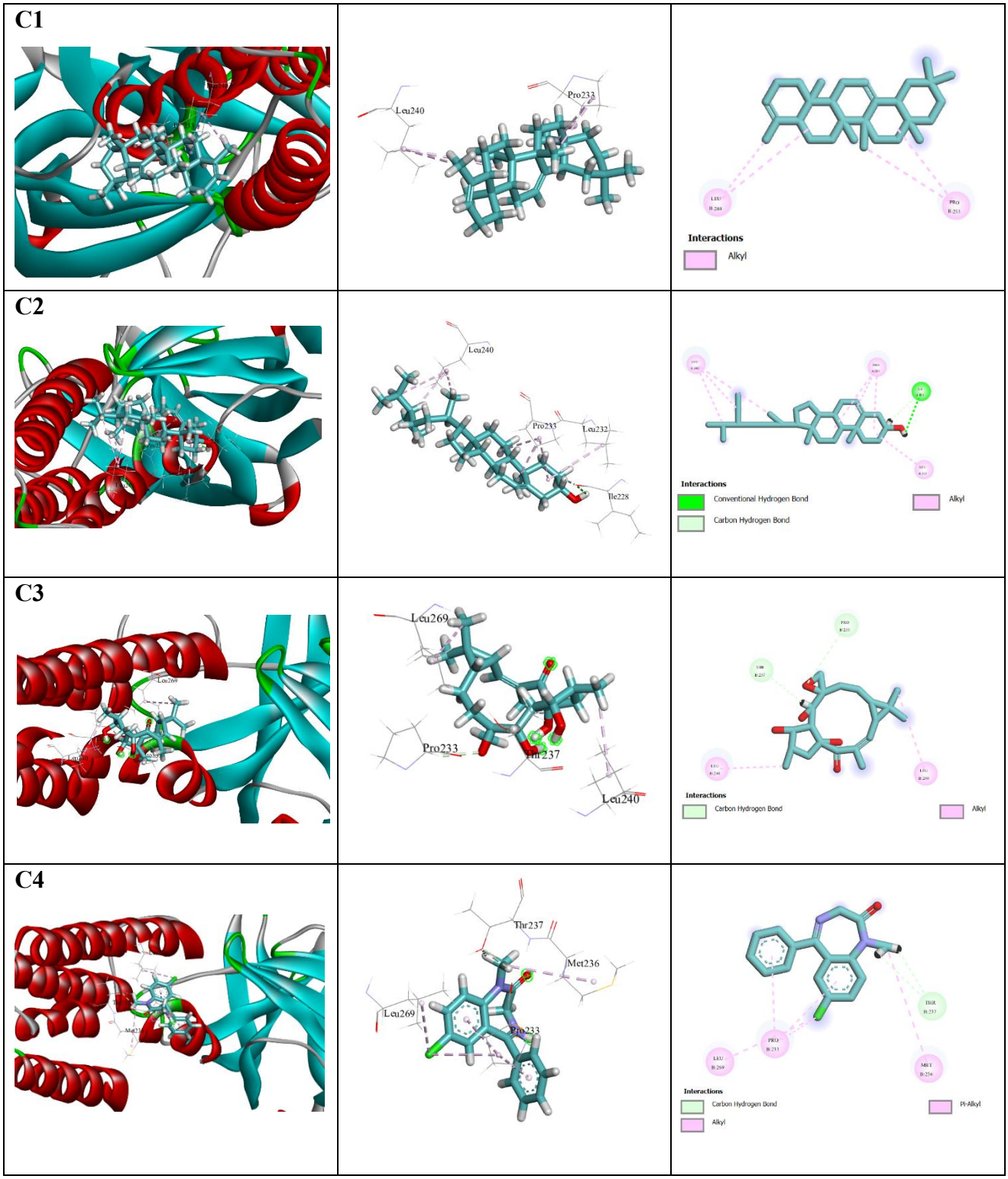
	Alkyl	ALA316, ALA354, ILE347, CYS241, VAL318
	Pi-Alkyl	ALA316, LYS352, LYS352
	Pi-Sulfur	MET259



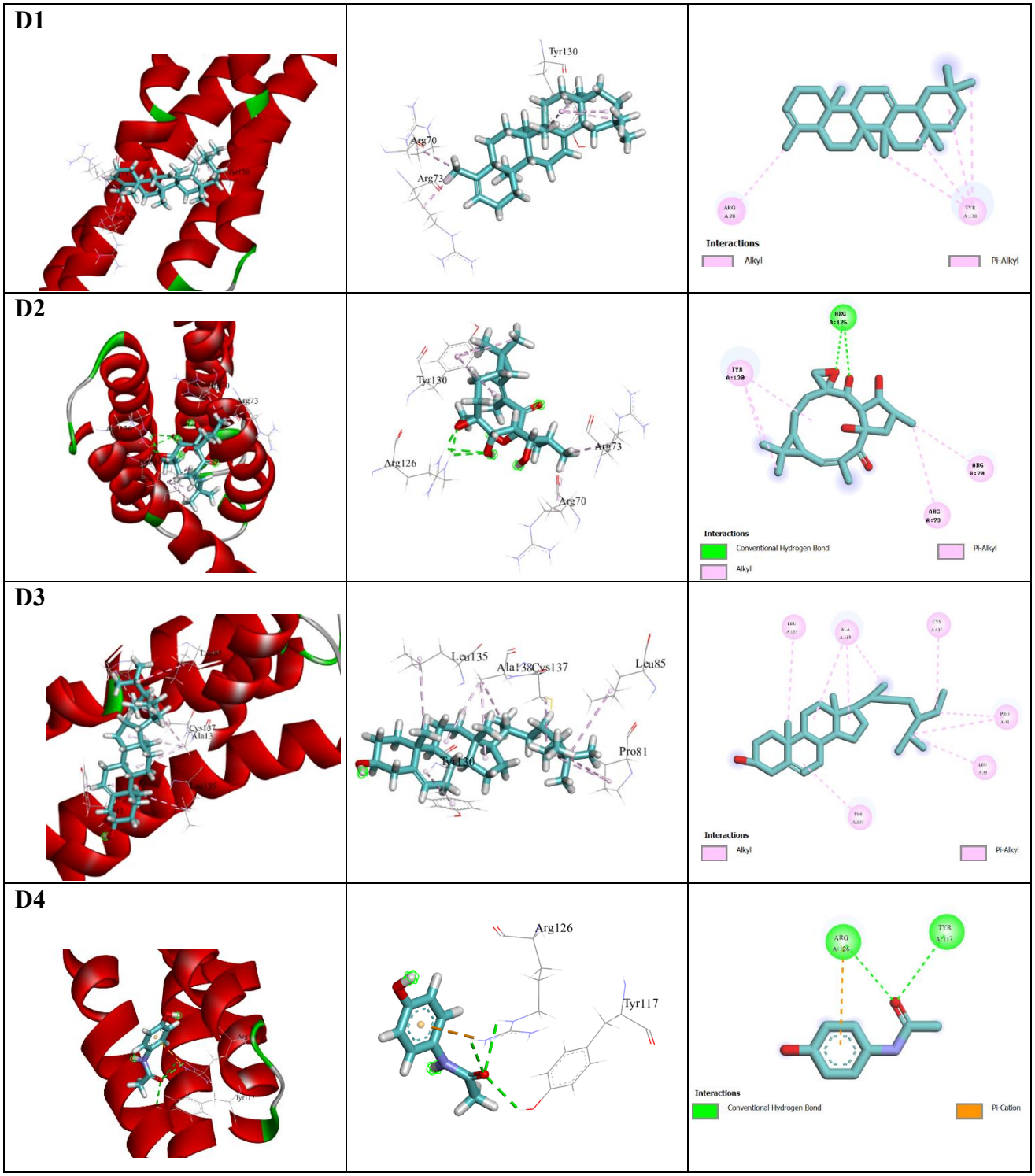
Supplementary Figure S1: Molecular docking interaction of compounds against the human monoamine oxidase (PDB: 2Z5X). Where A1 is Retinoic acid, A2, is Octahydro-9-phenanthrene methanol, A3 is Beta-sitosterol, and A4 is Diazepam (**Standard**).



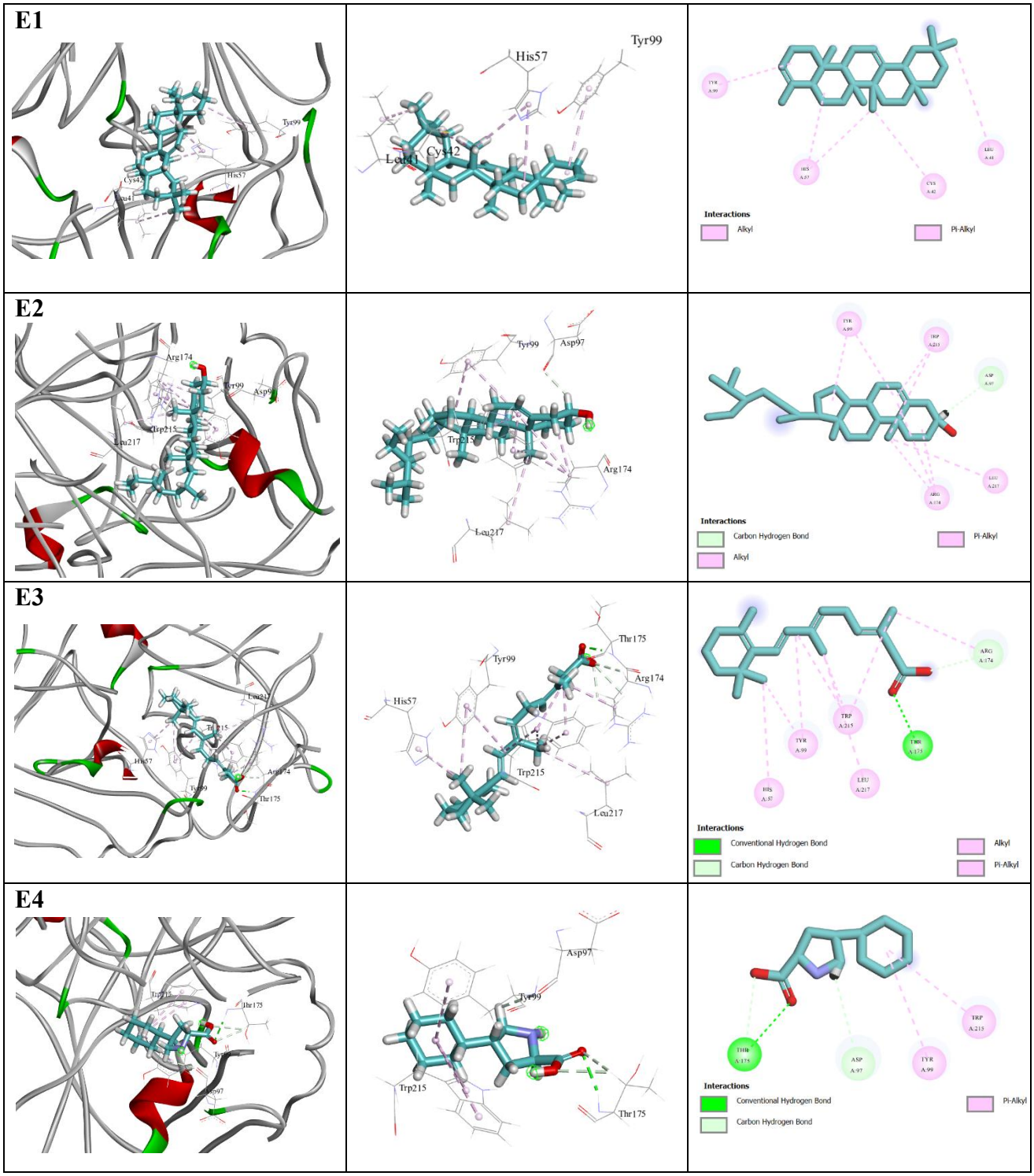
Supplementary Figure S2: Molecular docking interaction of compounds against the human serotonin transporter (PDB: 5I6X). Where B1 is Beta-sitosterolm, B2 is 24-Noroleana-3,12-diene, B3 is Retinoic acid, and B4 is Fluoxetine (**Standard**).



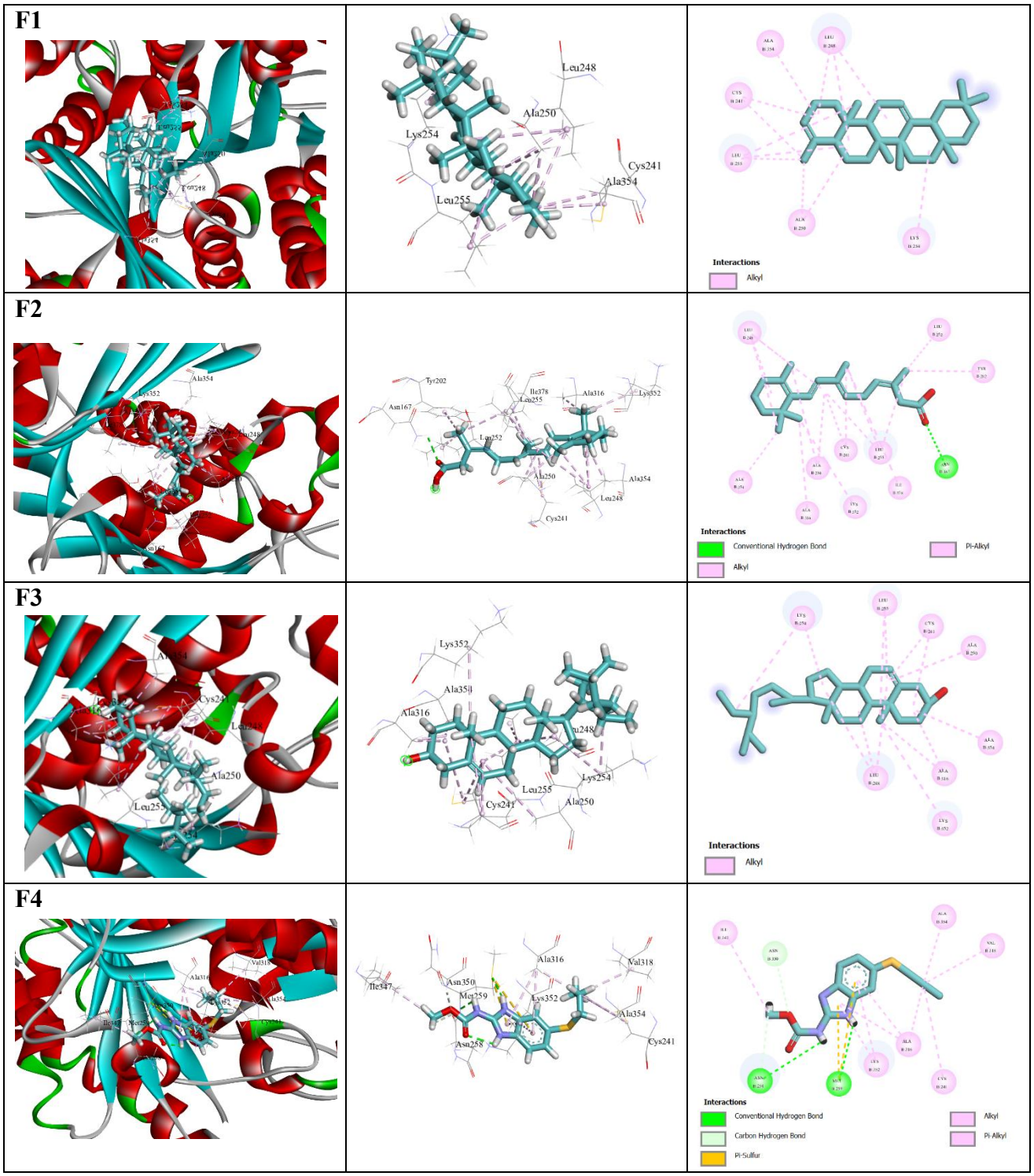
Supplementary Figure S3: Molecular docking interaction of compounds against the human $GABA_A$ receptor alpha1-beta2-gamma2 subtype (PDB: 6X3T). Where C1 is 24-Noroleana-3,12-diene, C2 is Beta – Sitosterol, C3 is Epoxylathyrol, and C4 is Diazepam (**Standard**).



Supplementary Figure S4: Molecular docking interaction of compounds against the microsomal prostaglandin E synthase 1 (mPGES-1) (PDB: 4YK5). Where D1 is 24-Noroleana-3,12-diene, D2 is Epoxylathyrol, D3 is Beta-sitosterol, and D4 is Paracetamol (**Standard**).



Supplementary Figure S5: Molecular docking interaction of compounds against the human tissue-type plasminogen activator (tPA) (PDB: 1A5H). Where E1is 24-Noroleana-3,12-diene, E2 is Beta-sitosterol, E3 is Retinoic acid, and E4 is Estreptoquinasa (**Standard**).



Supplementary Figure S6: Molecular docking interaction of compounds against the tubulin-colchicine: stathmin-like domain complex regulator (PDB: 1SA0). Where F1 is 24-Noroleana-3,12-diene, F2 is Retinoic acid, F3 is Beta-sitosterol, and F4 is Albendazole (**Standard**).