

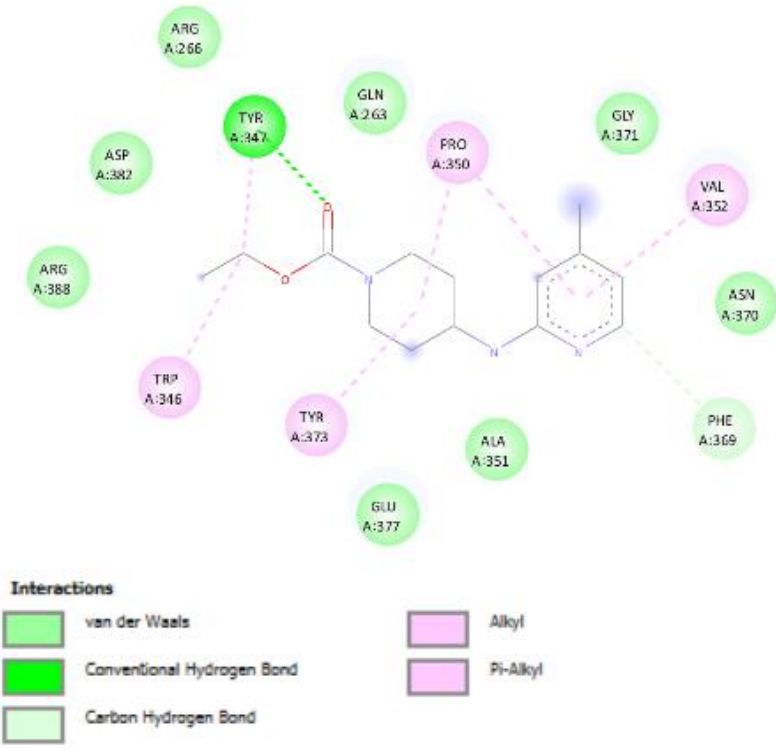
Table S1. Two-way ANOVA of DPPH Inhibition Activity

DPPH; Dunnett's multiple comparisons test	Mean Diff.	95.00% CI of diff.	Below threshold?	Summary	Adjusted P Value
Row 1 or 25 µg/mL					
Trolox/Control vs. rCSE	-0.5600	-2.860 to 1.740	No	ns	0.7966
Trolox/Control vs. aCSE	2.233	-0.06640 to 4.533	No	ns	0.0578
Row 2 or 50 µg/mL					
Trolox/Control vs. rCSE	-0.3667	-2.666 to 1.933	No	ns	0.9055
Trolox/Control vs. aCSE	2.733	0.4336 to 5.033	Yes	*	0.0184
Row 3 or 100 µg/mL					
Trolox/Control vs. rCSE	0.6000	-1.700 to 2.900	No	ns	0.7711
Trolox/Control vs. aCSE	6.467	4.167 to 8.766	Yes	****	<0.0001
Row 4 or 150 µg/mL					
Trolox/Control vs. rCSE	3.577	1.277 to 5.876	Yes	**	0.0022
Trolox/Control vs. aCSE	5.133	2.834 to 7.433	Yes	****	<0.0001
Row 5 or 200 µg/mL					
Trolox/Control vs. rCSE	0.06667	-2.233 to 2.366	No	ns	0.9967
Trolox/Control vs. aCSE	2.840	0.5403 to 5.140	Yes	*	0.0142

Table S2. Two-way ANOVA of ABTS Inhibition Activity

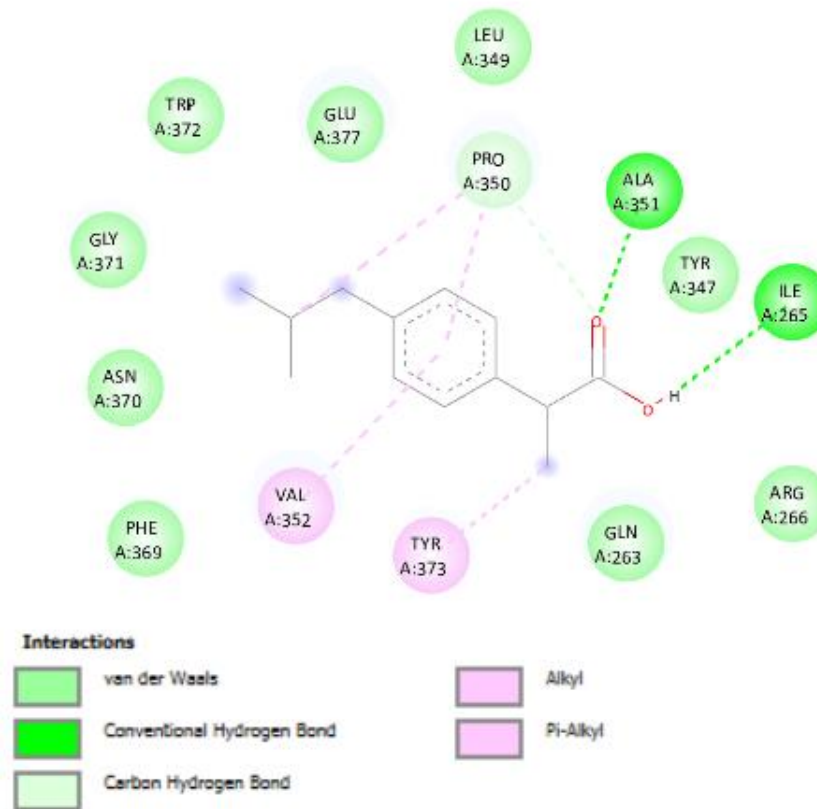
Dunnett's multiple comparisons test	Mean Diff.	95.00% CI of diff.	Below threshold?	Summary	Adjusted P Value
Row 1 or 25 µg/mL					
Trolox/Control vs. rCSE	3.143	0.6042 to 5.683	Yes	*	0.0140
Trolox/Control vs. aCSE	5.973	3.434 to 8.513	Yes	****	<0.0001
Row 2 or 50 µg/mL					
Trolox/Control vs. rCSE	1.970	-0.5692 to 4.509	No	ns	0.1439
Trolox/Control vs. aCSE	8.847	6.307 to 11.39	Yes	****	<0.0001
Row 3 or 100 µg/mL					
Trolox/Control vs. rCSE	4.877	2.337 to 7.416	Yes	***	0.0002
Trolox/Control vs. aCSE	6.973	4.434 to 9.513	Yes	****	<0.0001
Row 4 or 150 µg/mL					
Trolox/Control vs. rCSE	0.1367	-2.403 to 2.676	No	ns	0.9886
Trolox/Control vs. aCSE	3.773	1.234 to 6.313	Yes	**	0.0032
Row 5 or 200 µg/mL					
Trolox/Control vs. rCSE	2.403	-0.1358 to 4.943	No	ns	0.0653
Trolox/Control vs. aCSE	4.400	1.861 to 6.939	Yes	***	0.0007

Table S3. The fully visualization from molecular docking simulation of amino acid interactions throughout the observed CSE substance

iNOS 3E7G		
No.	Substance	Visualization
Native Ligand		
1	3E7G	 <p>Interactions</p> <ul style="list-style-type: none">van der WaalsConventional Hydrogen BondCarbon Hydrogen BondAlkylPi-Alkyl
Control		

1

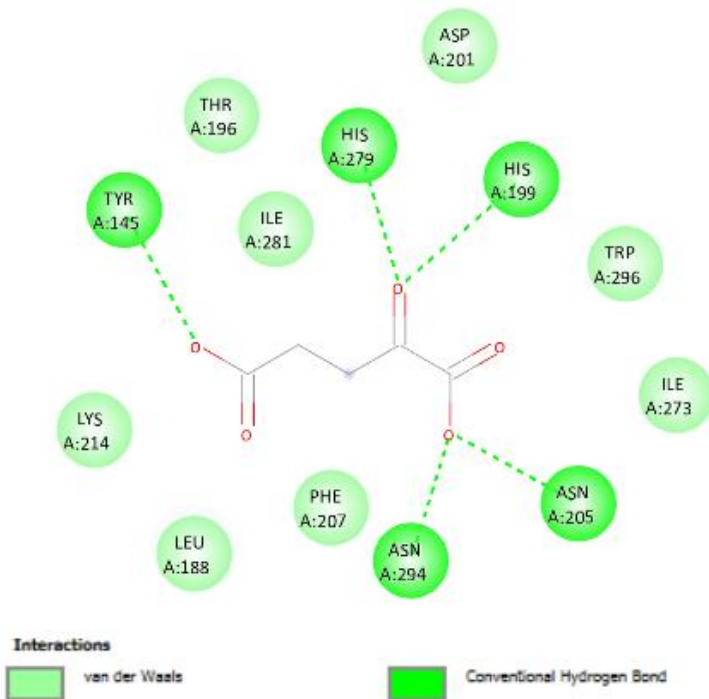
S-ibuprofen



aCSE

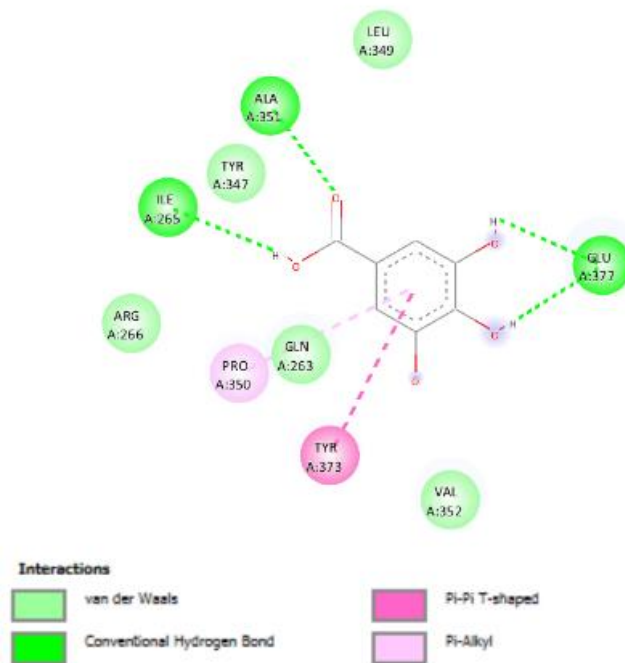
1

Epicatechin



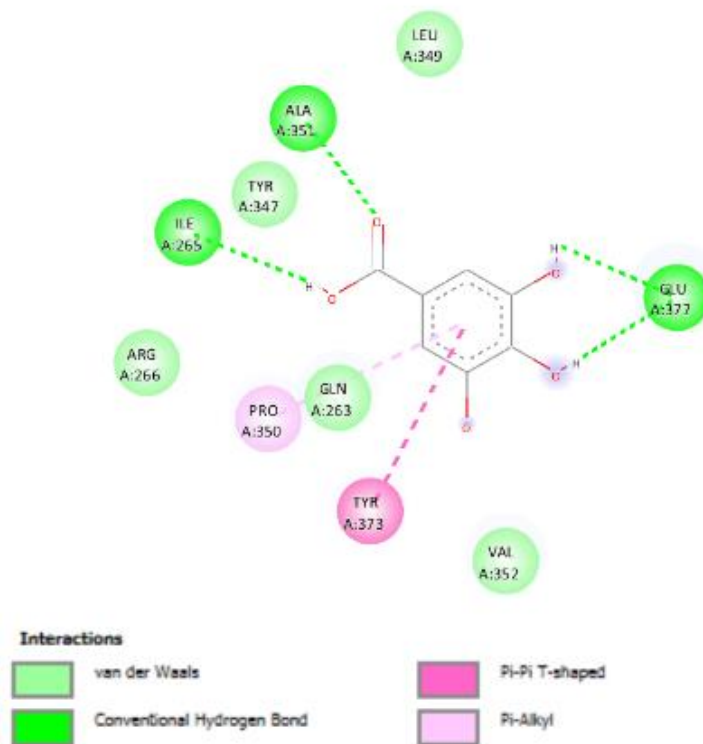
2

Gallic acid



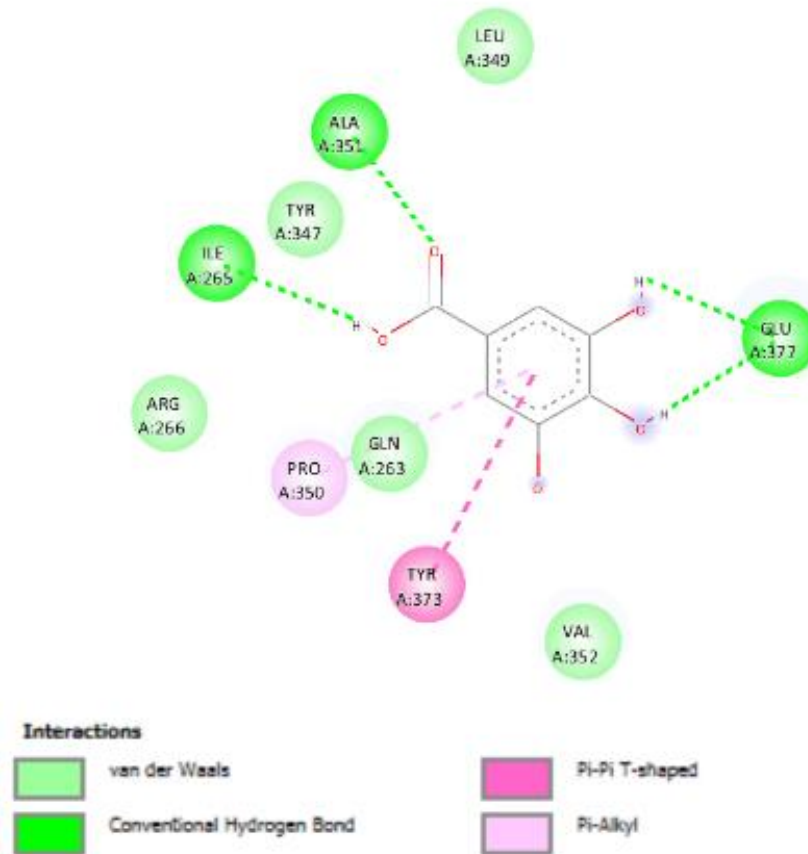
3

4-Hydroxycinnamic acid



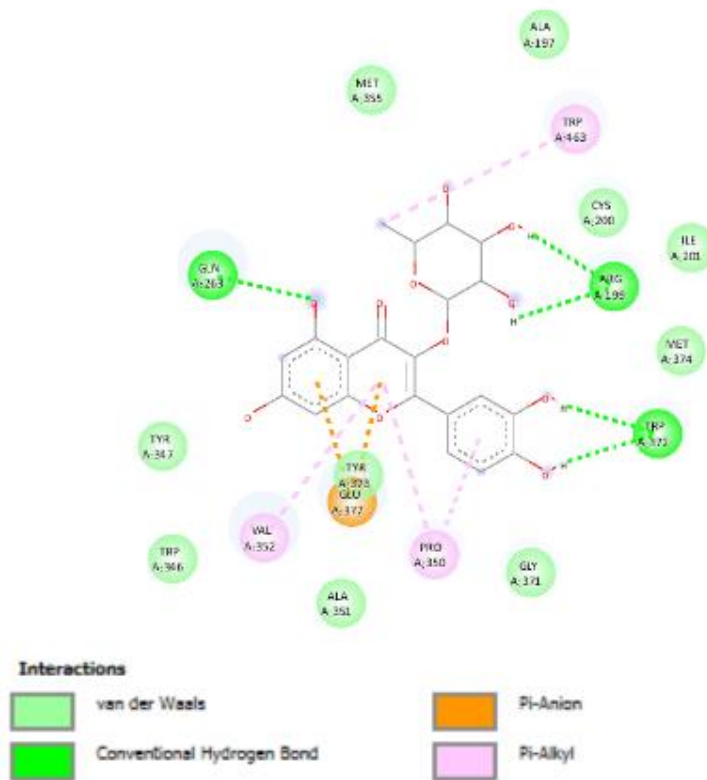
4

Kaempferol



5

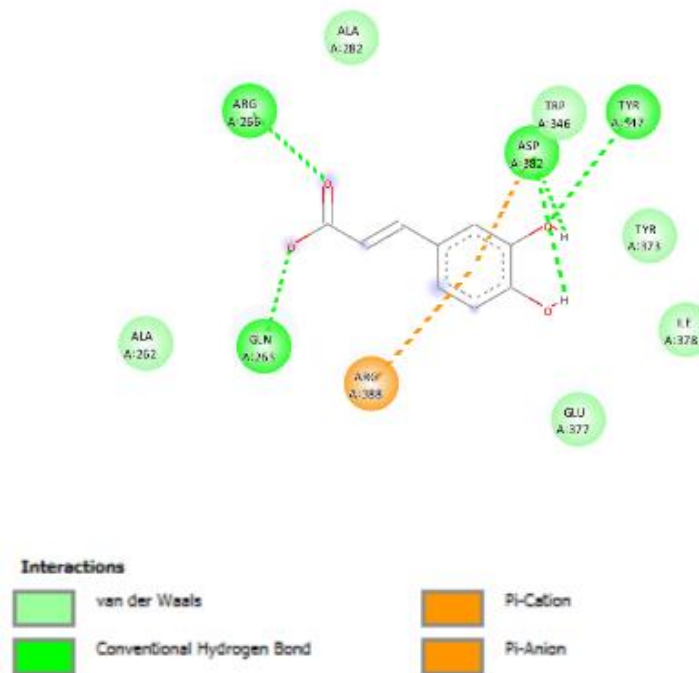
Quercitrin



rCSE

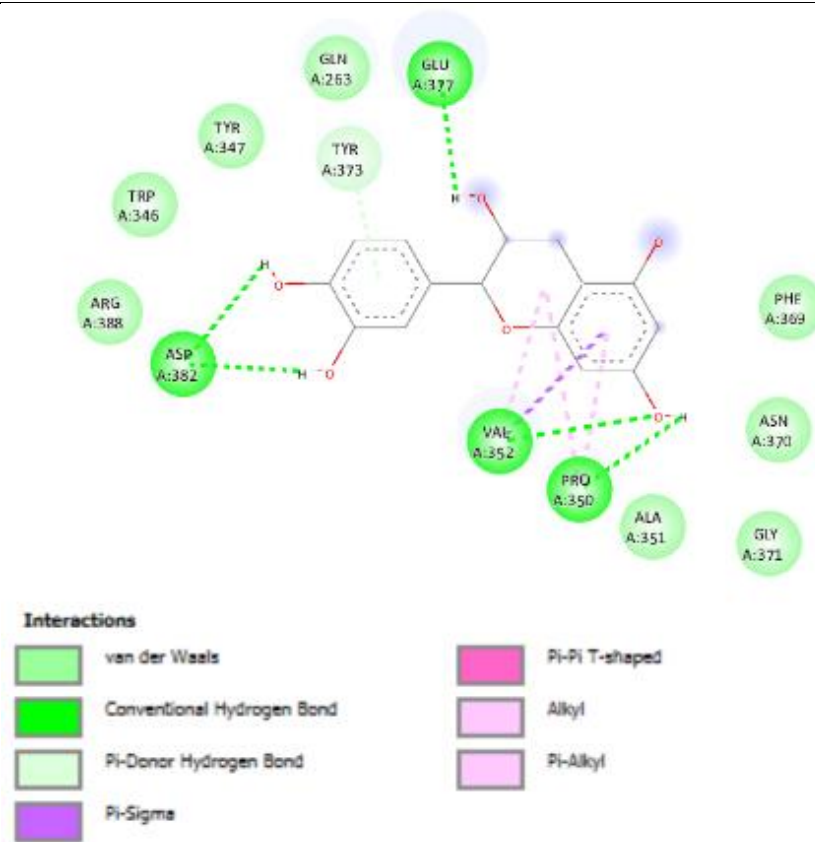
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Caffeic acid



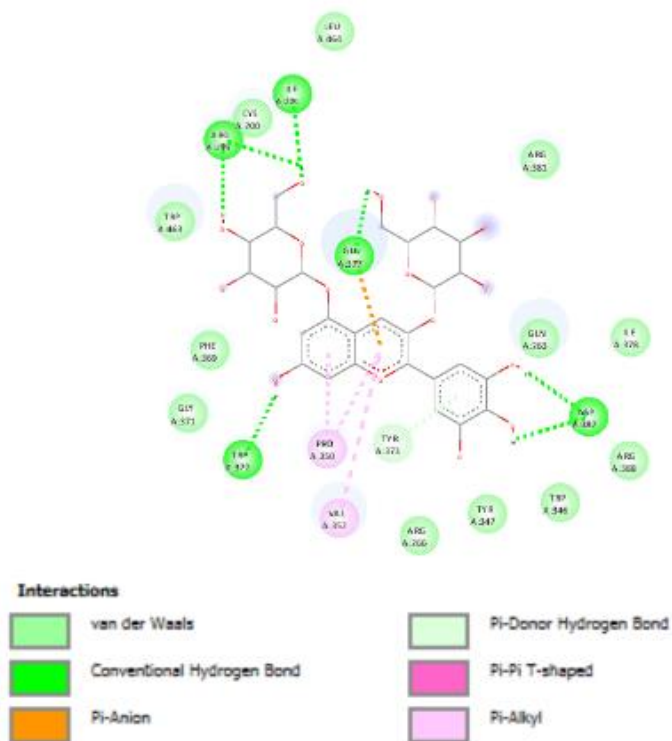
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(+) -Catechin

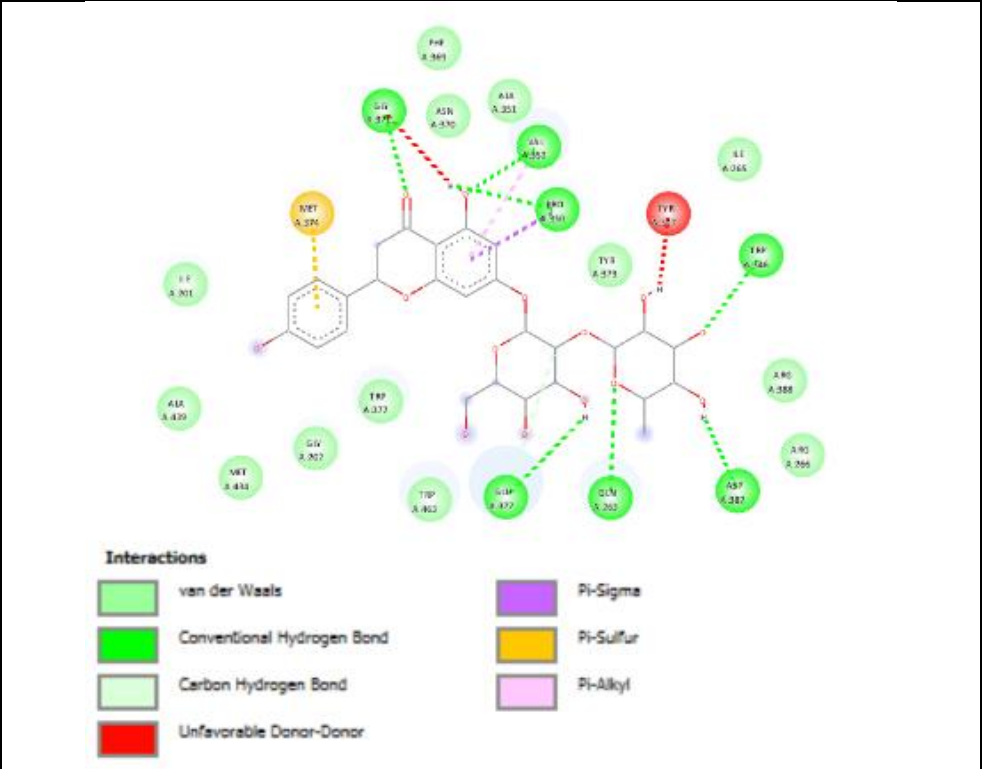


3

(2R,3S,4S,5R,6S)-2-(hydroxymethyl)-6-[7-hydroxy-3-[(2S,3R,4S,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-2-(3,4,5-trihydroxyphenyl)chromenylum-5-yl]oxyoxane-3,4,5-triol

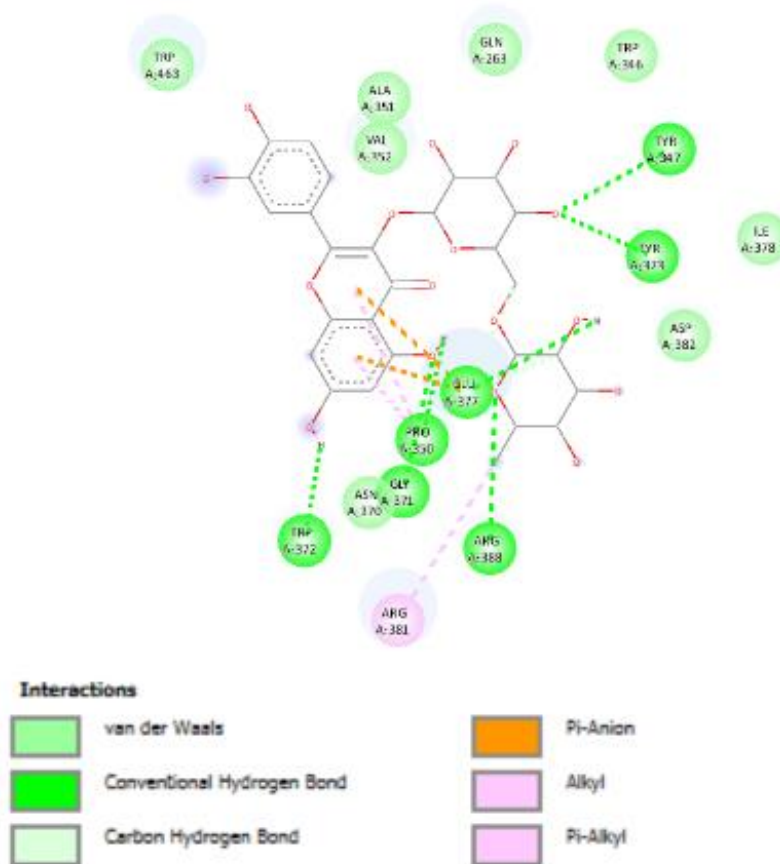


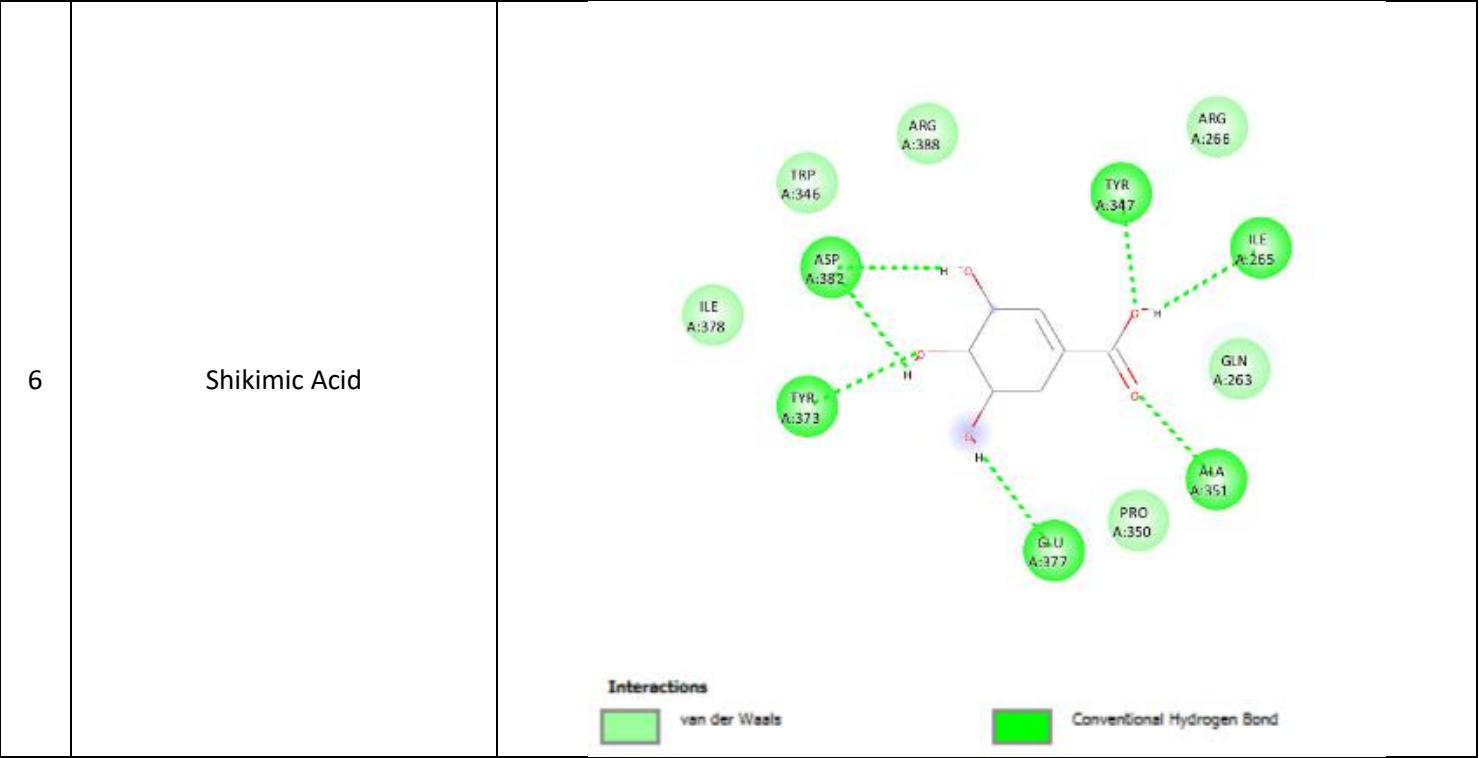
4	Naringin
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5

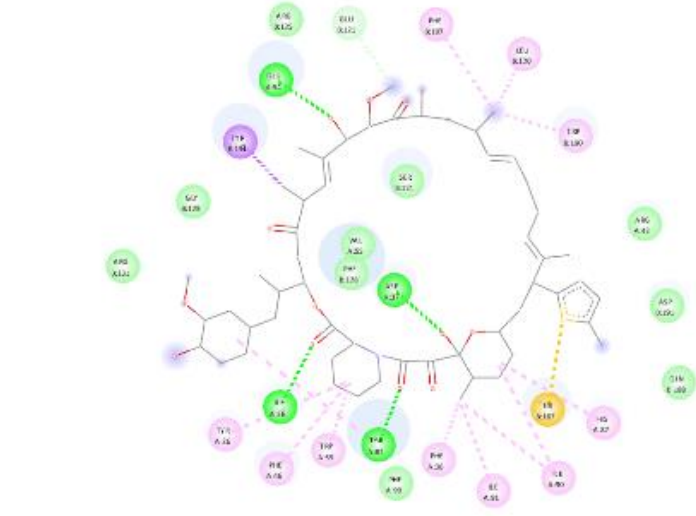
Rutin

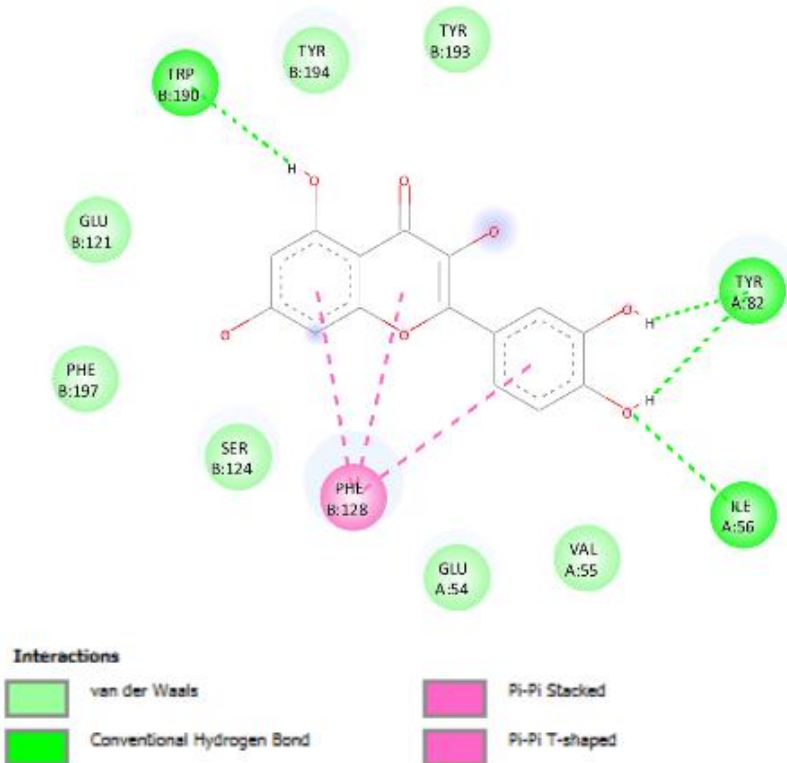
















mTOR

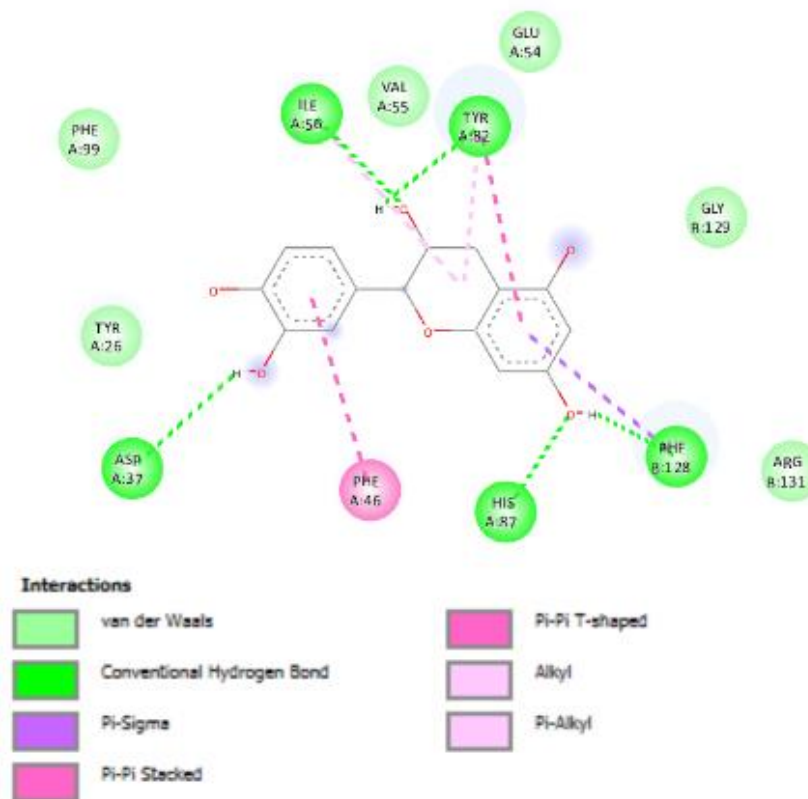
No.	Substance	Visualization
	Native Ligand	

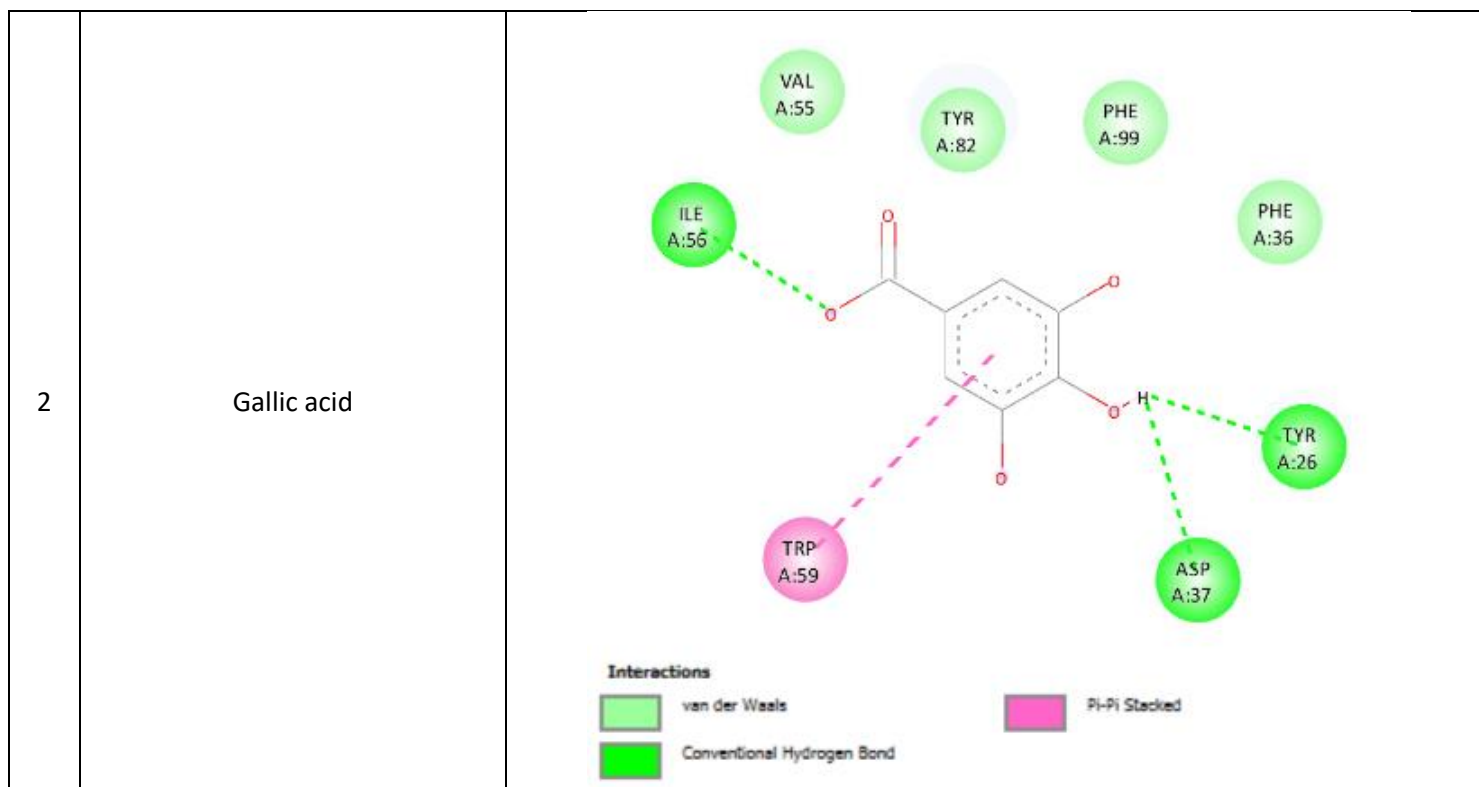
1	3FAP	 <p>Interactions</p> <table><tr><td> van der Waals</td><td> Pi-Sigma</td></tr><tr><td> Conventional Hydrogen Bond</td><td> Alkyl</td></tr><tr><td> Carbon Hydrogen Bond</td><td> Pi-Alkyl</td></tr><tr><td> Sulfur-X</td><td></td></tr></table>	 van der Waals	 Pi-Sigma	 Conventional Hydrogen Bond	 Alkyl	 Carbon Hydrogen Bond	 Pi-Alkyl	 Sulfur-X	
 van der Waals	 Pi-Sigma									
 Conventional Hydrogen Bond	 Alkyl									
 Carbon Hydrogen Bond	 Pi-Alkyl									
 Sulfur-X										
Control										

1	Quercetin	 <p>Interactions</p> <table><tr><td> van der Waals</td><td> Pi-Pi Stacked</td></tr><tr><td> Conventional Hydrogen Bond</td><td> Pi-Pi T-shaped</td></tr></table>	 van der Waals	 Pi-Pi Stacked	 Conventional Hydrogen Bond	 Pi-Pi T-shaped
 van der Waals	 Pi-Pi Stacked					
 Conventional Hydrogen Bond	 Pi-Pi T-shaped					
aCSE						

1

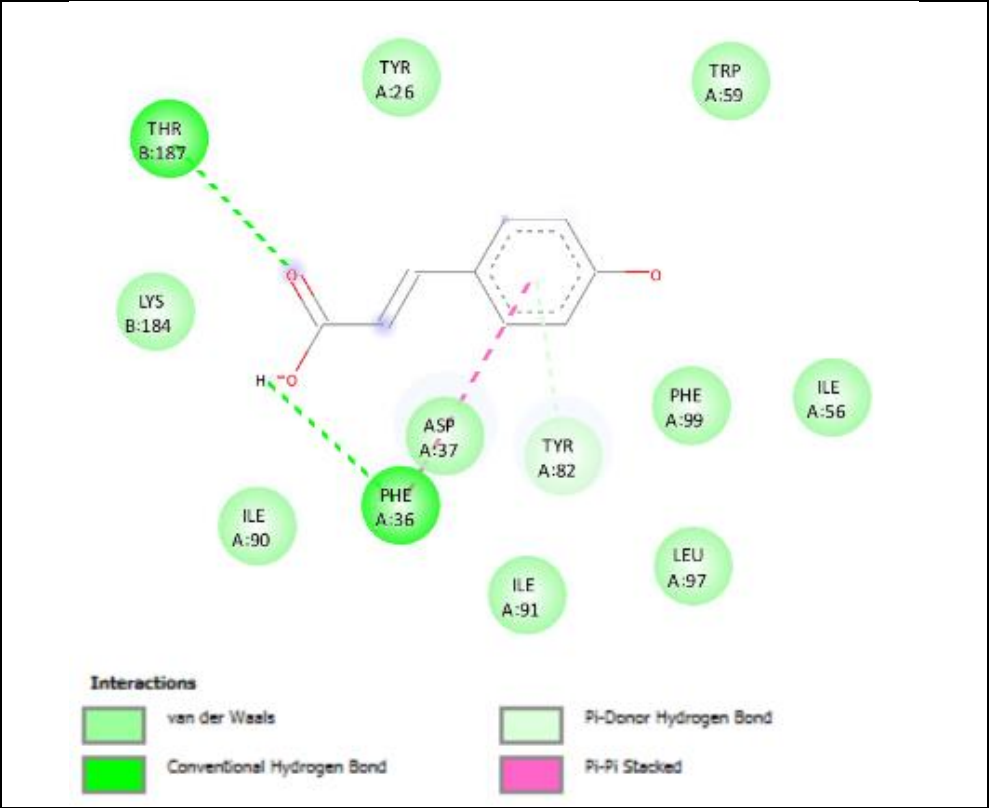
Epicatechin





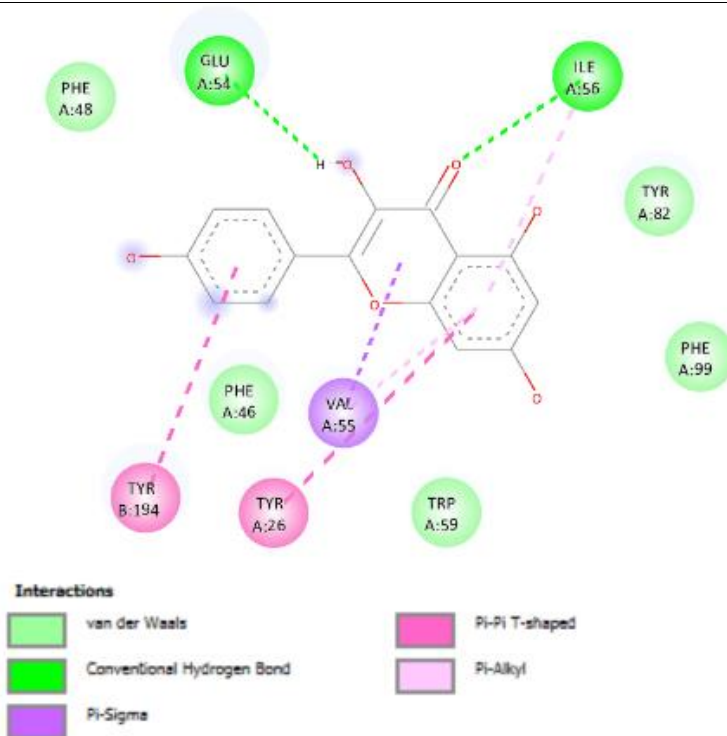
3	4-Hydroxycinnamic acid
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4-Hydroxycinnamic acid



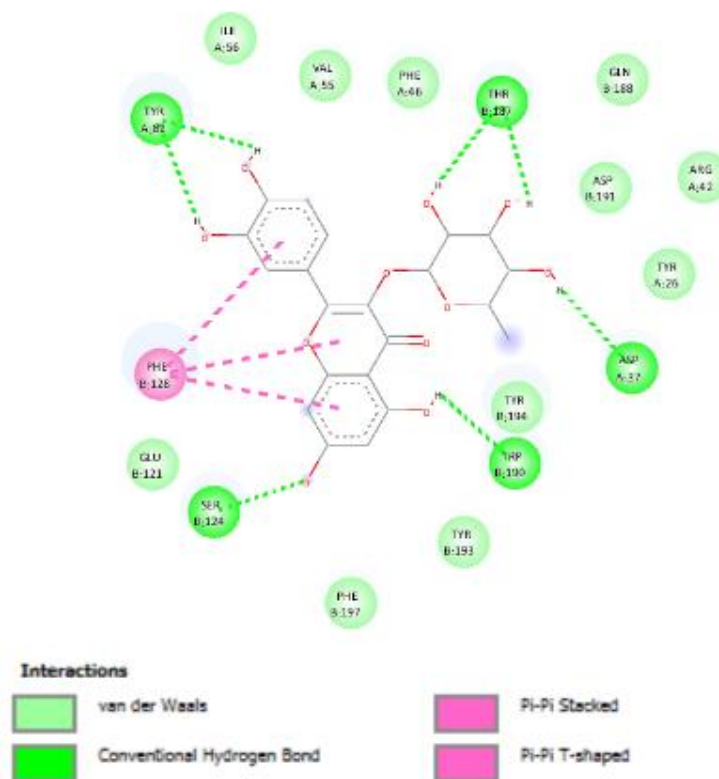
4

Kaempferol



5

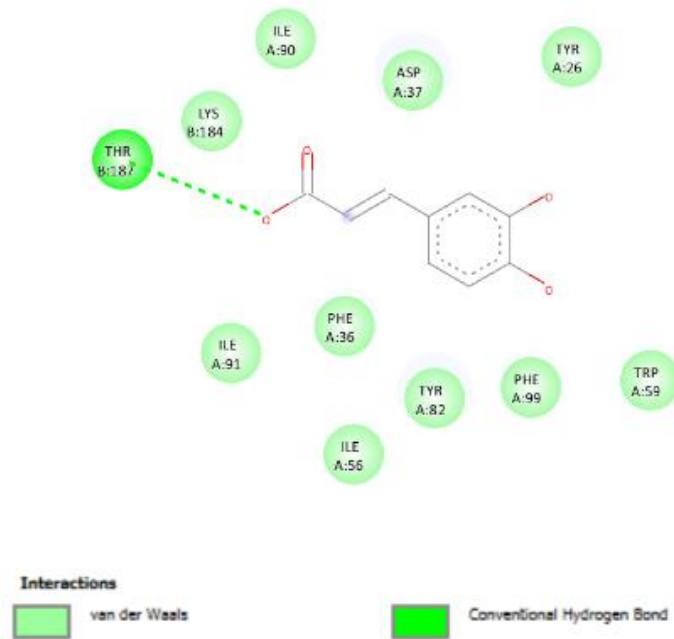
Quercitrin



rCSE

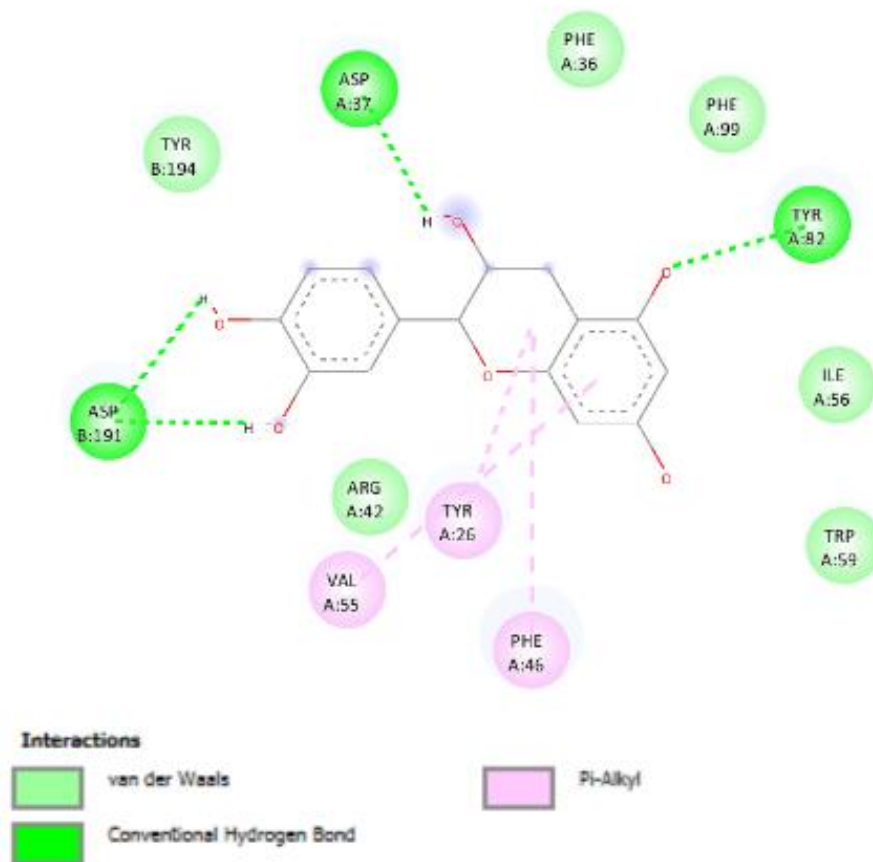
1

Caffeic acid



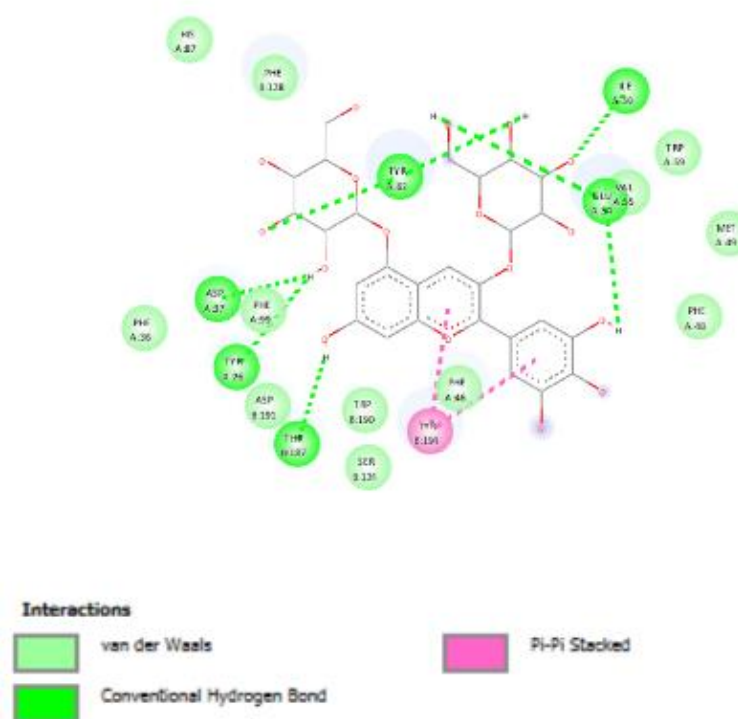
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(+) -Catechin



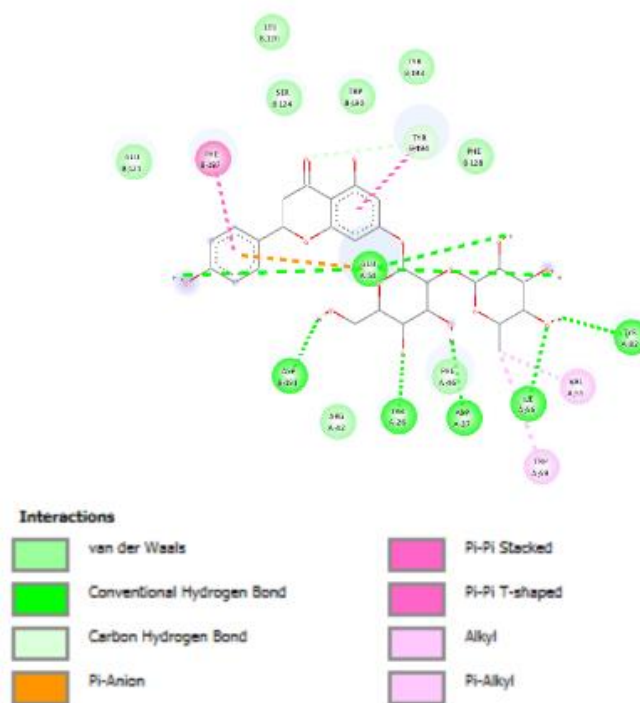
3

(2R,3S,4S,5R,6S)-2-(hydroxymethyl)-6-[7-hydroxy-3-[(2S,3R,4S,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-2-(3,4,5-trihydroxyphenyl)chromenylium-5-yl]oxyoxane-3,4,5-triol



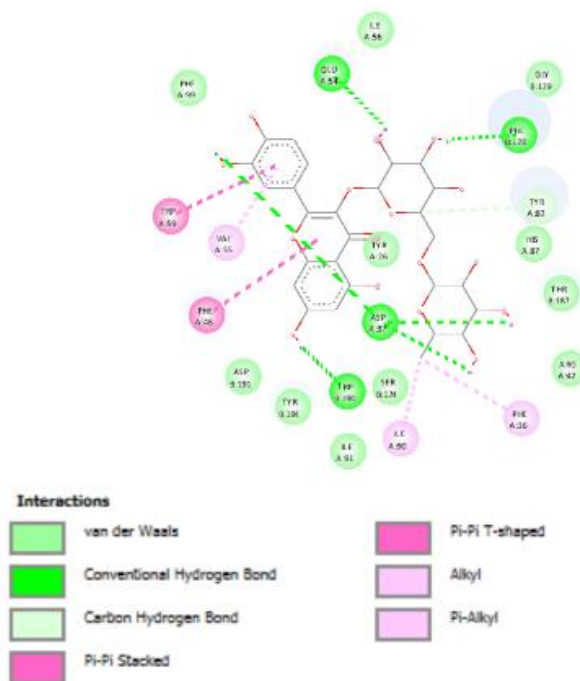
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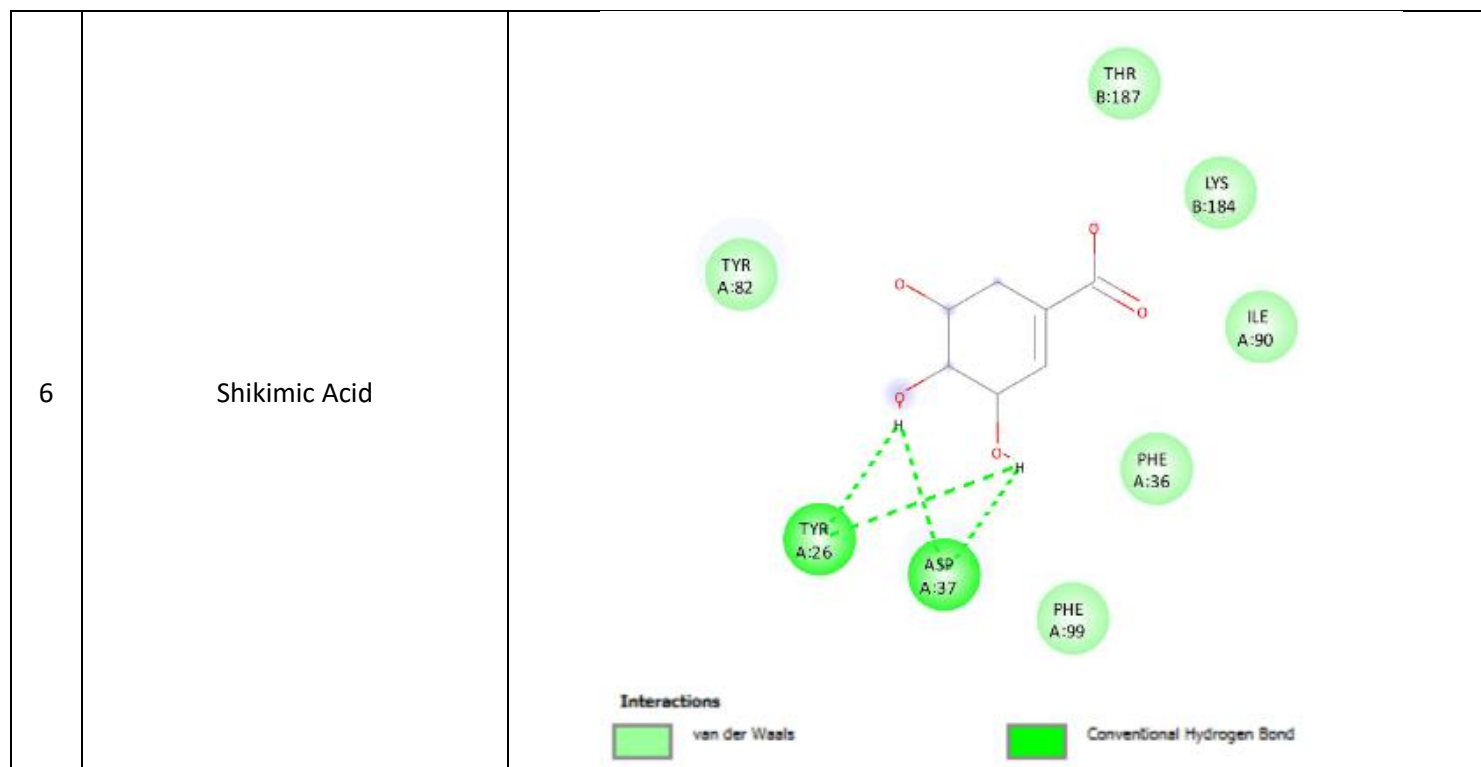
Naringin



5

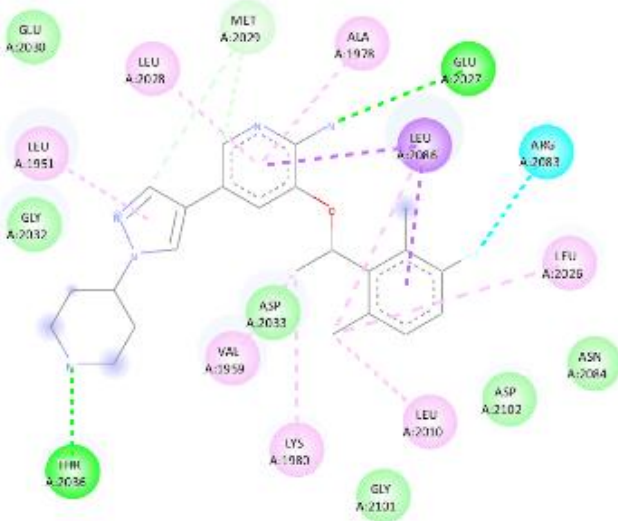
Rutin

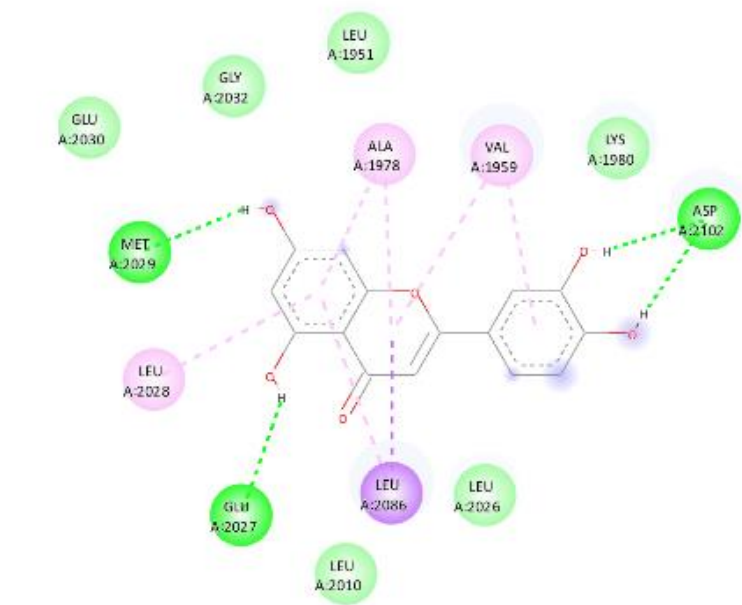




ROS1 Kinase

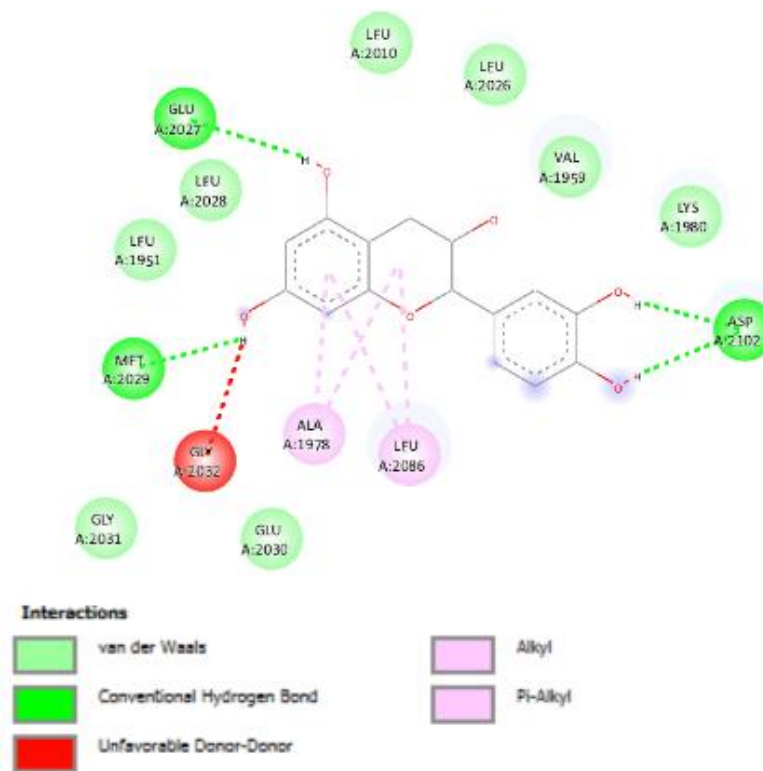
No.	Substance	Visualization
	Native Ligand	

1	3ZBF	 <p>Interactions</p> <table><tr><td> van der Waals</td><td> Pi-Sigma</td></tr><tr><td> Conventional Hydrogen Bond</td><td> Alkyl</td></tr><tr><td> Carbon Hydrogen Bond</td><td> Pi-Alkyl</td></tr><tr><td> Halogen (Fluorine)</td><td></td></tr></table>	 van der Waals	 Pi-Sigma	 Conventional Hydrogen Bond	 Alkyl	 Carbon Hydrogen Bond	 Pi-Alkyl	 Halogen (Fluorine)	
 van der Waals	 Pi-Sigma									
 Conventional Hydrogen Bond	 Alkyl									
 Carbon Hydrogen Bond	 Pi-Alkyl									
 Halogen (Fluorine)										
Control										

1	Luteolin	 <p>Interactions</p> <ul style="list-style-type: none"> van der Waals Conventional Hydrogen Bond Pi-Sigma Pi-Alkyl
aCSE		

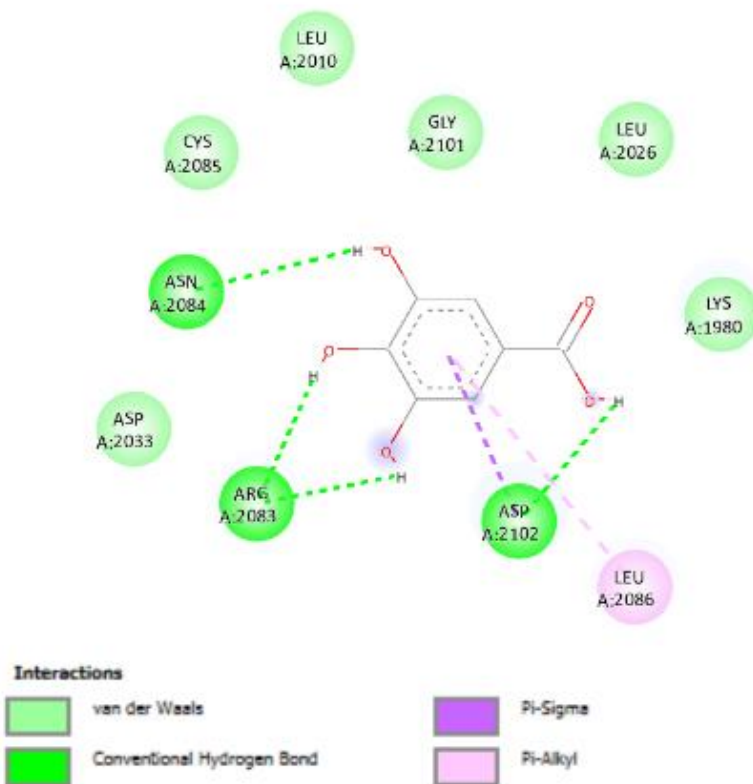
1

Epicatechin



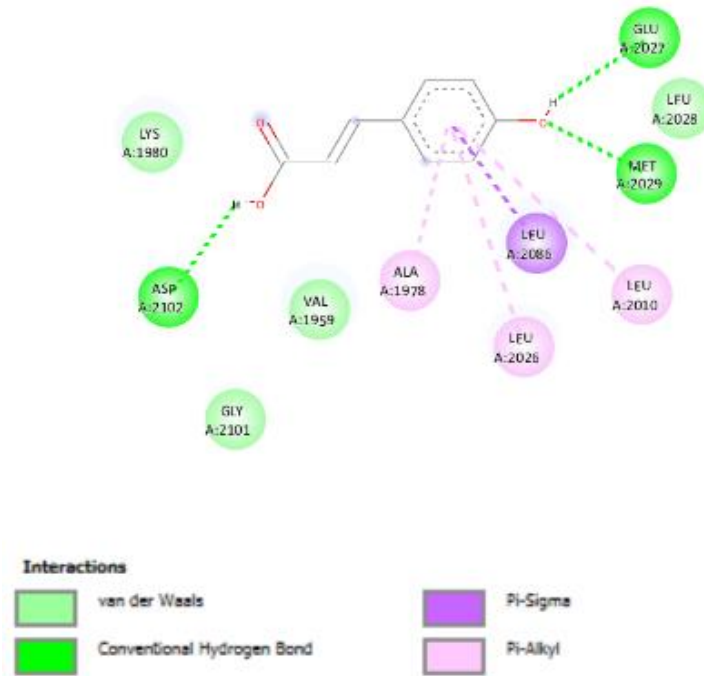
2

Gallic acid



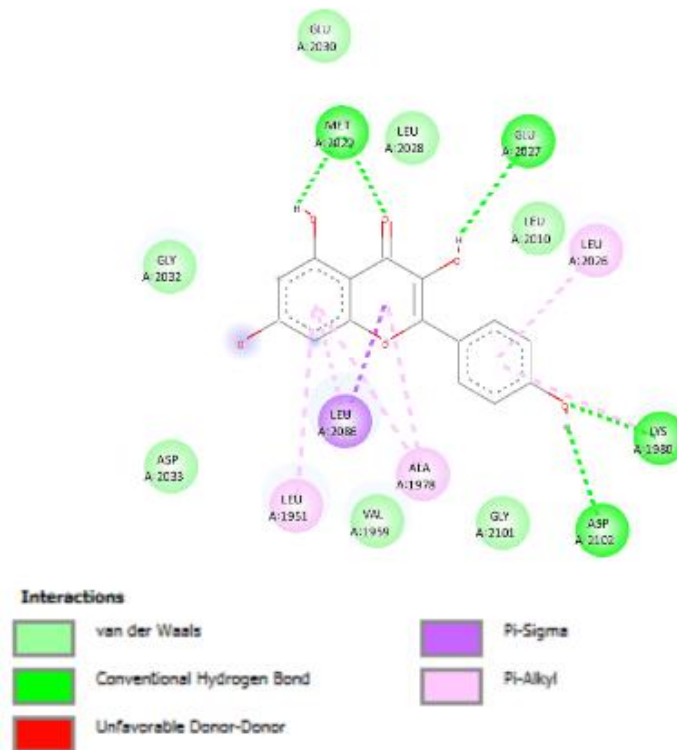
3

4-Hydroxycinnamic acid



4

Kaempferol



5

Quercitrin

Interactions

van der Waals



Conventional Hydrogen Bond



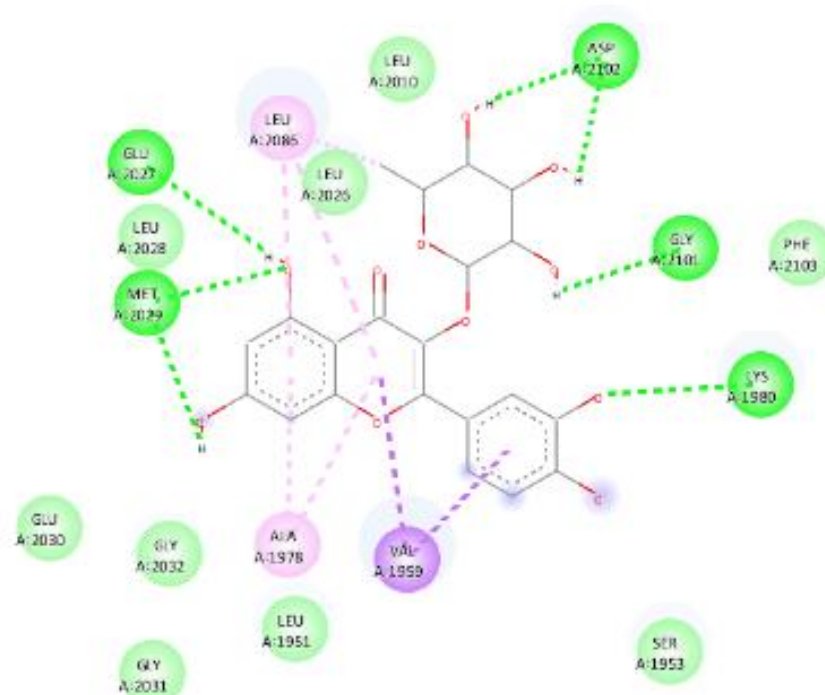
Pi-Sigma



Alkyl



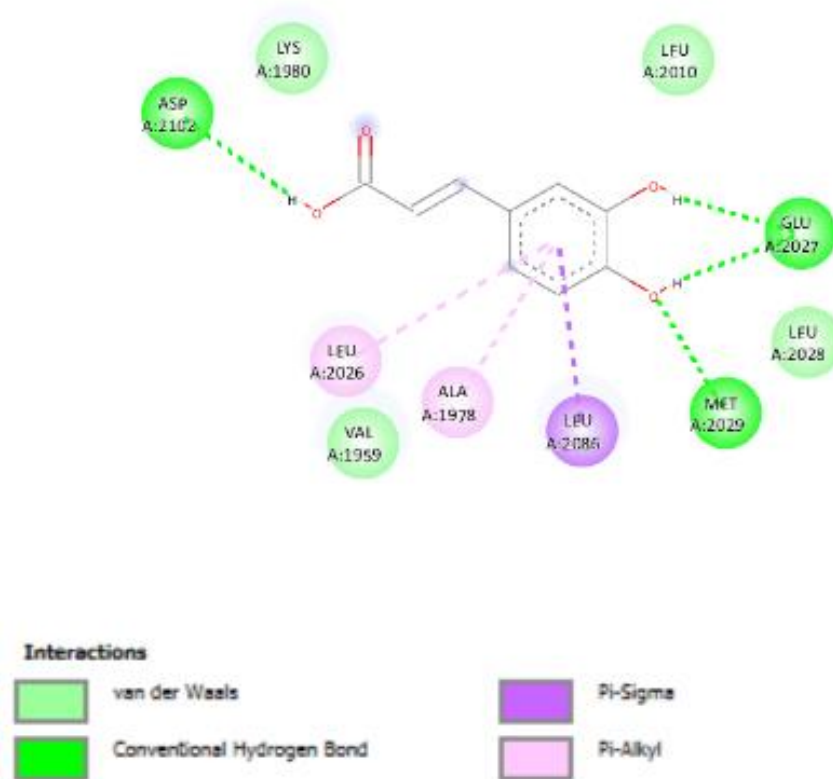
Pi-Alkyl



rCSE

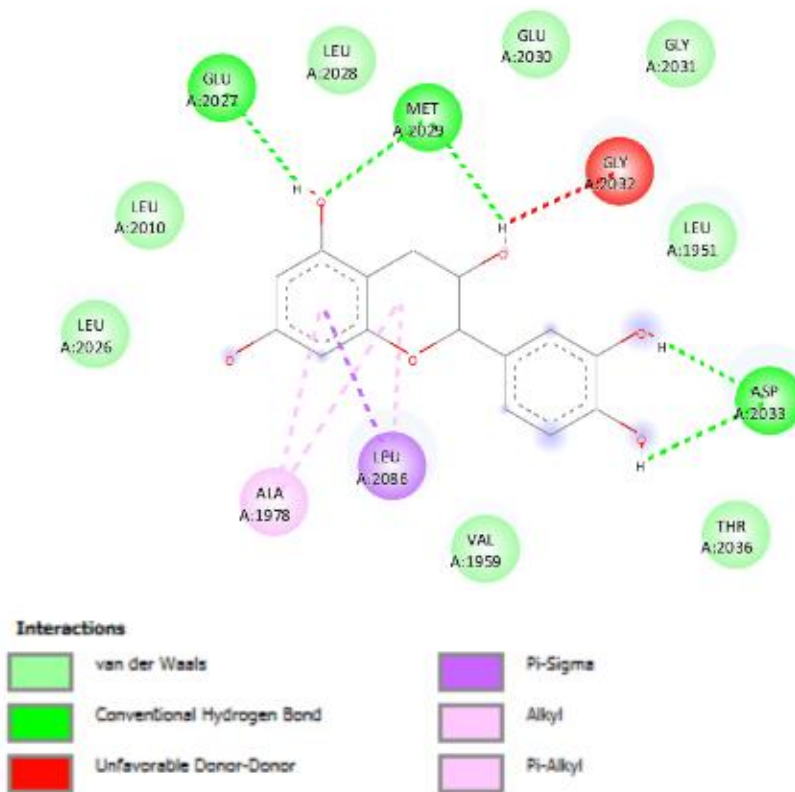
1

Caffeic acid



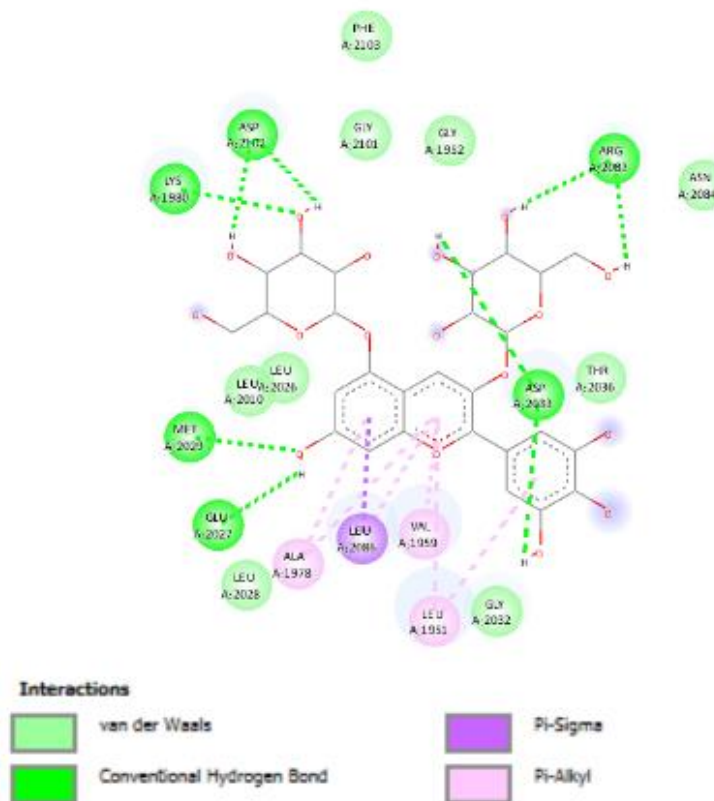
2

(+) -Catechin



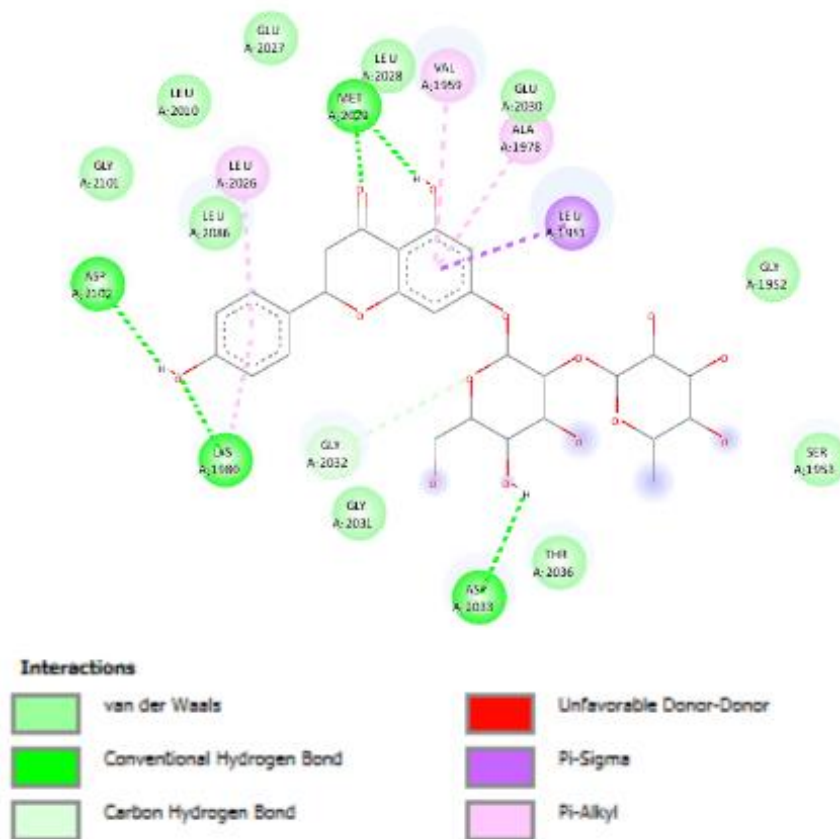
3

(2R,3S,4S,5R,6S)-2-(hydroxymethyl)-6-[7-hydroxy-3-[(2S,3R,4S,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-2-(3,4,5-trihydroxyphenyl)chromenylum-5-yl]oxyoxane-3,4,5-triol



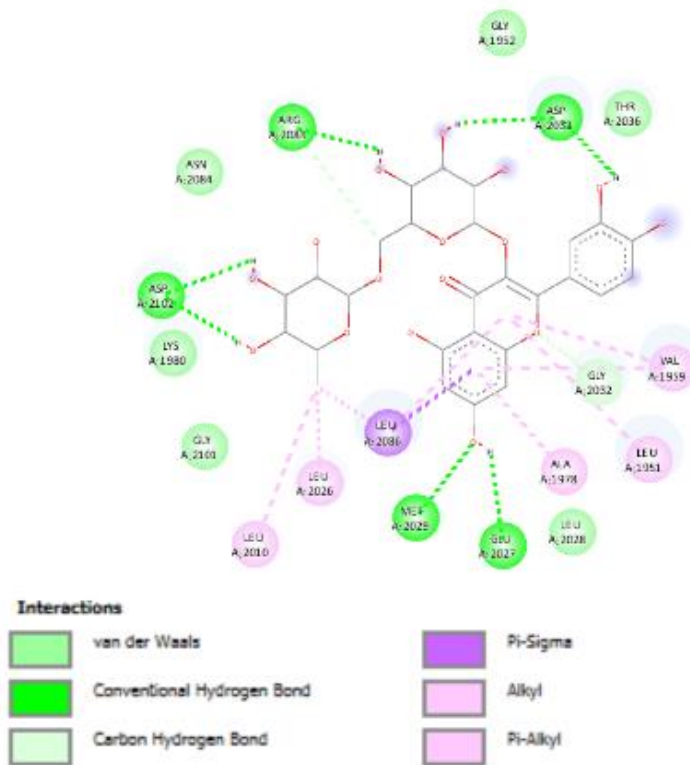
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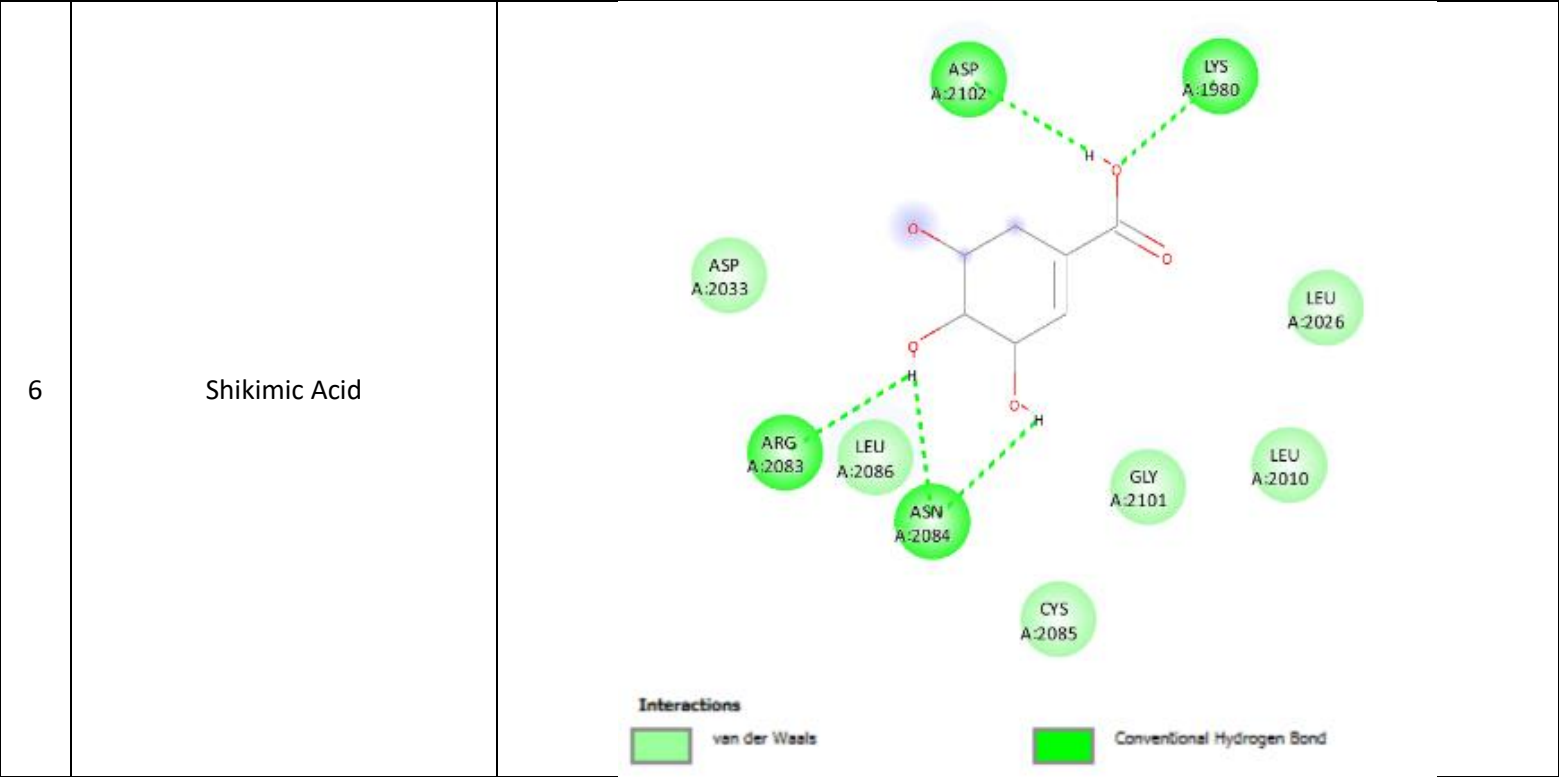
Naringin



5

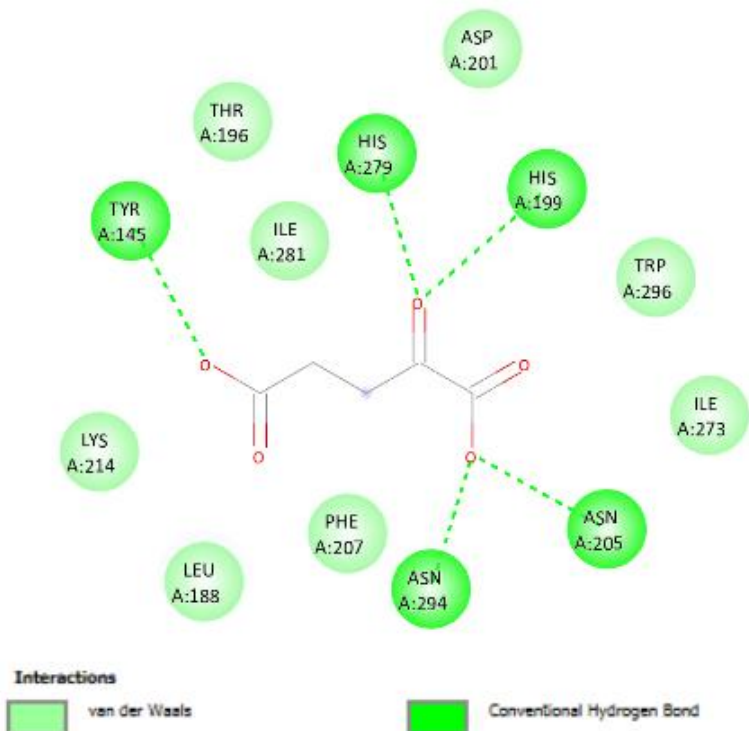
Rutin





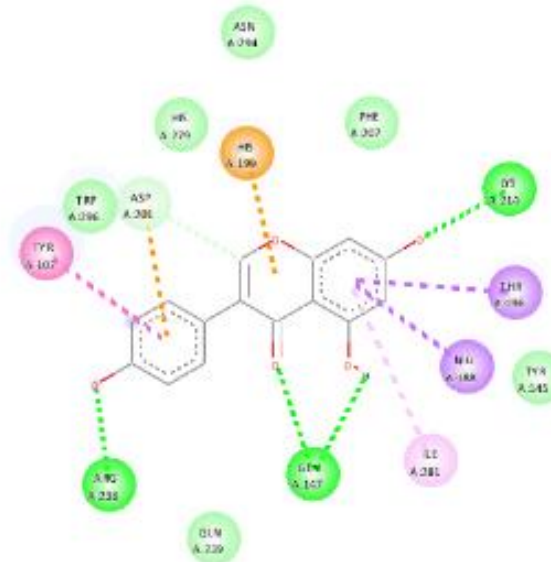
HIF-1alpha

No.	Substance	Visualization
	Native Ligand	

1	1H2N	 <p>The diagram illustrates the molecular interactions of a central chemical structure, likely a peptide or small molecule, with several amino acid residues. The central structure is shown in a stick representation with red oxygen atoms and blue nitrogen atoms. Surrounding it are green circles representing amino acid residues, each labeled with its three-letter code and residue number (e.g., THR A:196, HIS A:279, ASP A:201, etc.). Dashed green lines indicate conventional hydrogen bonds, while dashed light green lines indicate van der Waals interactions.</p> <p>Interactions</p> <ul style="list-style-type: none">van der WaalsConventional Hydrogen Bond
Control		

1

Genistein

**Interactions**

van der Waals



Conventional Hydrogen Bond



Carbon Hydrogen Bond



Pi-Cation



Pi-Anion



Pi-Sigma



Pi-Pi Stacked



Pi-Pi T-shaped



Pi-Alkyl

aCSE

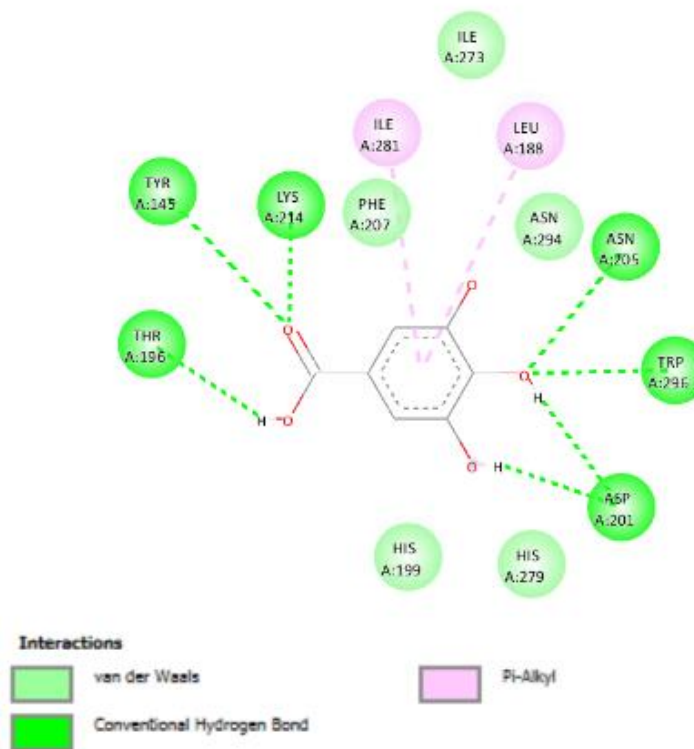
1	Epicatechin
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 Pi-Sigma

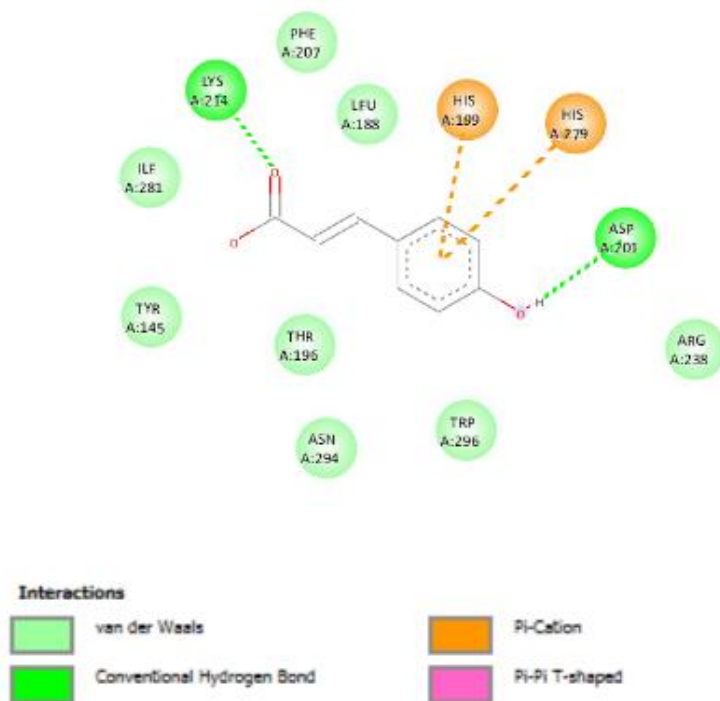
2

Gallic acid



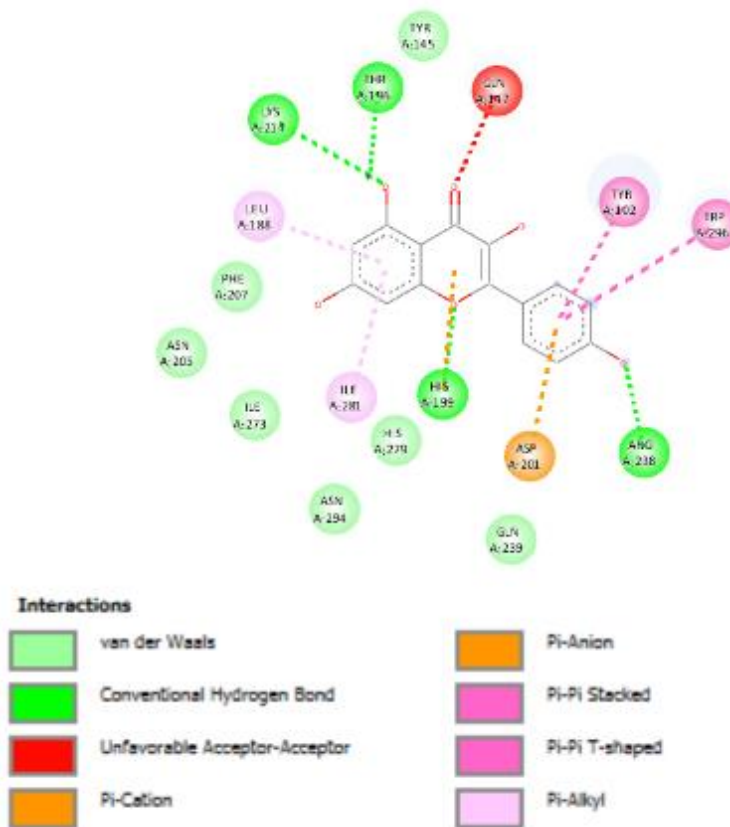
3

4-Hydroxycinnamic acid



4

Kaempferol



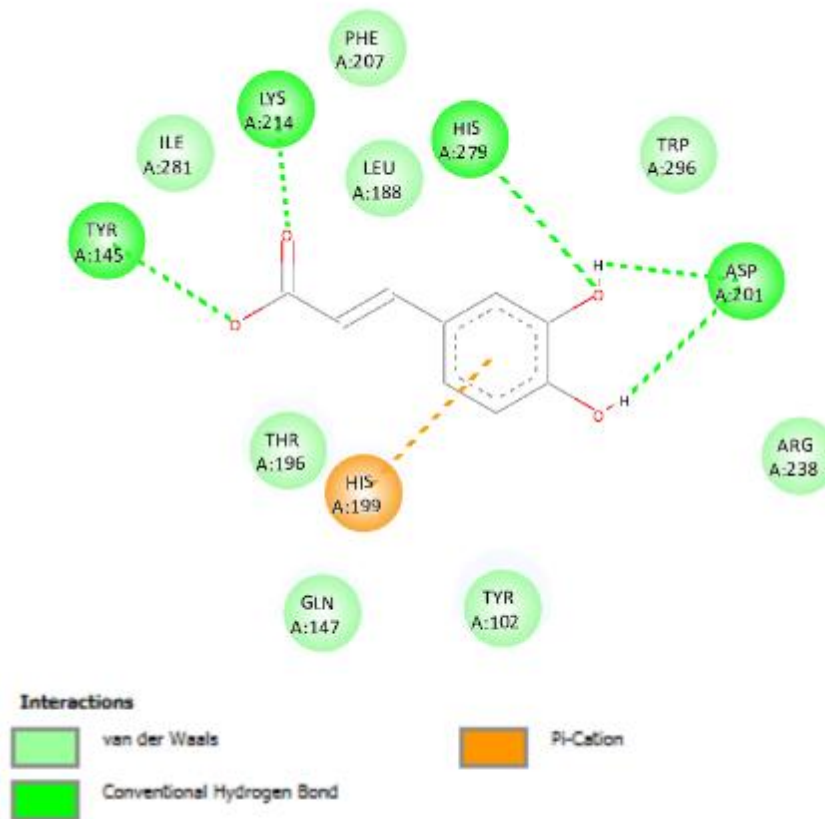
rCSE

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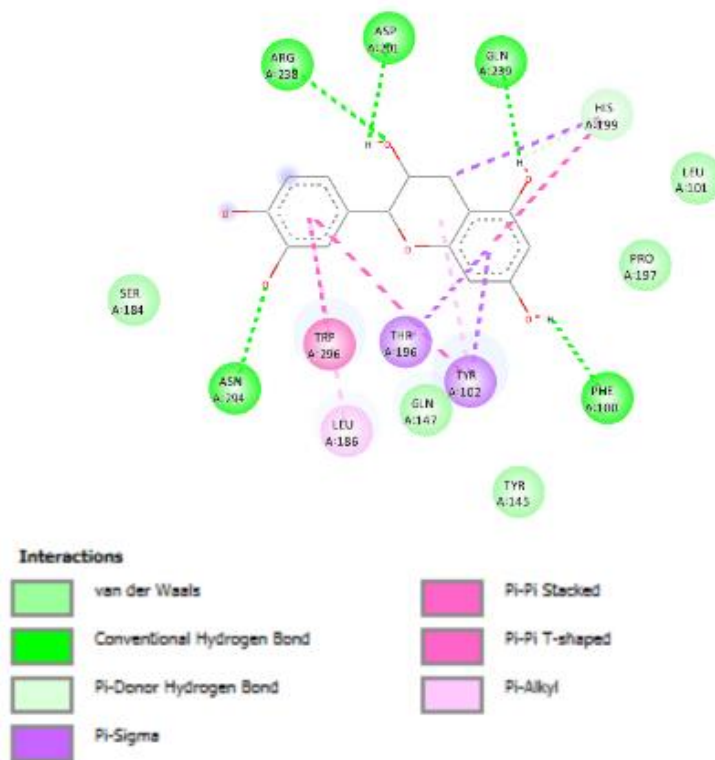
1

Caffeic acid



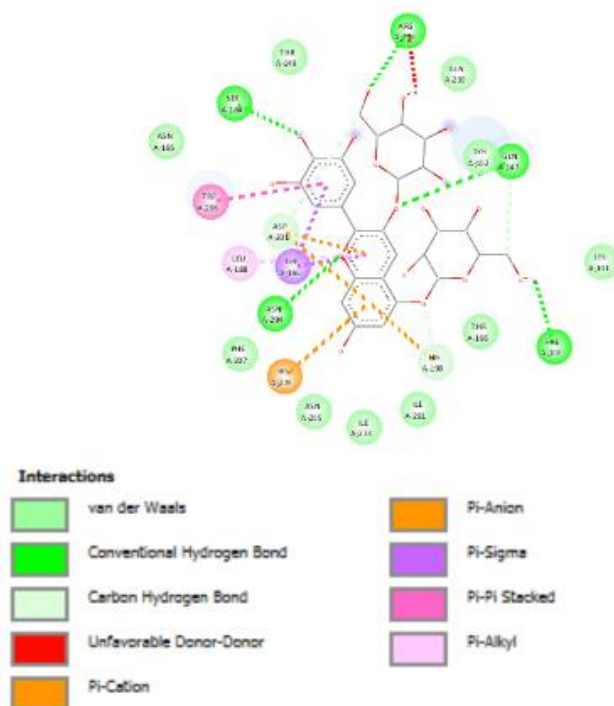
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(+) -Catechin



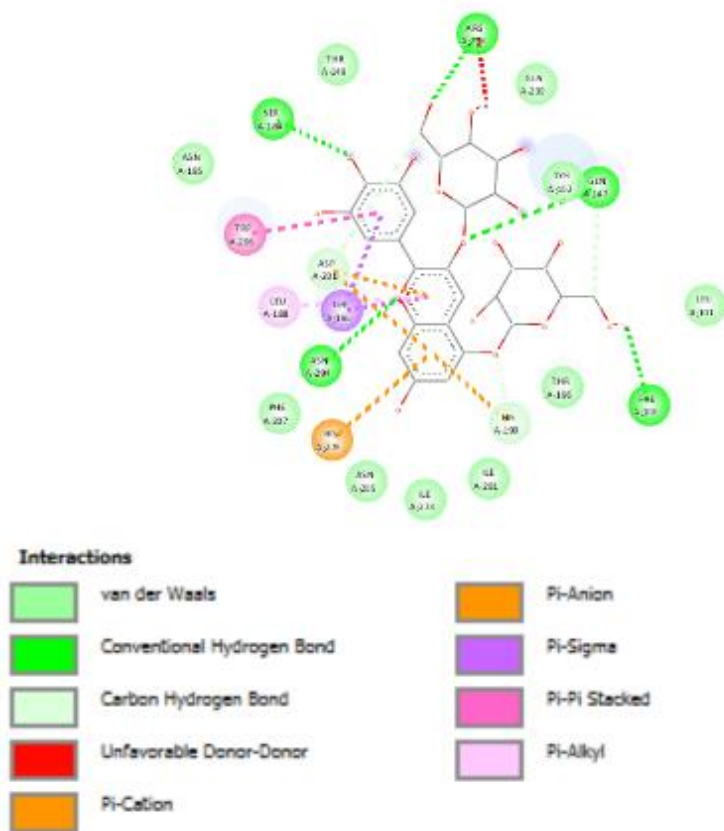
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(2R,3S,4S,5R,6S)-2-(hydroxymethyl)-6-[7-hydroxy-3-[(2S,3R,4S,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-2-(3,4,5-trihydroxyphenyl)chromenylium-5-yl]oxyoxane-3,4,5-triol



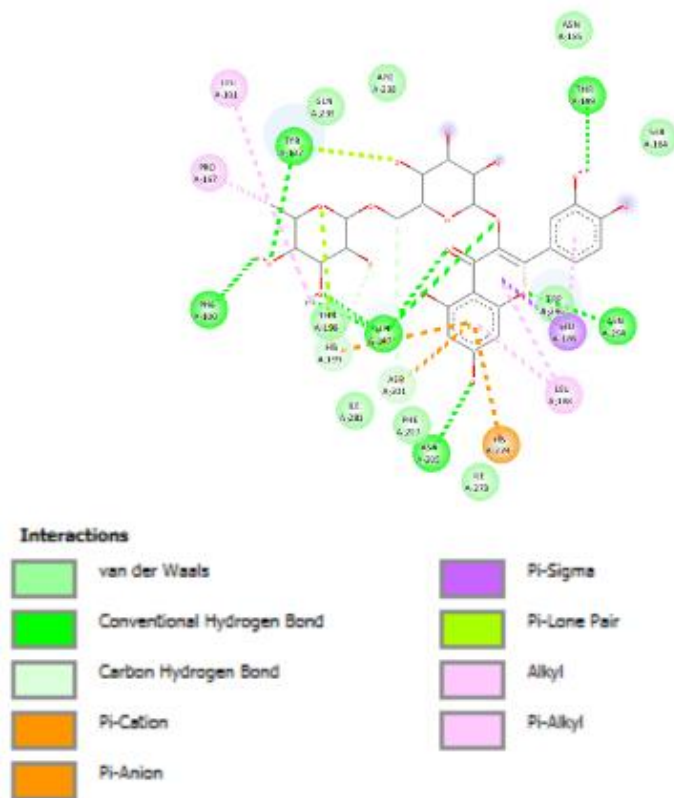
4

Naringin



5

Rutin



6

Shikimic Acid

