

Supplementary Material

Synthesis, Cytotoxicity and Molecular Docking of New Hybrid Compounds by Combination of Curcumin with Oleanolic Acid

Katarzyna Sowa-Kasprzak^{1*}, Ewa Totoń², Jacek Kujawski¹, Dorota Olender¹, Natalia Lisiak², Lucjusz Zaprutko¹ Błażej Rubiś², Mariusz Kaczmarek³, Anna Pawełczyk¹

¹ Chair and Department of Organic Chemistry, Poznan University of Medical Sciences, Grunwaldzka 6 Str., 60-780 Poznań, Poland

² Department of Clinical Chemistry and Molecular Diagnostics, Poznan University of Medical Sciences, Rokietnicka 3 Str., 60-806 Poznań, Poland; etoton@ump.edu.pl (E.T.)

³ Department of Cancer Diagnostics and Immunology, Gene Therapy Unit, Greater Poland Cancer Centre, Garbary 15 Str., 61-866, Poznań, Poland

* Correspondence: kasik@ump.edu.pl (K.S.K.)

Table of Contents

| Contents | Page No. |
|--|----------|
| 1. The first poses of the docked ligands to compounds KS1–KS8 | |
| - 4kik.pdb protein (Figure S1-S9) | S2 |
| - 2w96.pdb protein (Figure S10-S18) | S11 |
| - 3dt3.pdb protein (Figure S19-S26) | S20 |
| - 1l2j.pdb protein (Figure S27-S35) | S29 |
| 2. ¹ H-NMR and ¹³ C-NMR of the synthesized compounds | S38 |

KS1

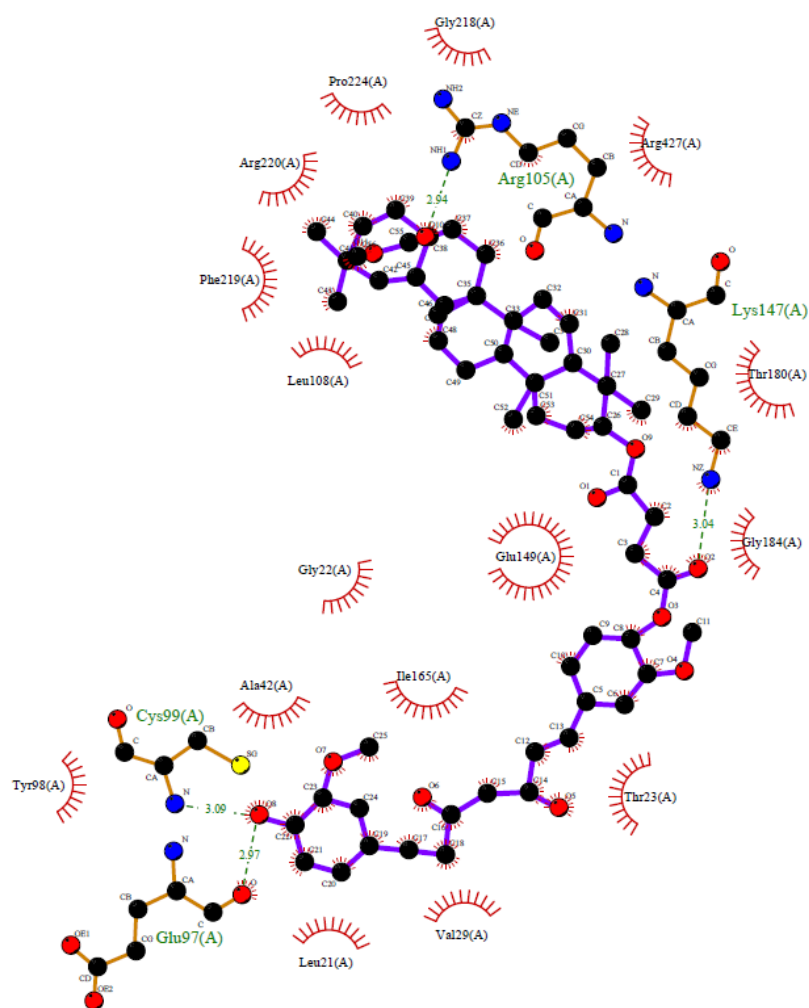


Figure S1 The first poses of the docked ligands to compound **KS1**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

KS2_keto

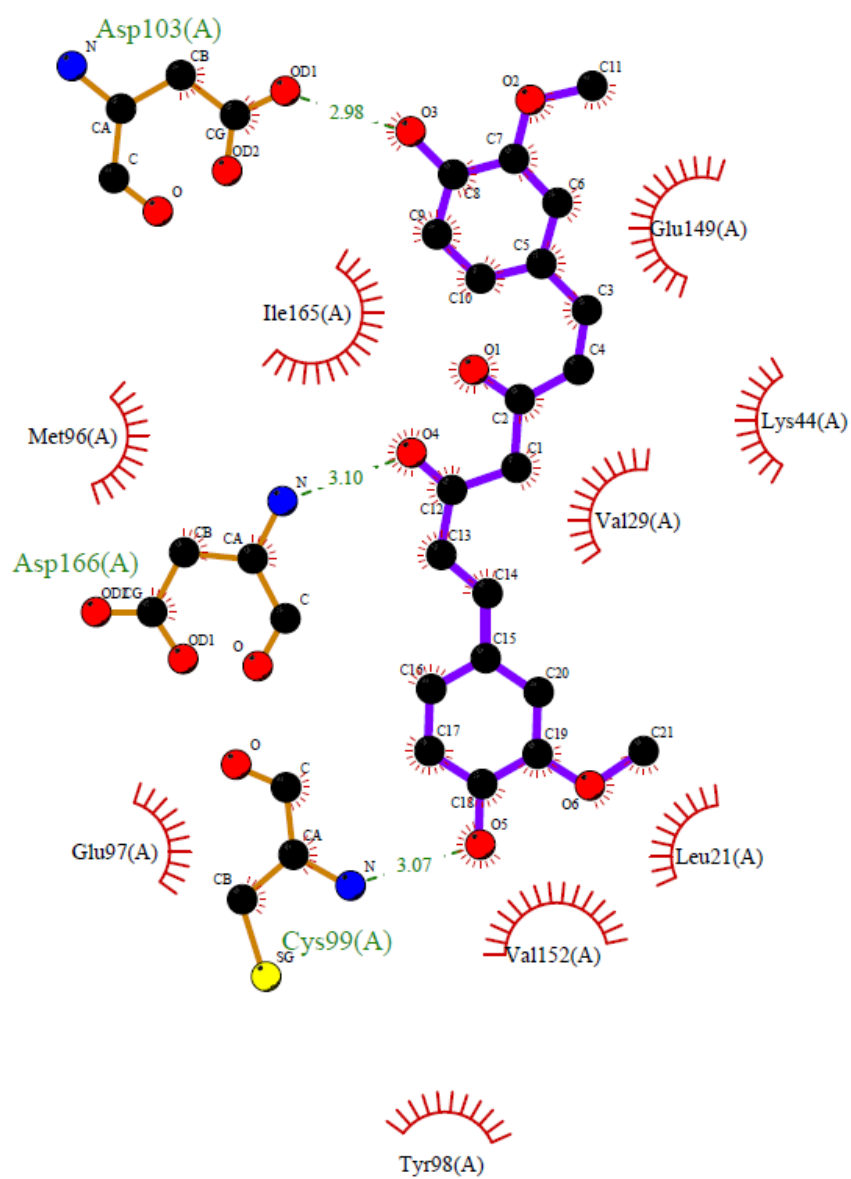


Figure S2 The first poses of the docked ligands to compound **KS2_keto**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

KS2_enol

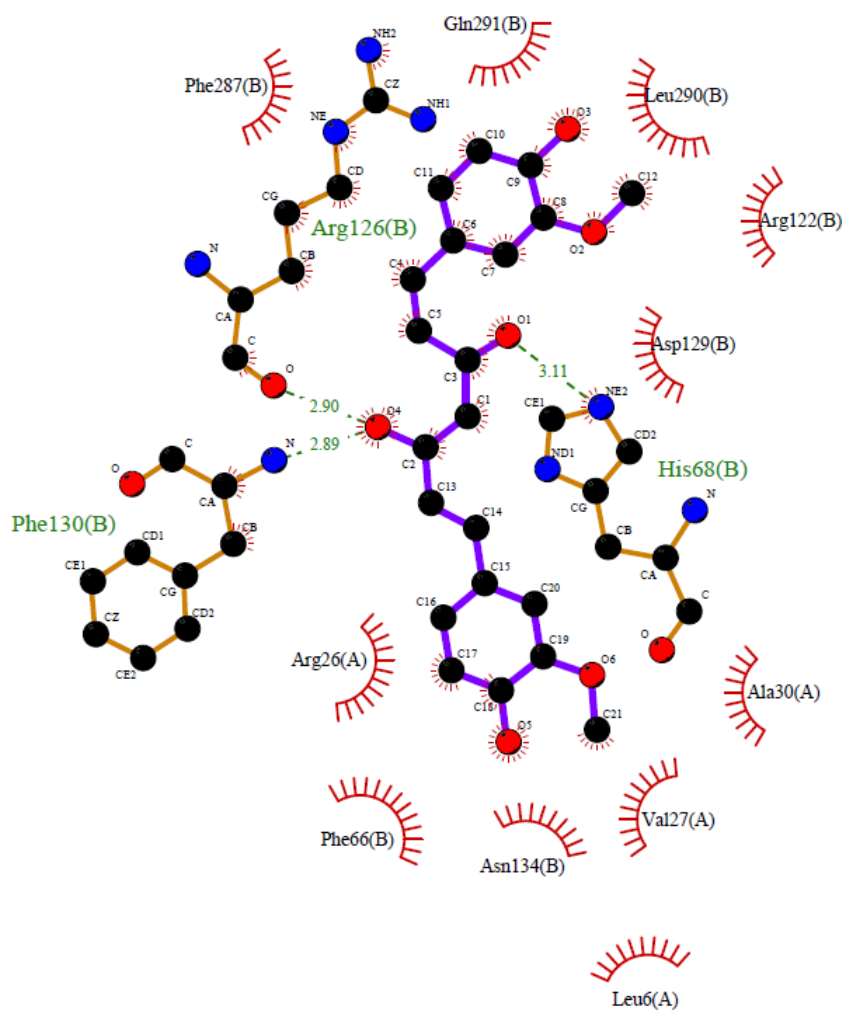


Figure S3 The first poses of the docked ligands to compound **KS2_enol**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

KS3

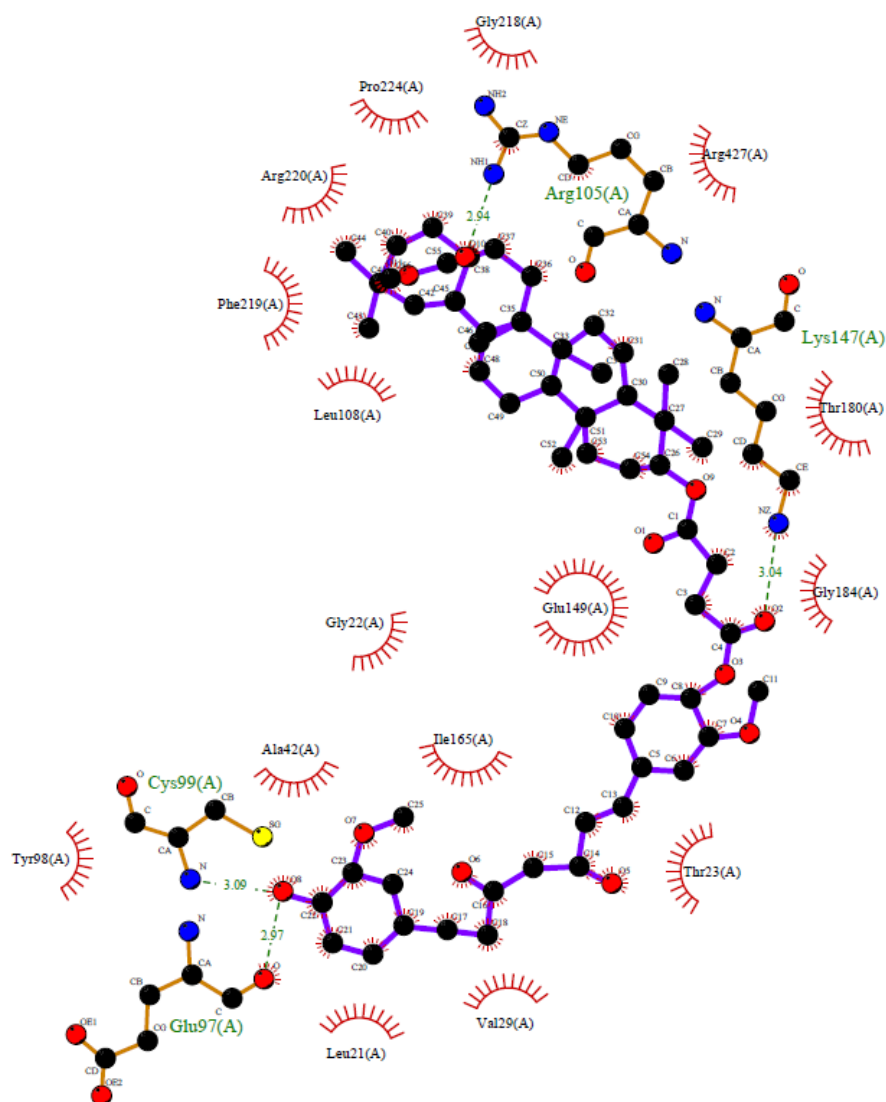


Figure S4 The first poses of the docked ligands to compound **KS3**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

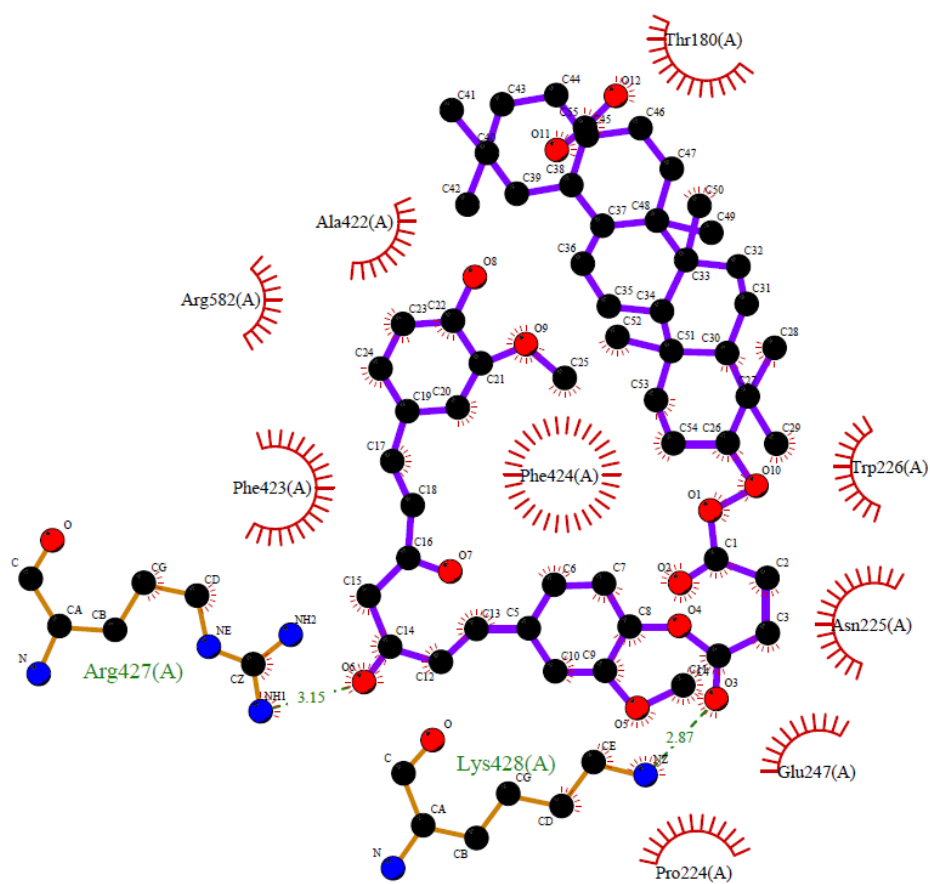


Figure S5 The first poses of the docked ligands to compound **KS4**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

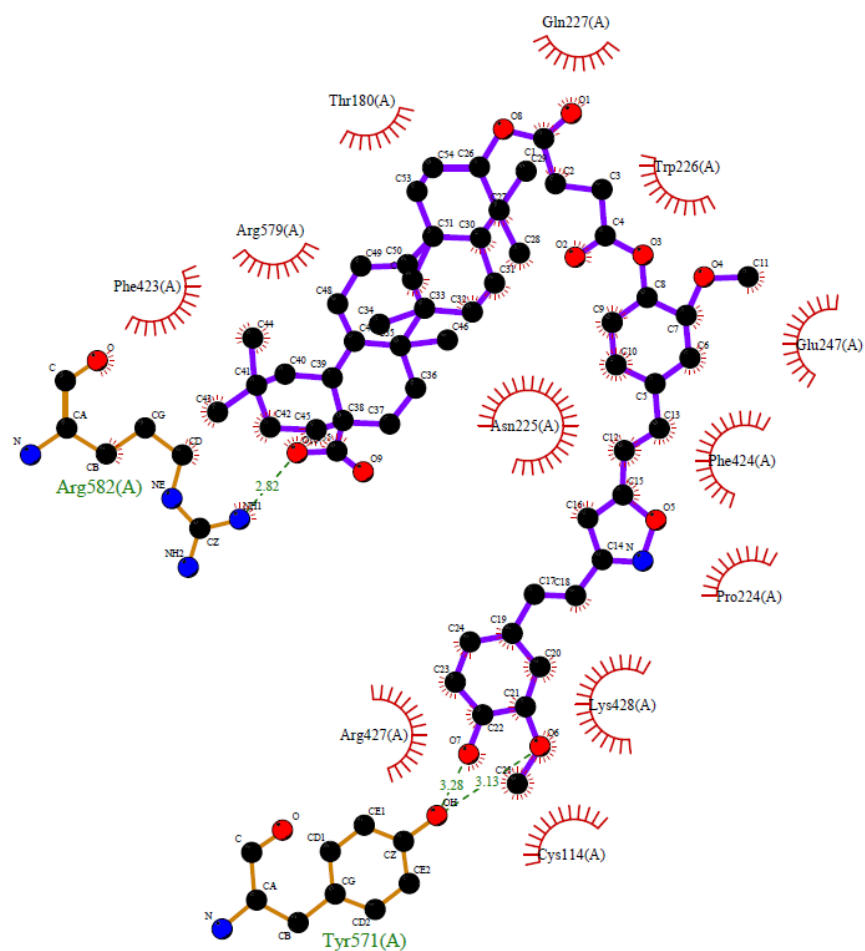


Figure S6 The first poses of the docked ligands to compound **KS5**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

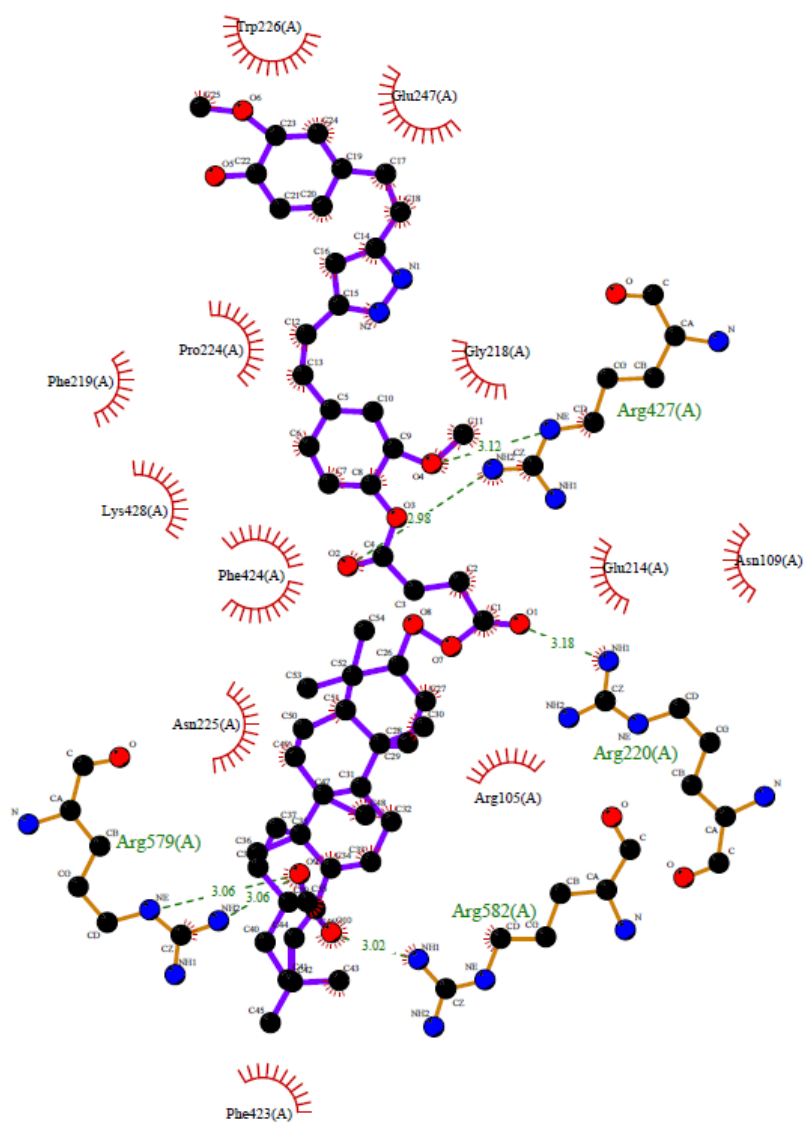


Figure S7 The first poses of the docked ligands to compound **KS6**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

KS7

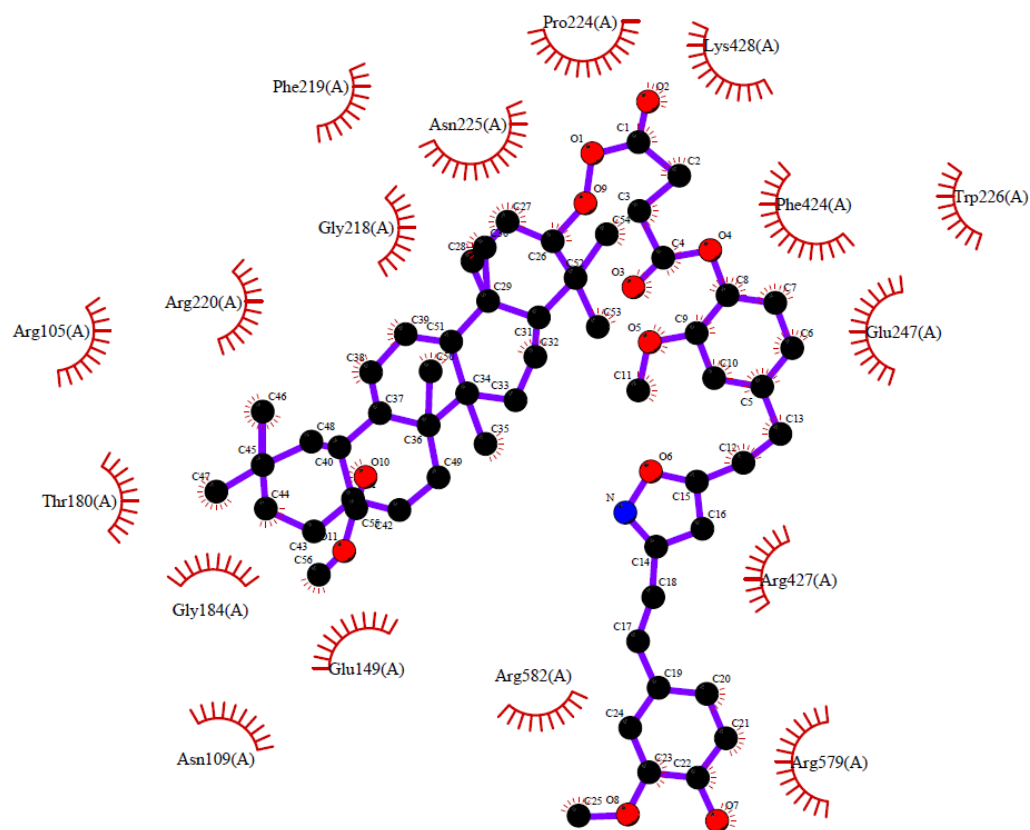


Figure S8 The first poses of the docked ligands to compound **KS7**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

KS8

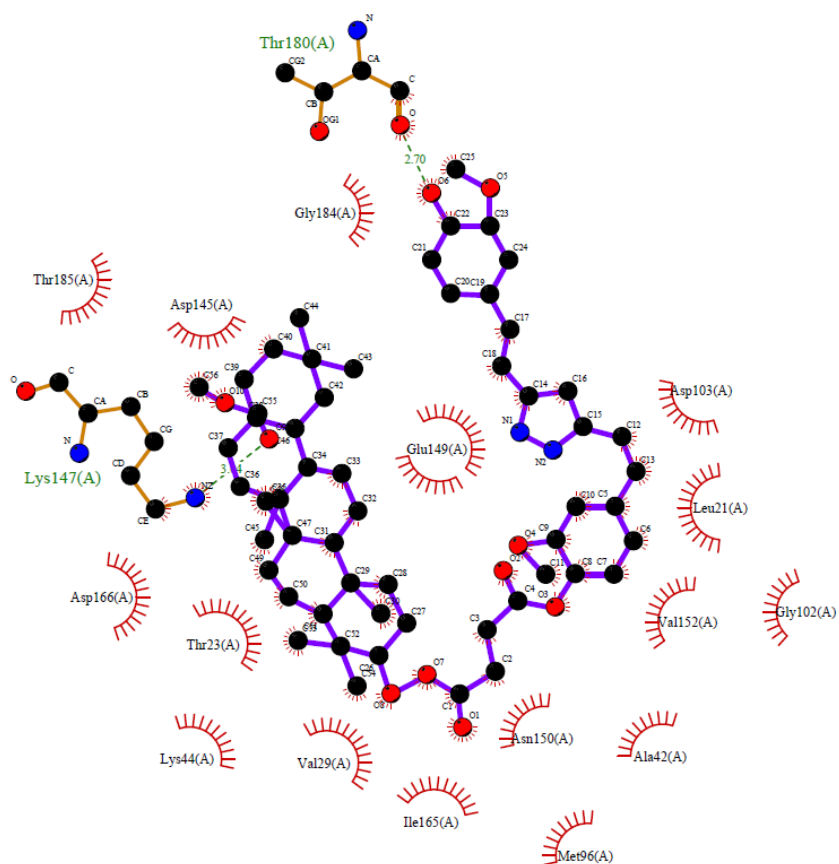


Figure S9 The first poses of the docked ligands to compound **KS8**; hydrogen atoms are omitted; 4kik.pdb protein (LigPlot+ v.2.2 software).

KS1

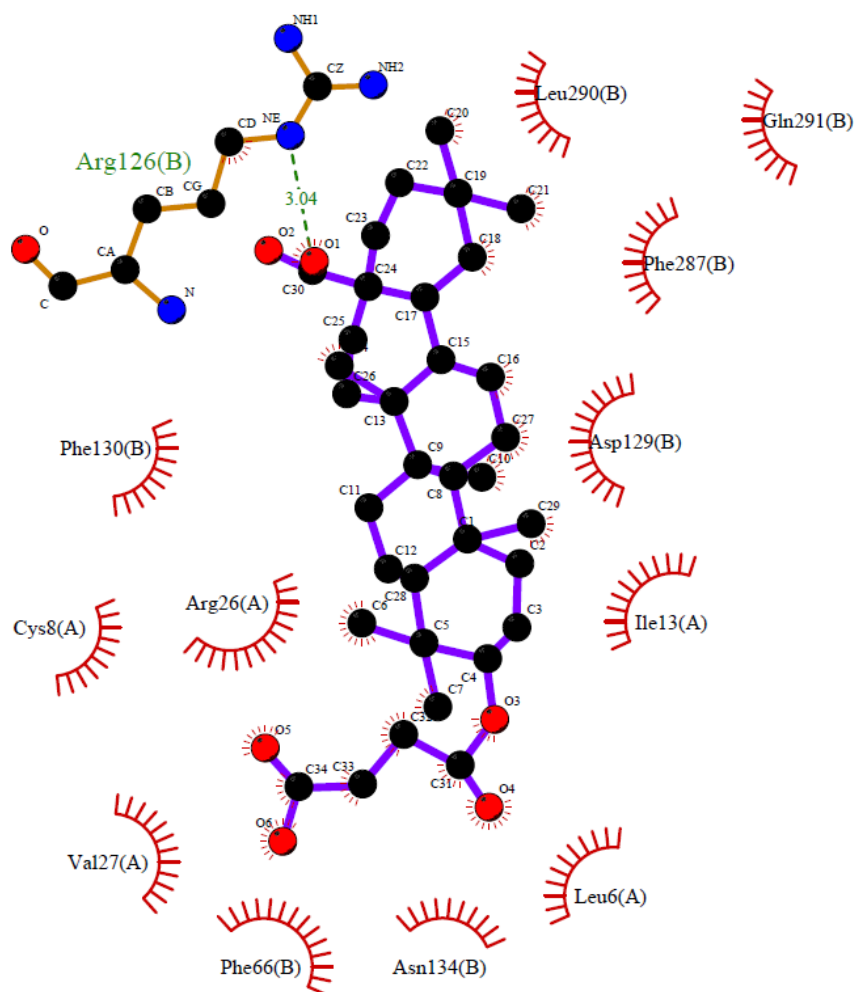


Figure S10 The first poses of the docked ligands to compound **KS1**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

KS2_keto

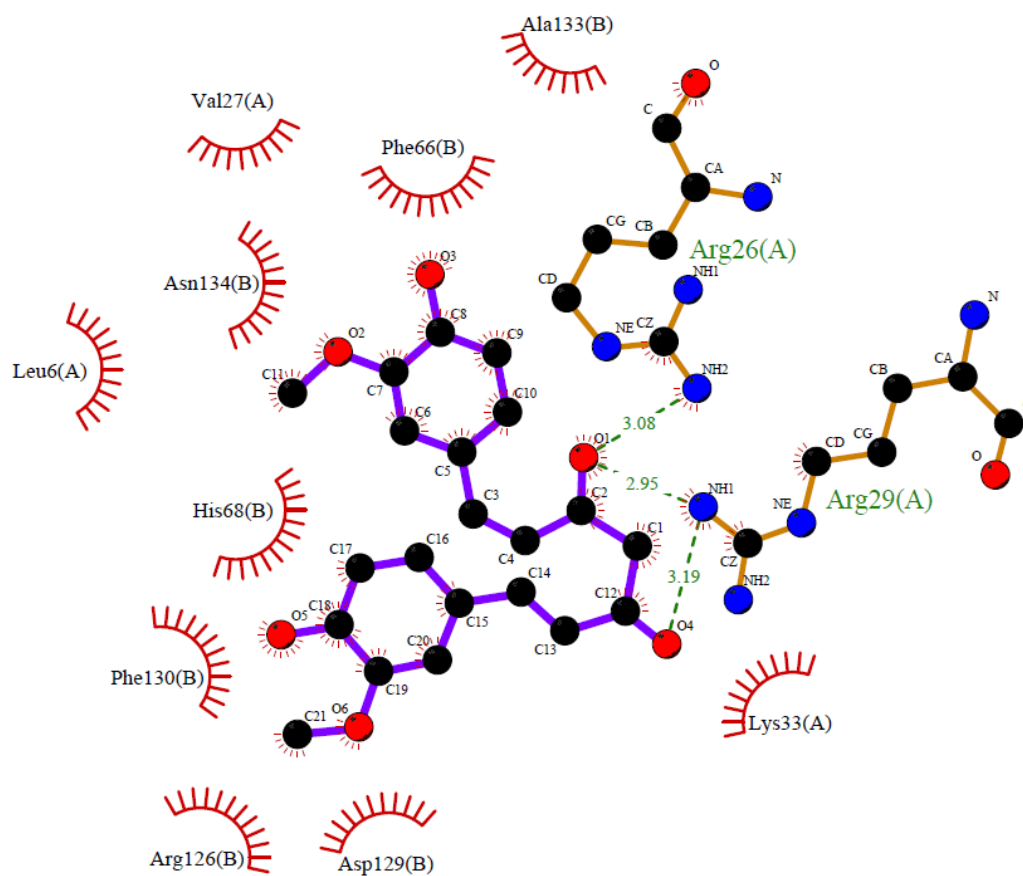


Figure S11 The first poses of the docked ligands to compound **KS2_keto**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

KS2_enol

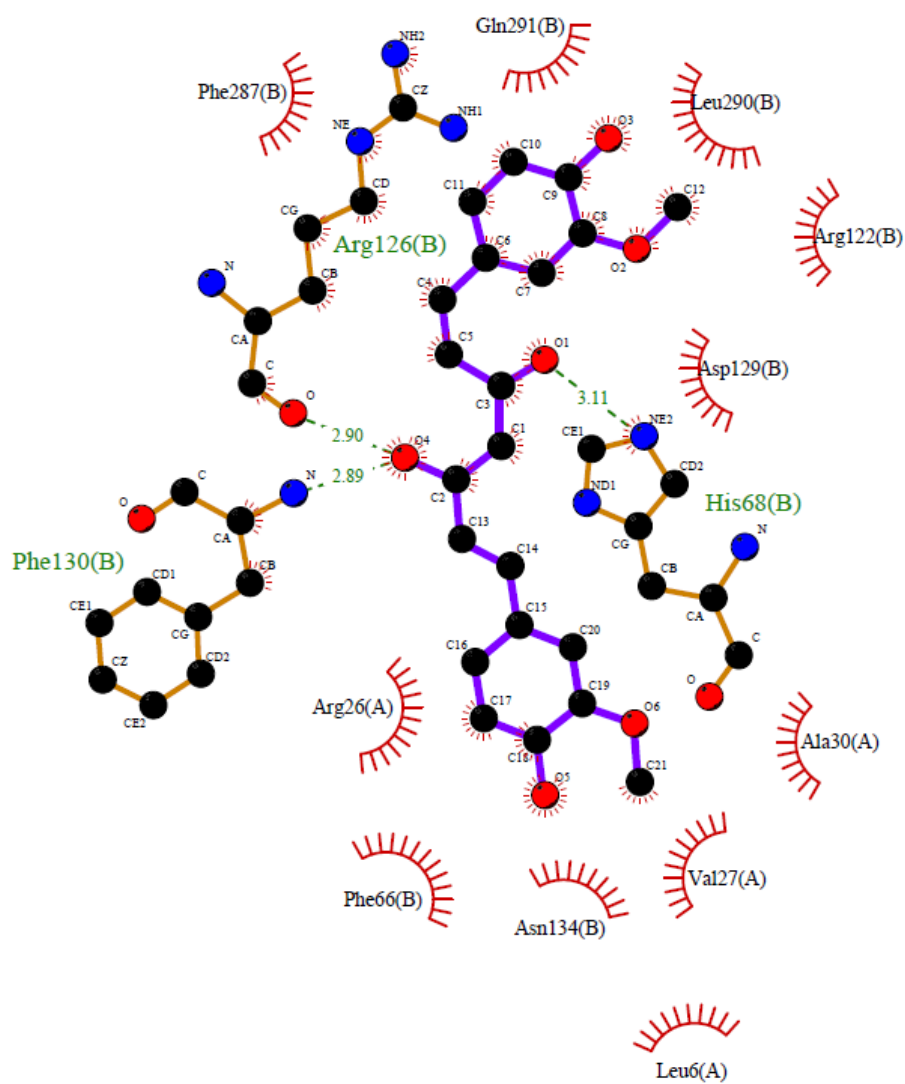


Figure S12 The first poses of the docked ligands to compound **KS2_enol**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

KS3

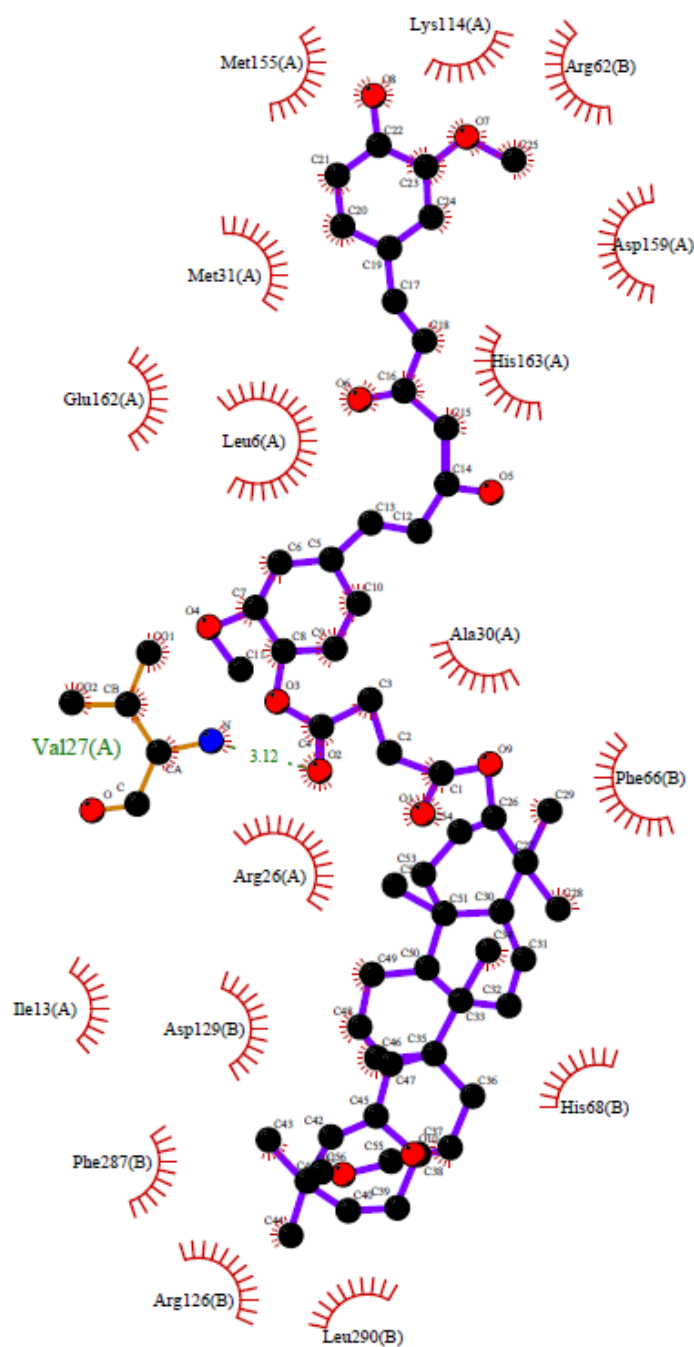


Figure S13. The first poses of the docked ligands to compound **KS3**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

KS4

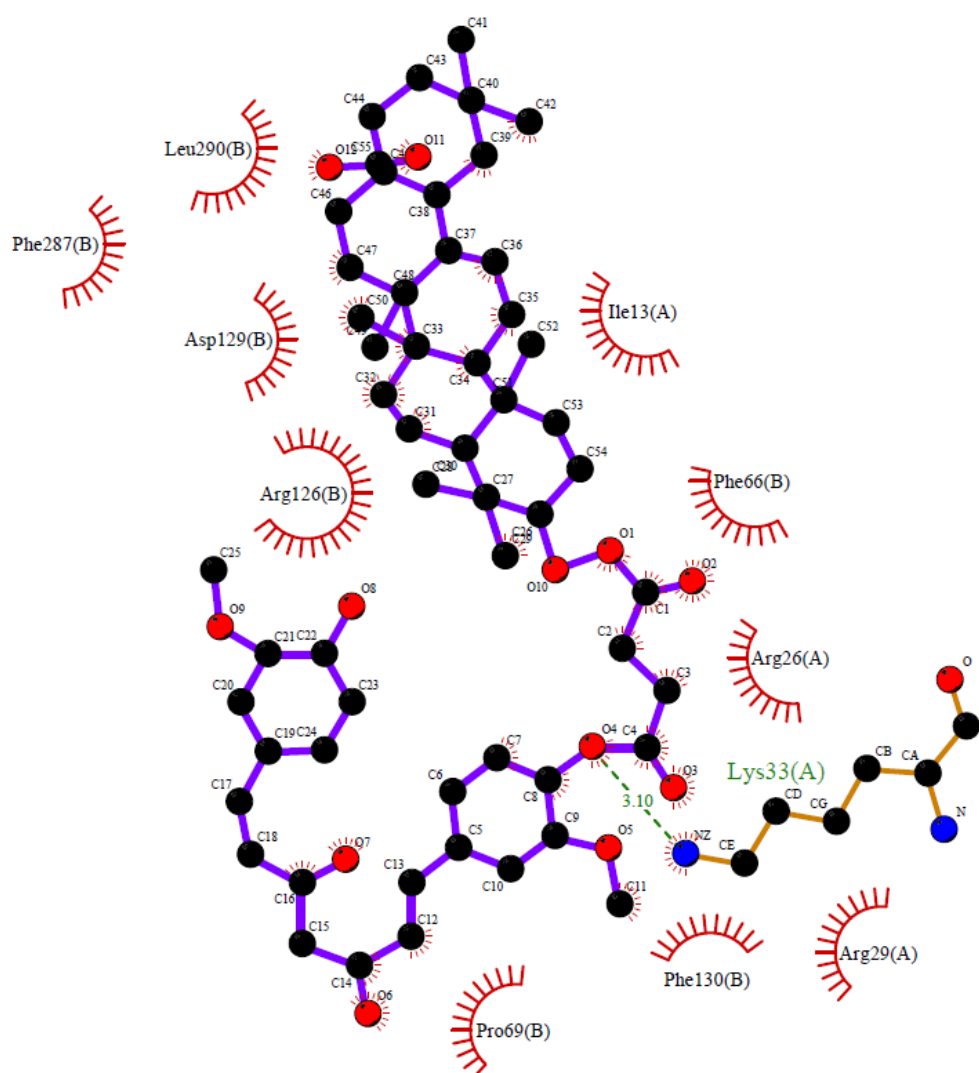


Figure S14 The first poses of the docked ligands to compound **KS4**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

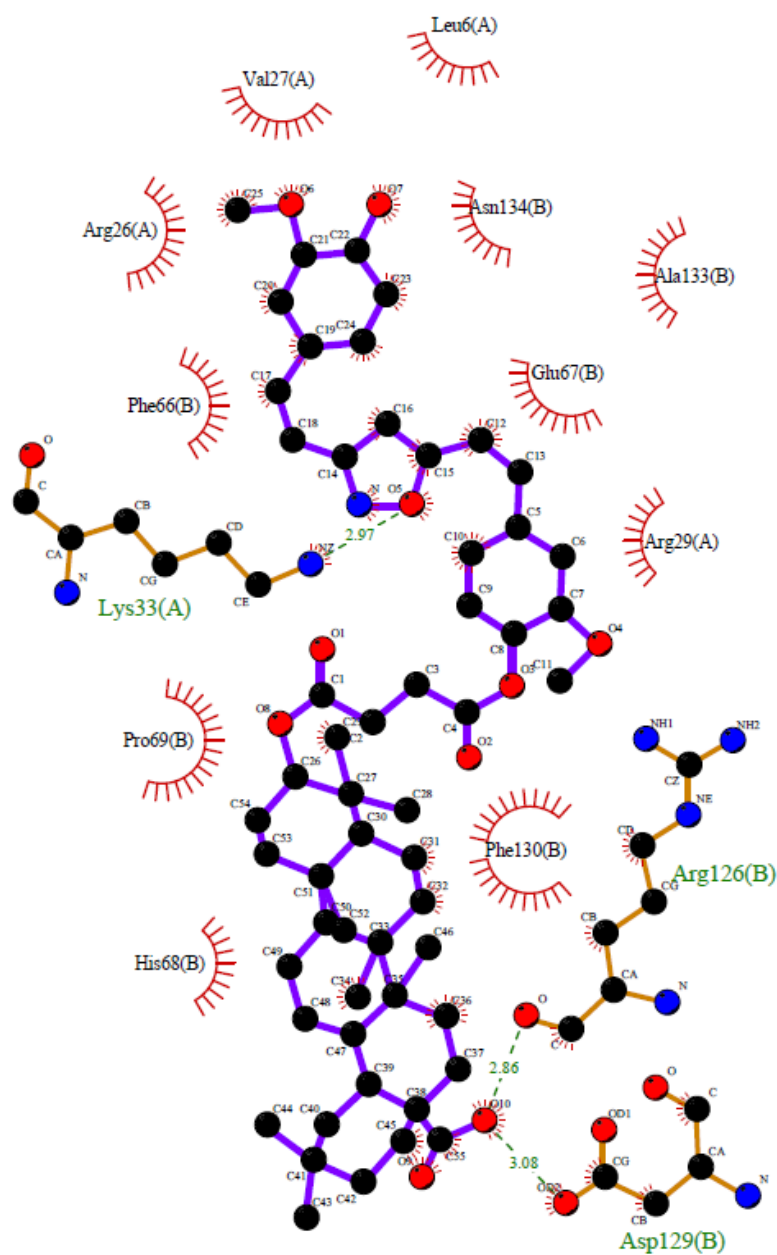


Figure S15 The first poses of the docked ligands to compound **KS5**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

KS6

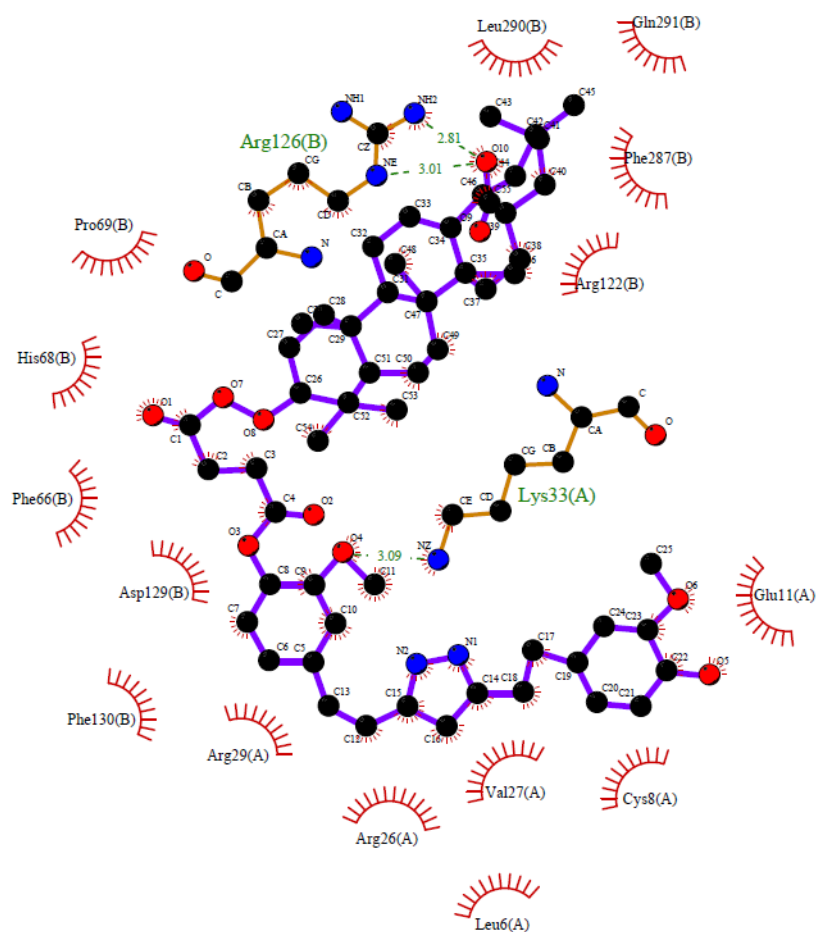


Figure S16 The first poses of the docked ligands to compound **KS6**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

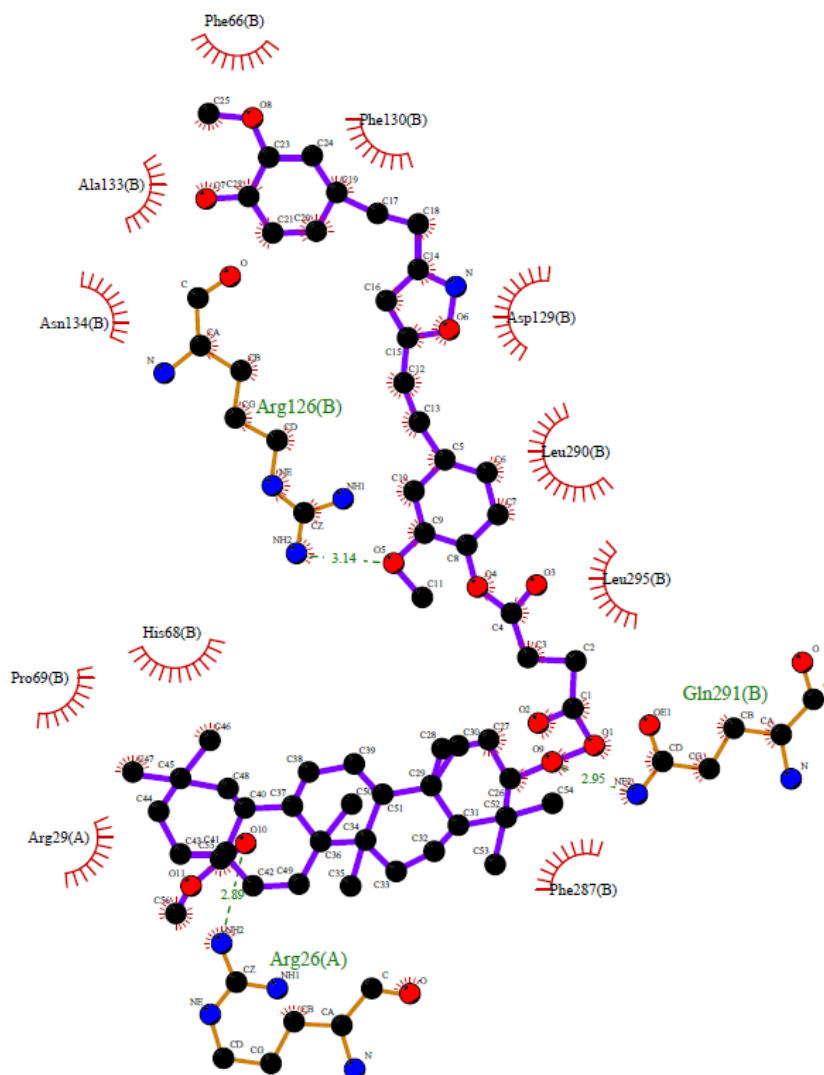


Figure S17 The first poses of the docked ligands to compound **KS7**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

KS8

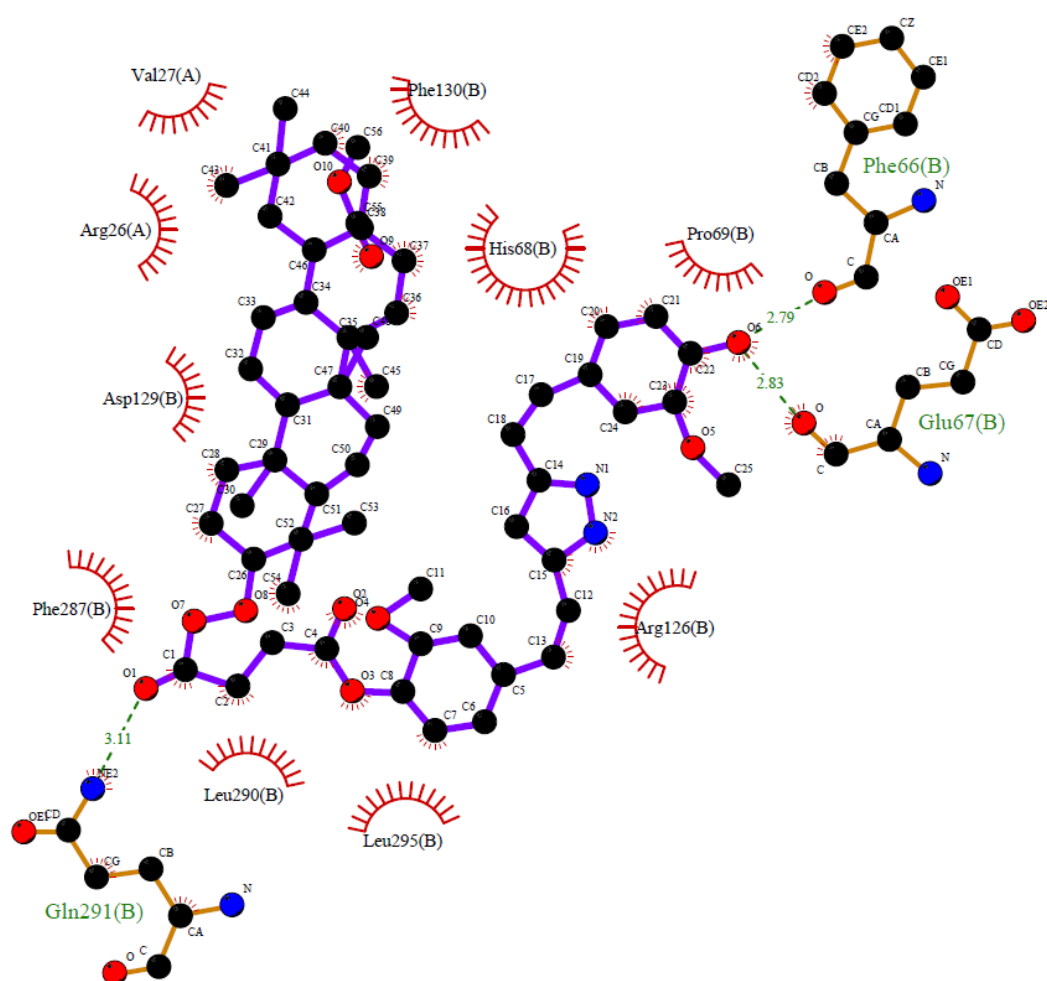


Figure S18 The first poses of the docked ligands to compound **KS8**; hydrogen atoms are omitted; 2w96.pdb protein (LigPlot+ v.2.2 software).

KS1

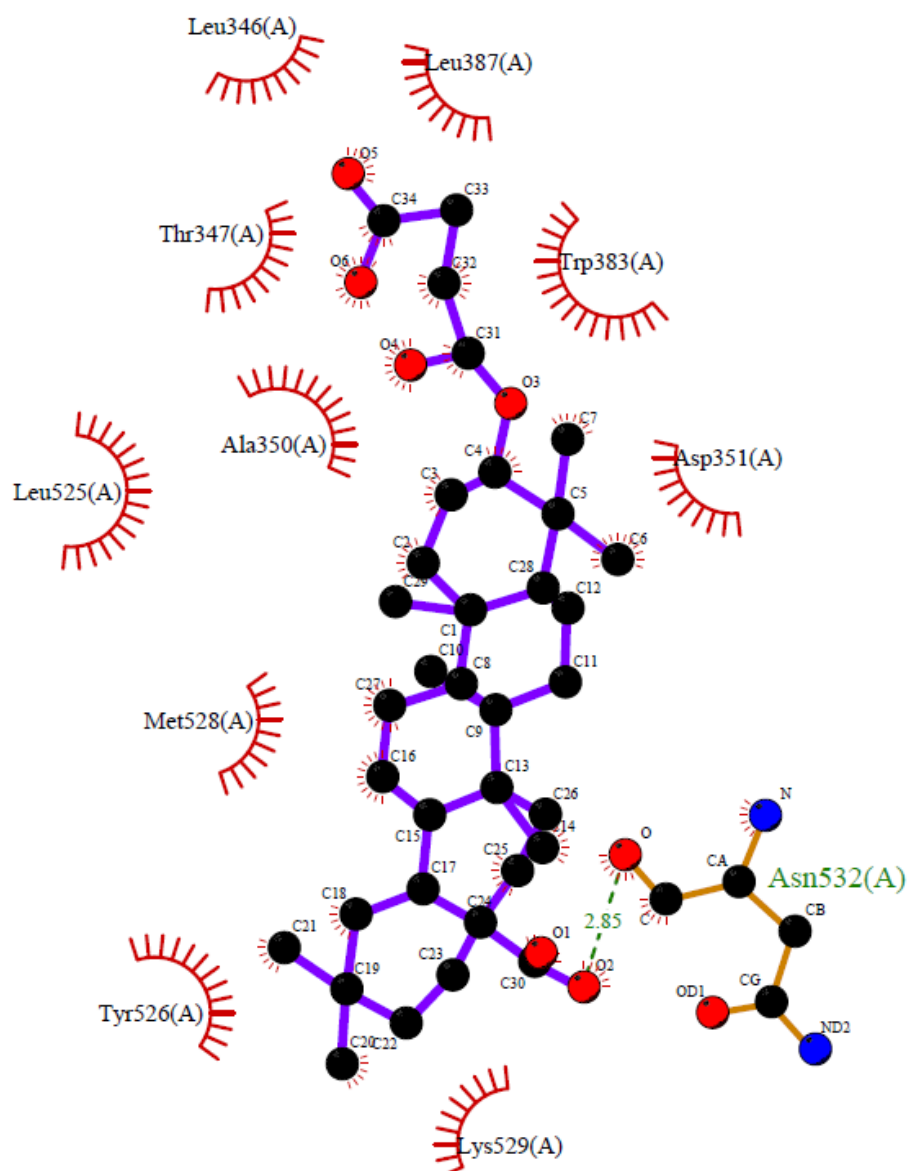


Figure S19 The first poses of the docked ligands to compound **KS1**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).

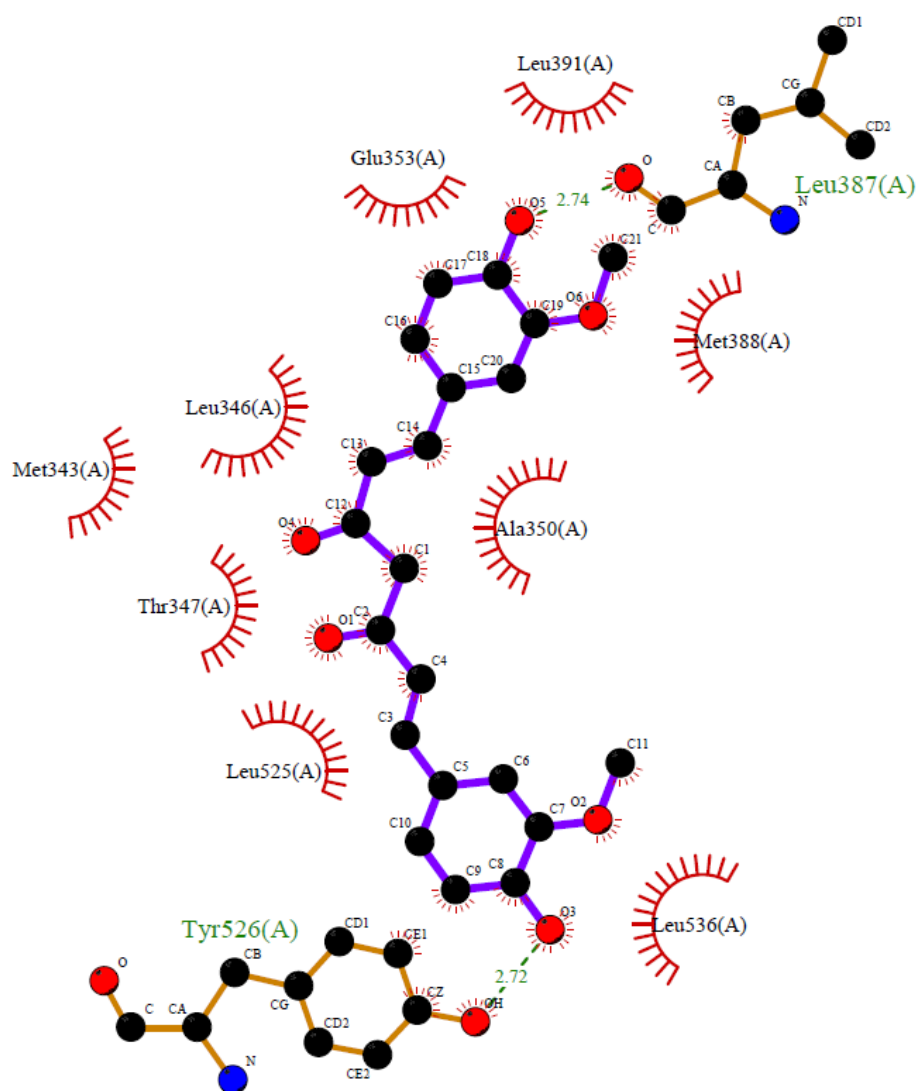
KS2_keto

Figure S20a The first poses of the docked ligands to compound **KS2_keto**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).

Figure S20b The first poses of the docked ligands to compound **KS2_enol**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).

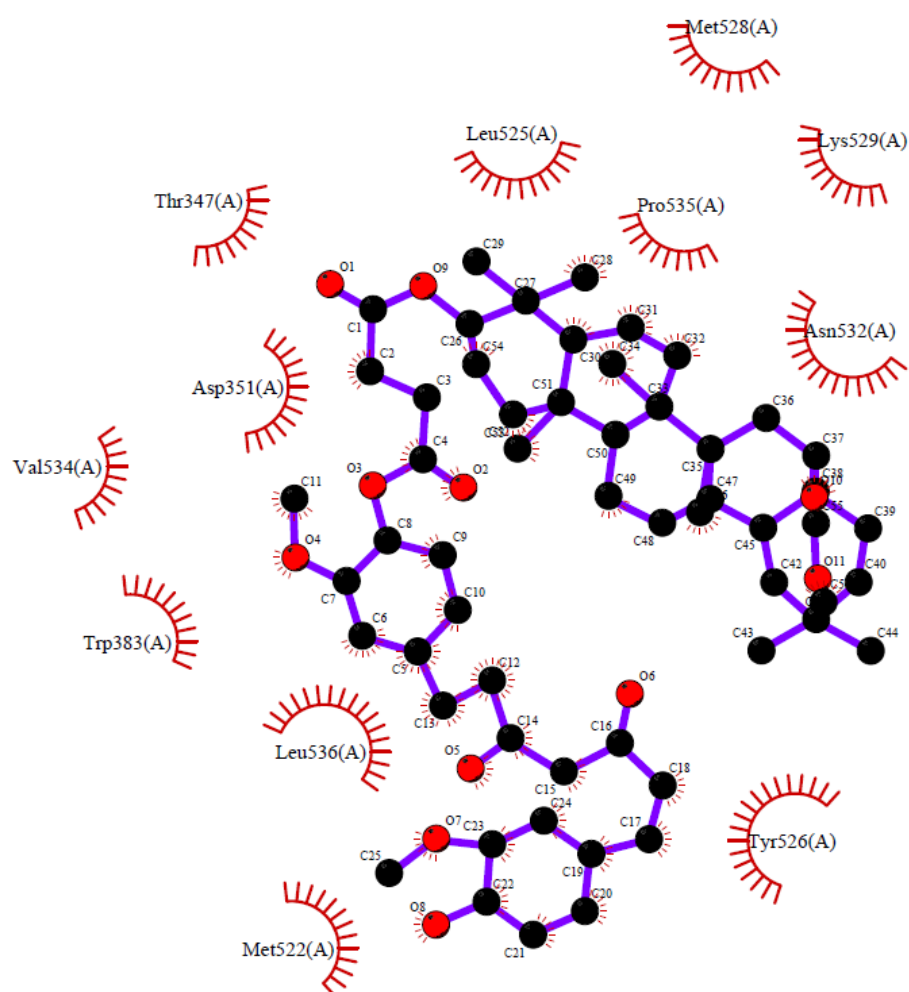


Figure S21 The first poses of the docked ligands to compound **KS3**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).

KS4

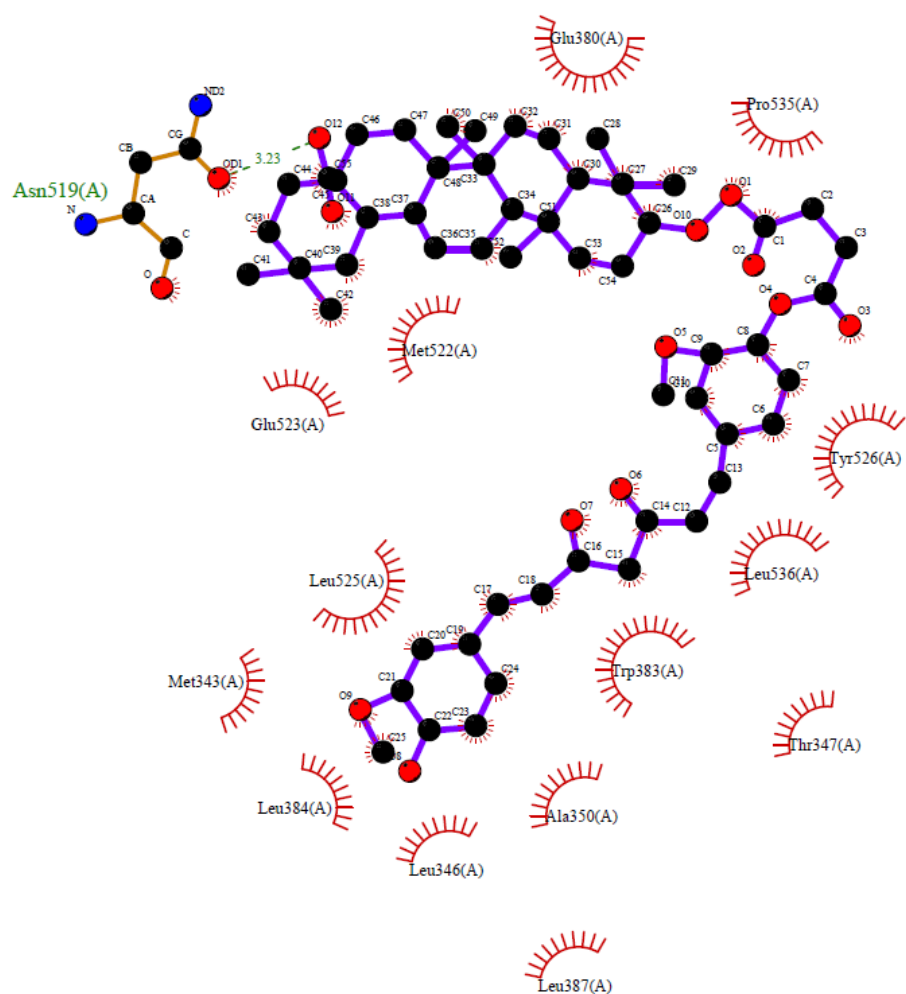


Figure S22 The first poses of the docked ligands to compound **KS4**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).



Figure S23 The first poses of the docked ligands to compound **KS5**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).

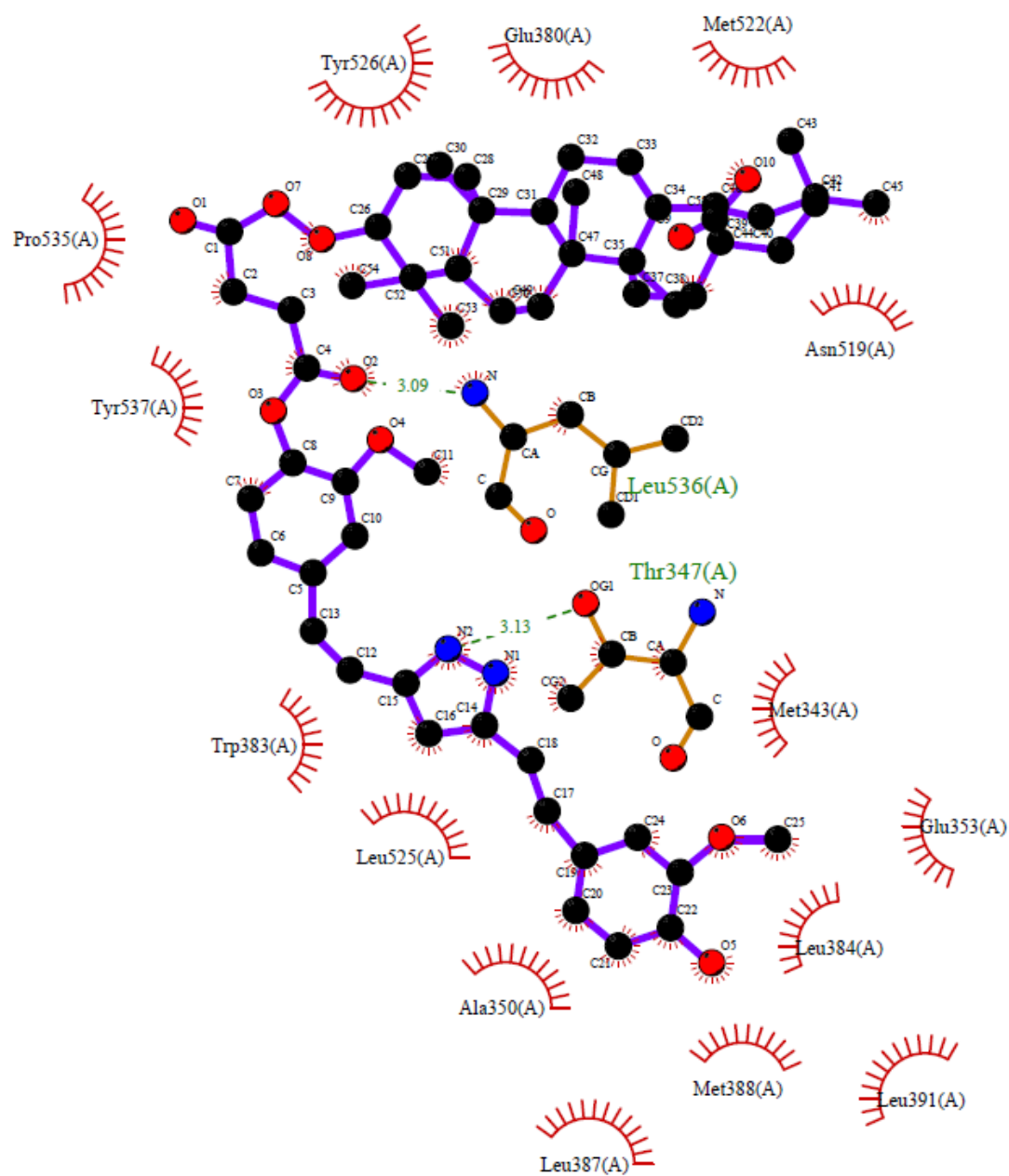


Figure S24 The first poses of the docked ligands to compound **KS6**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).

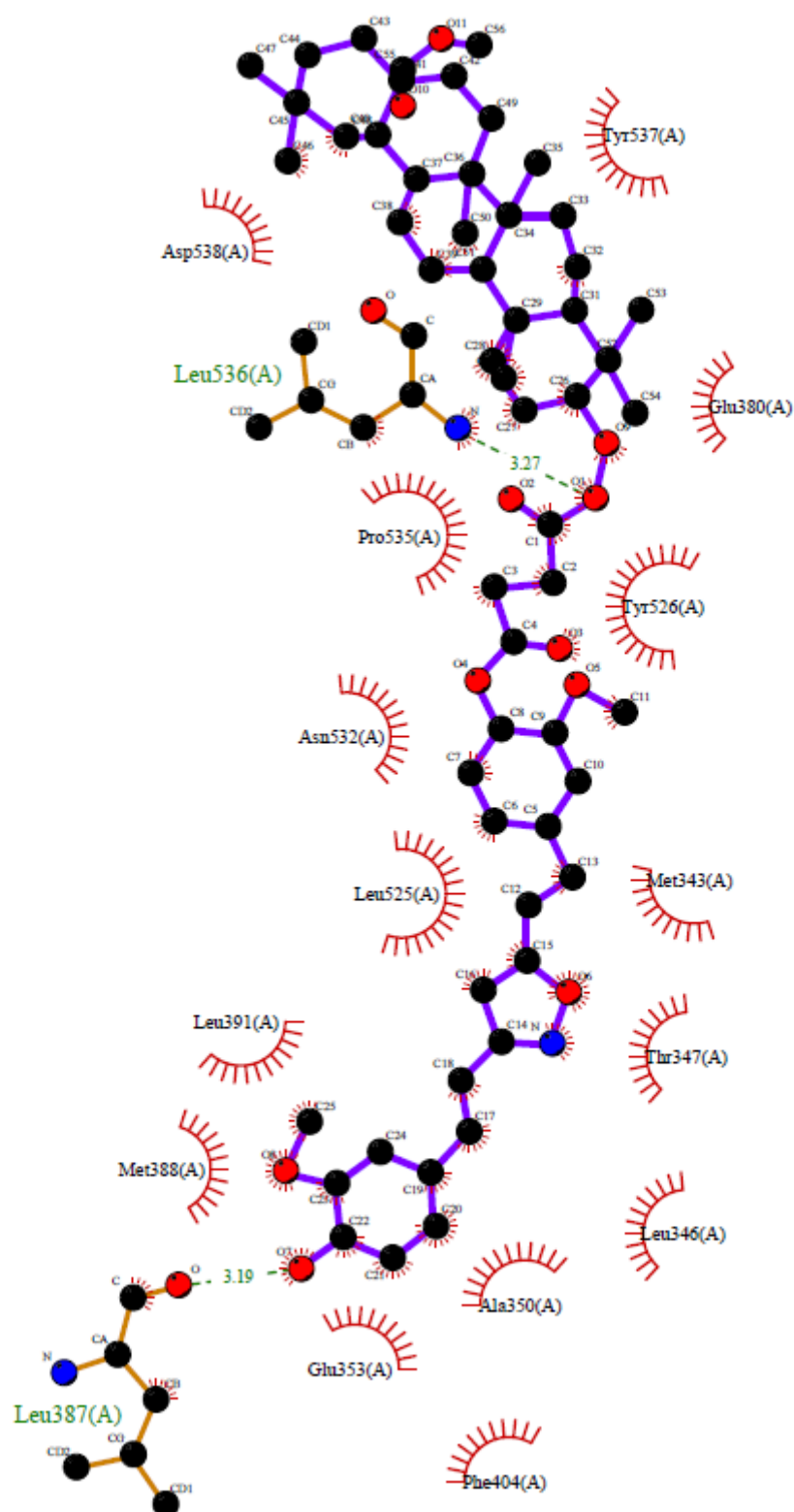


Figure S25 The first poses of the docked ligands to compound **KS7**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).

KS8

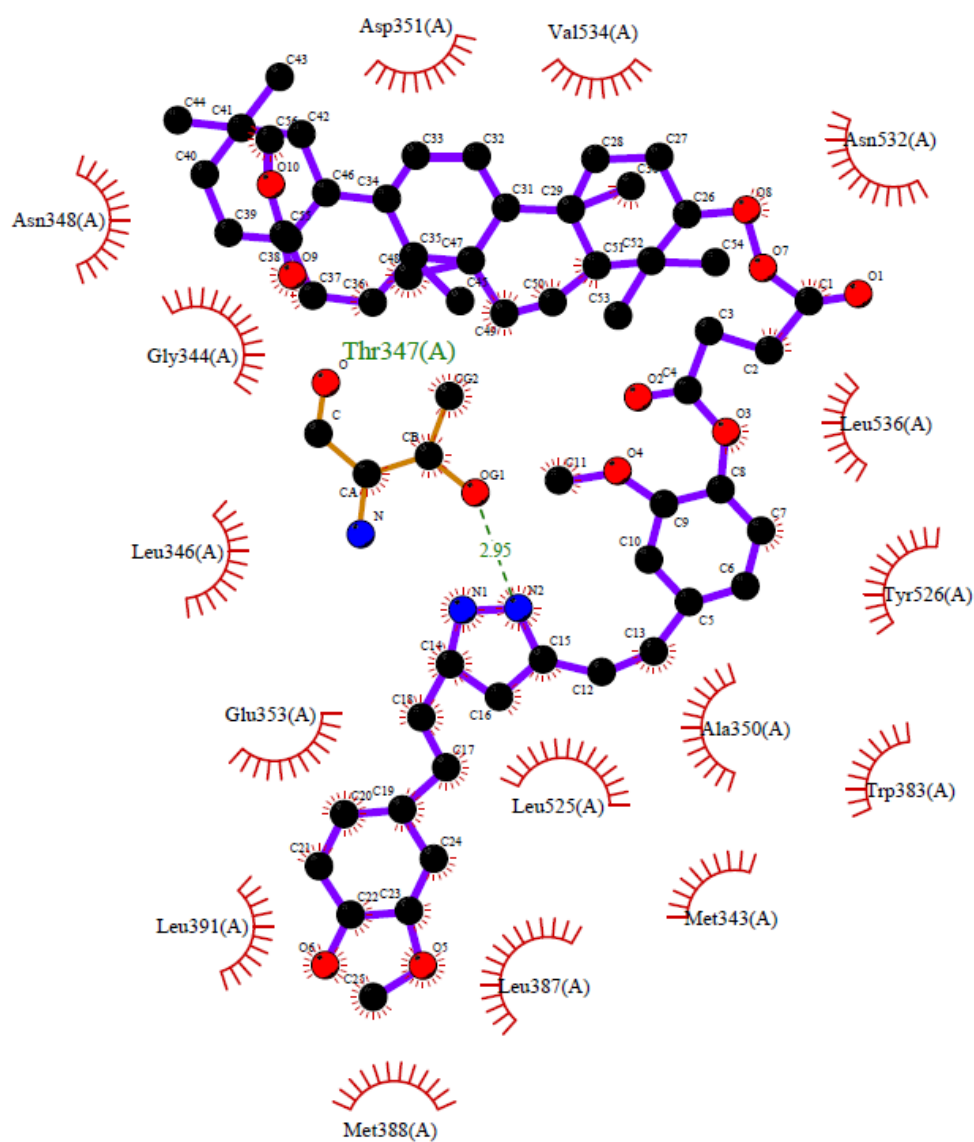


Figure S26 The first poses of the docked ligands to compound **KS8**; hydrogen atoms are omitted; 3dt3.pdb protein (LigPlot+ v.2.2 software).

KS1

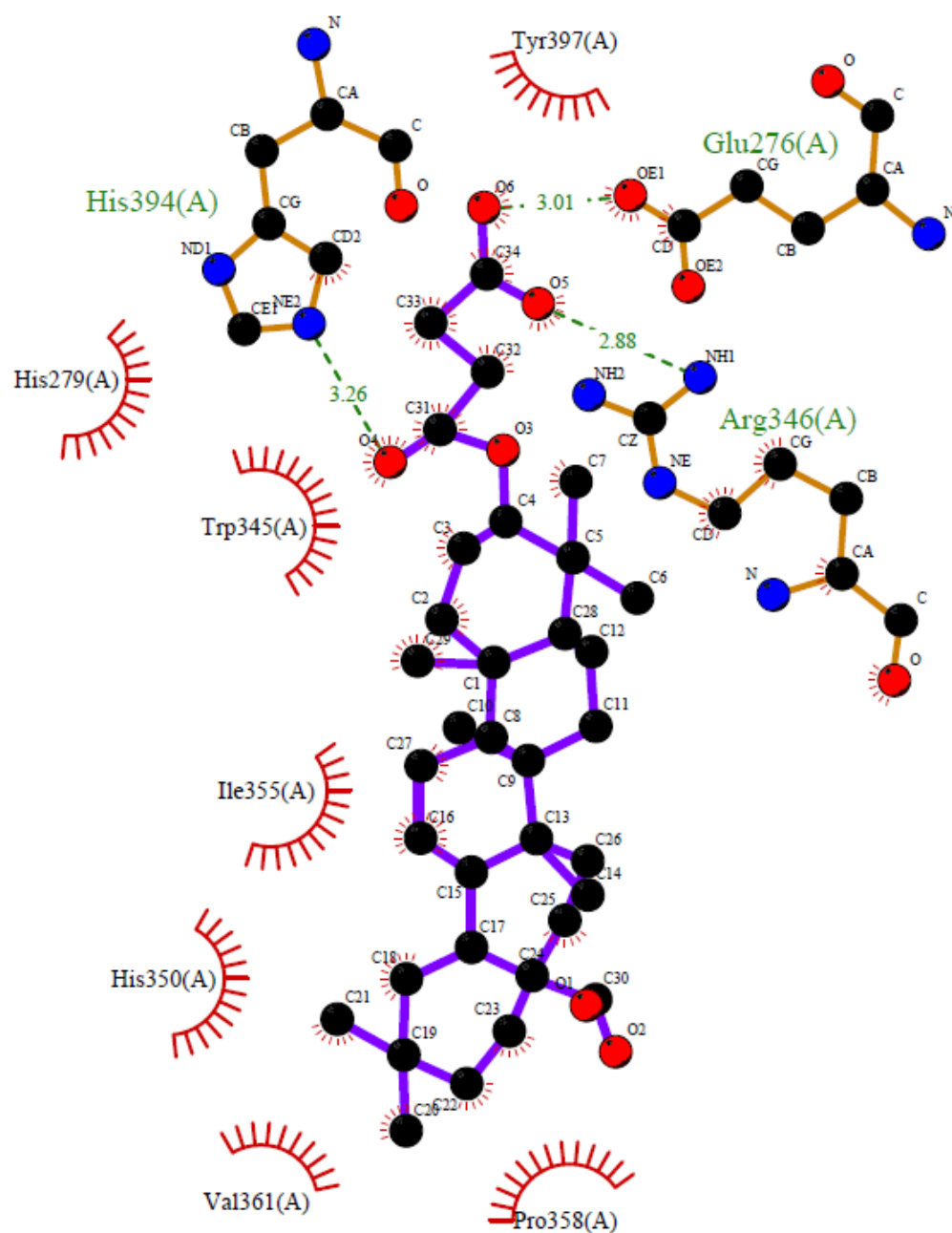


Figure S27 The first poses of the docked ligands to compound **KS1**; hydrogen atoms are omitted; 112j.pdb protein (LigPlot+ v.2.2 software).

KS2_keto

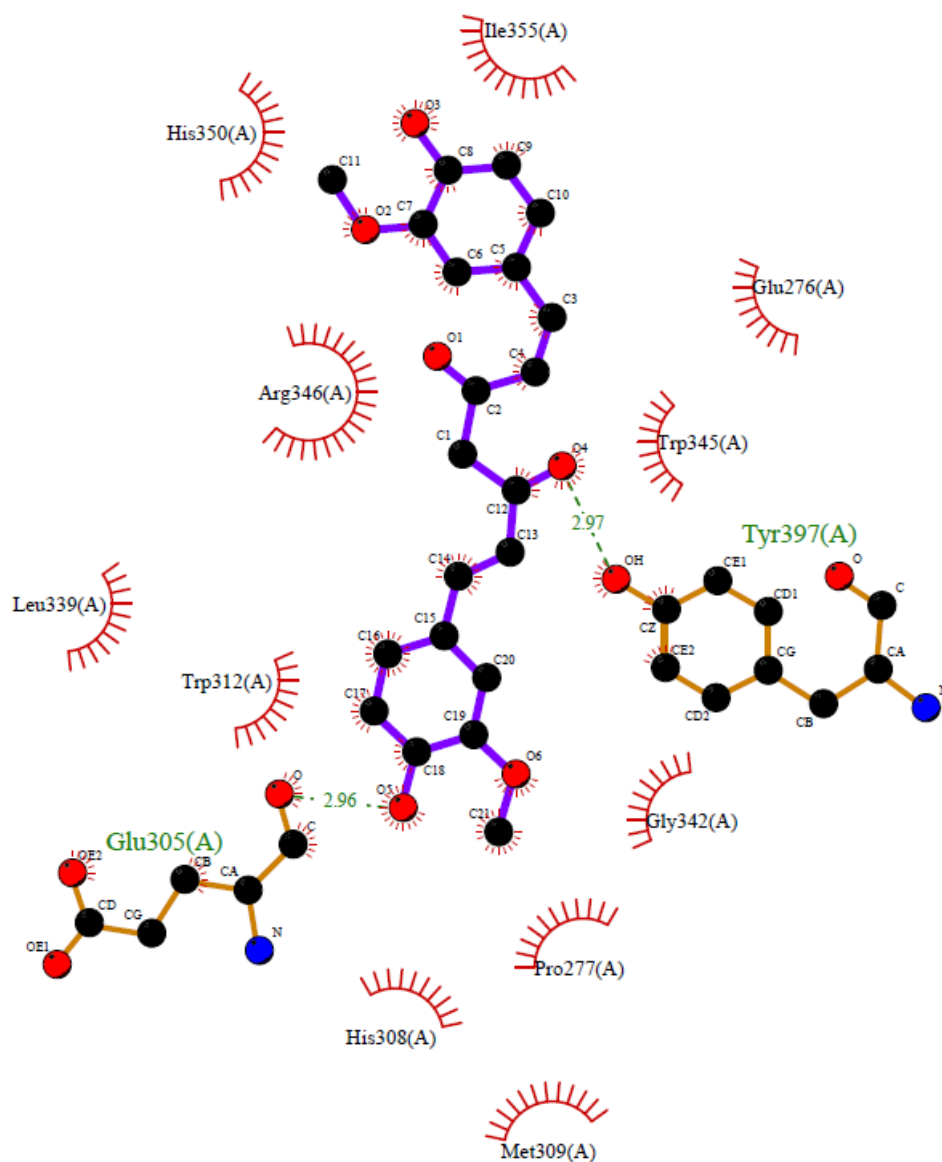


Figure S28 The first poses of the docked ligands to compound **KS2_keto**; hydrogen atoms are omitted; 112j.pdb protein (LigPlot+ v.2.2 software).

KS2_enol

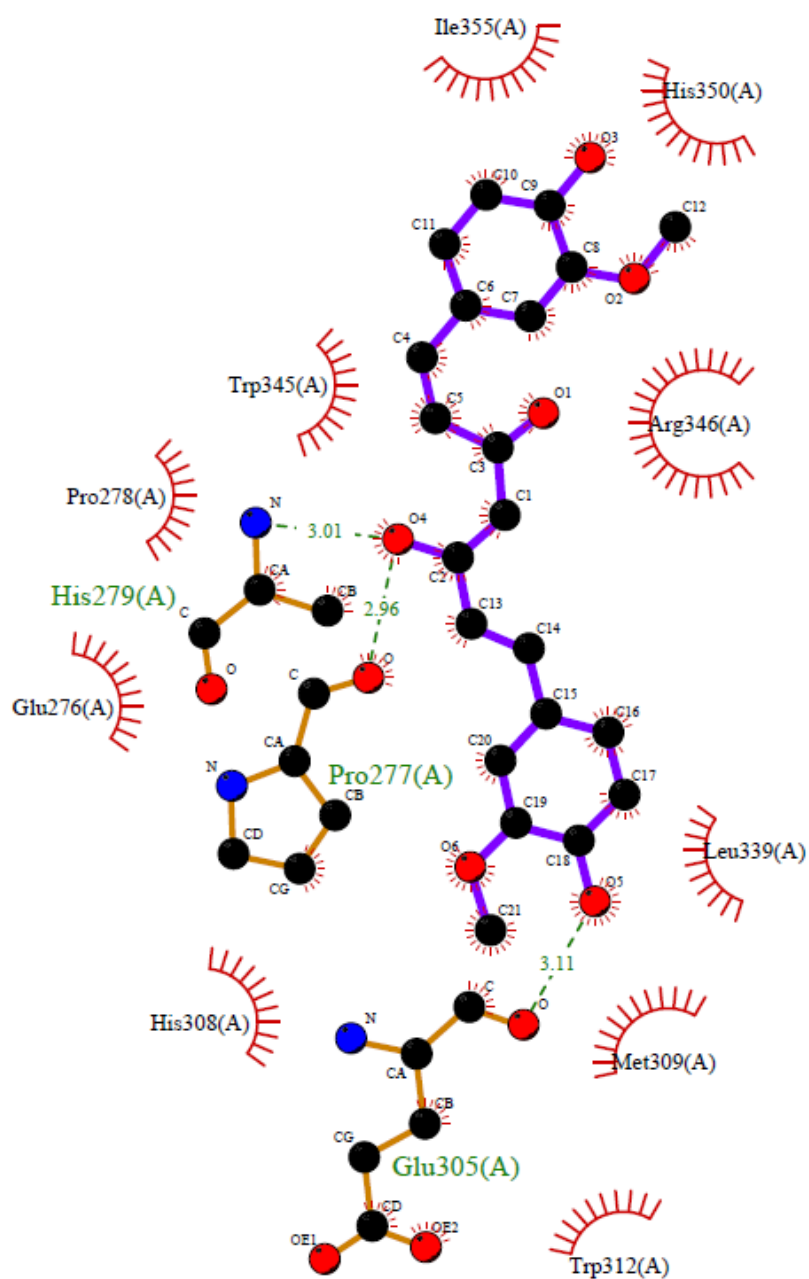


Figure S29 The first poses of the docked ligands to compound **KS2_enol**; hydrogen atoms are omitted; 112j.pdb protein (LigPlot+ v.2.2 software).

KS3

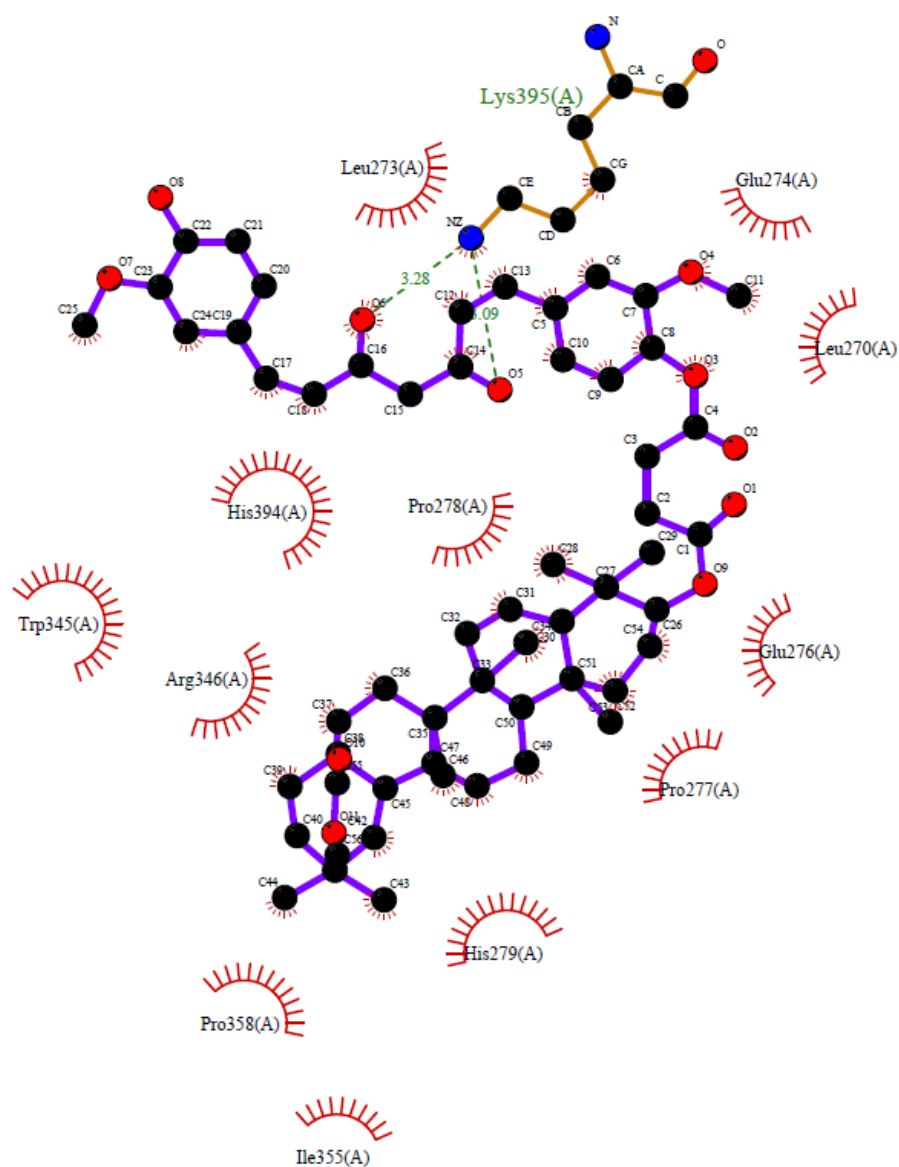


Figure S30 The first poses of the docked ligands to compound **KS3**; hydrogen atoms are omitted; 112j.pdb protein (LigPlot+ v.2.2 software).

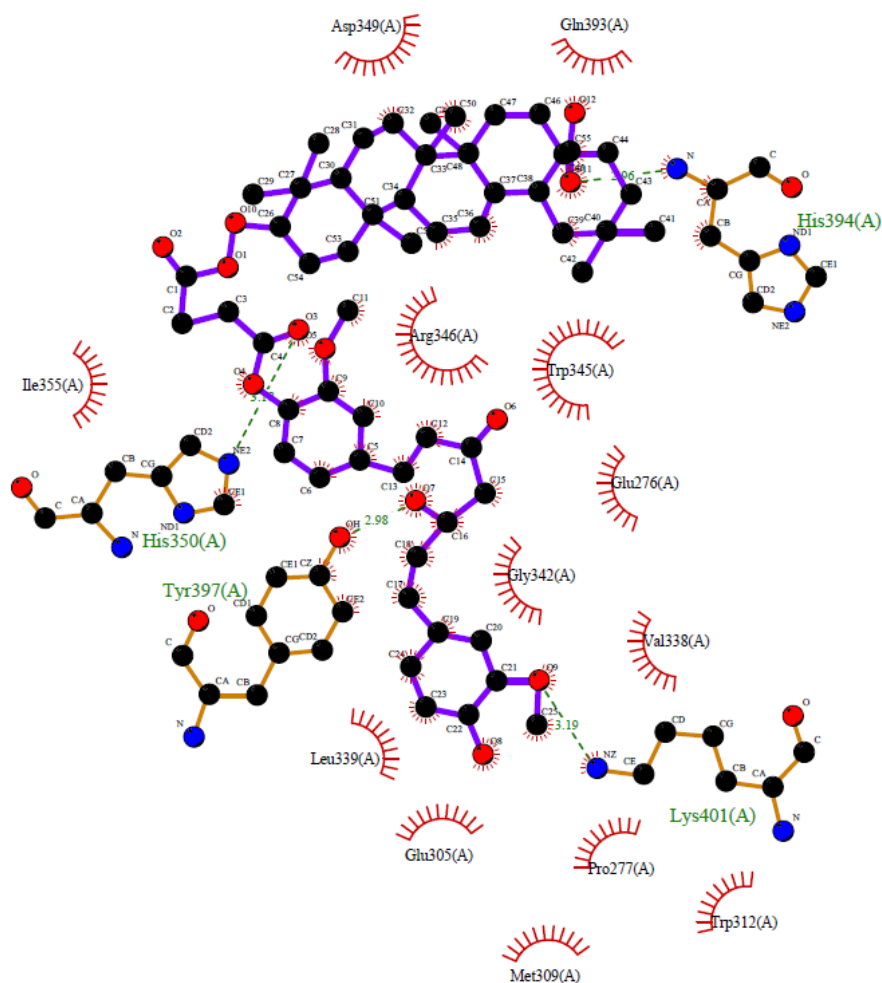


Figure S31 The first poses of the docked ligands to compound **KS4**; hydrogen atoms are omitted; 112j.pdb protein (LigPlot+ v.2.2 software).

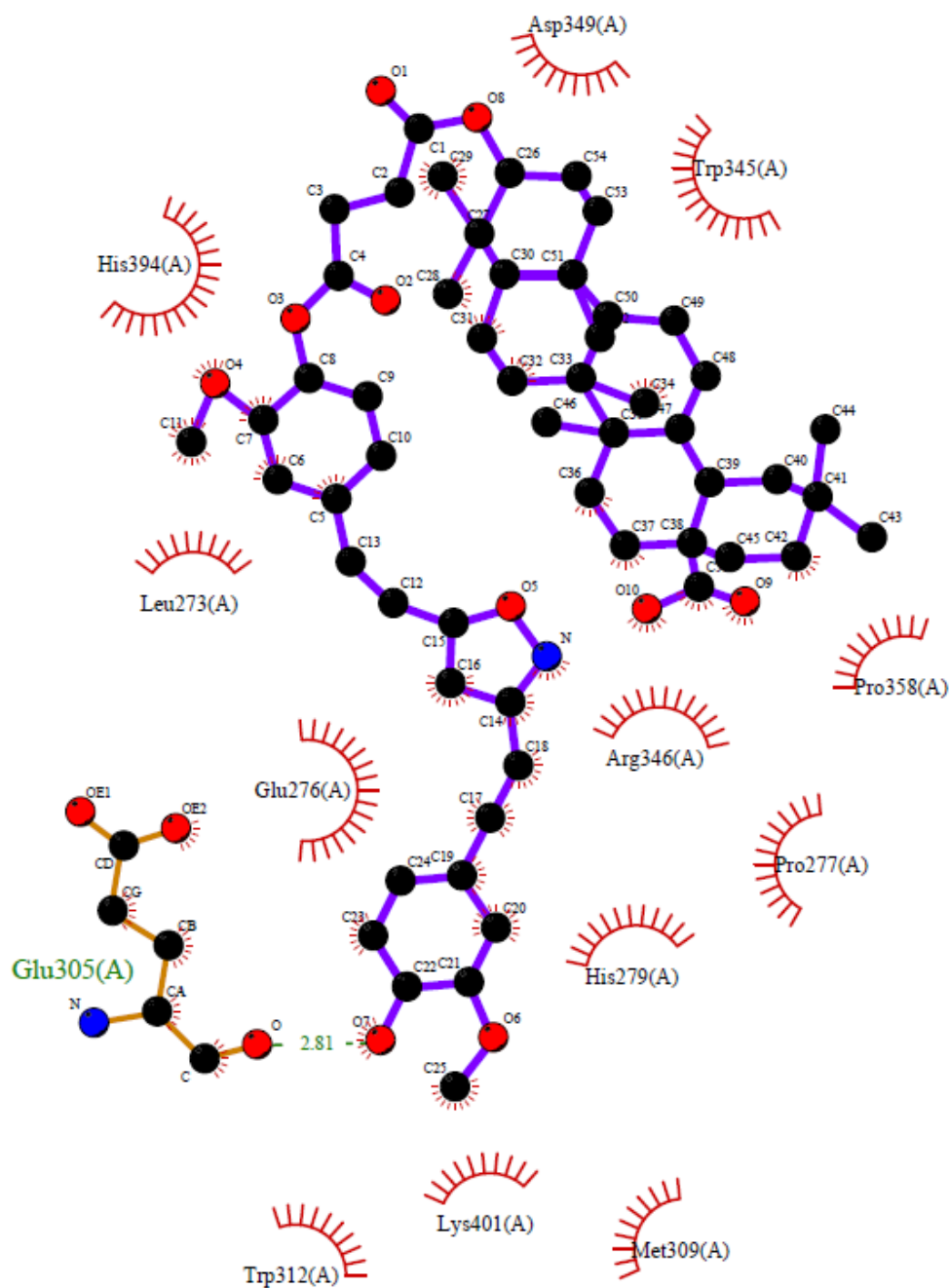


Figure S32 The first poses of the docked ligands to compound **KS6**; hydrogen atoms are omitted; 112j.pdb protein (LigPlot+ v.2.2 software).

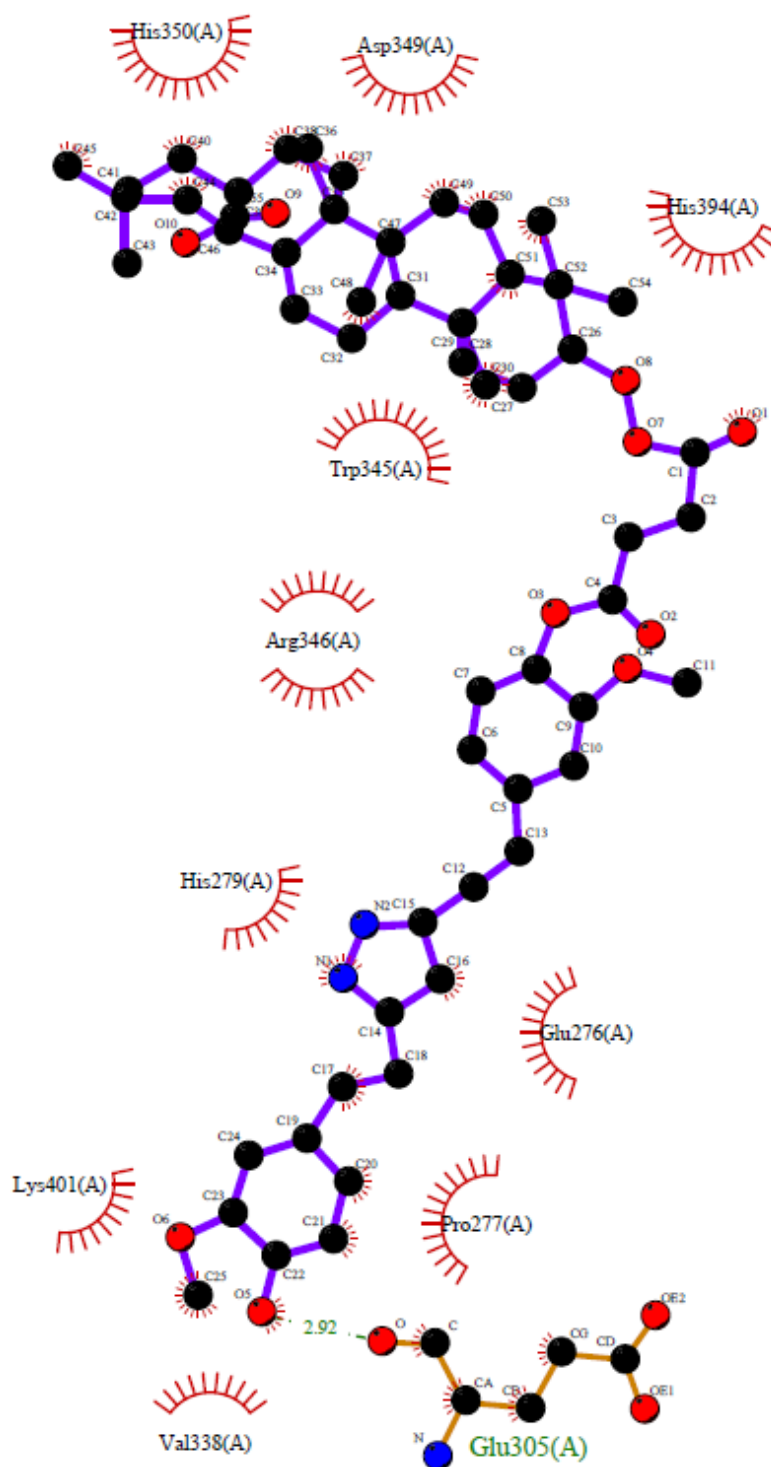


Figure S33 The first poses of the docked ligands to compound **KS6**; hydrogen atoms are omitted; 112j.pdb protein (LigPlot+ v.2.2 software).

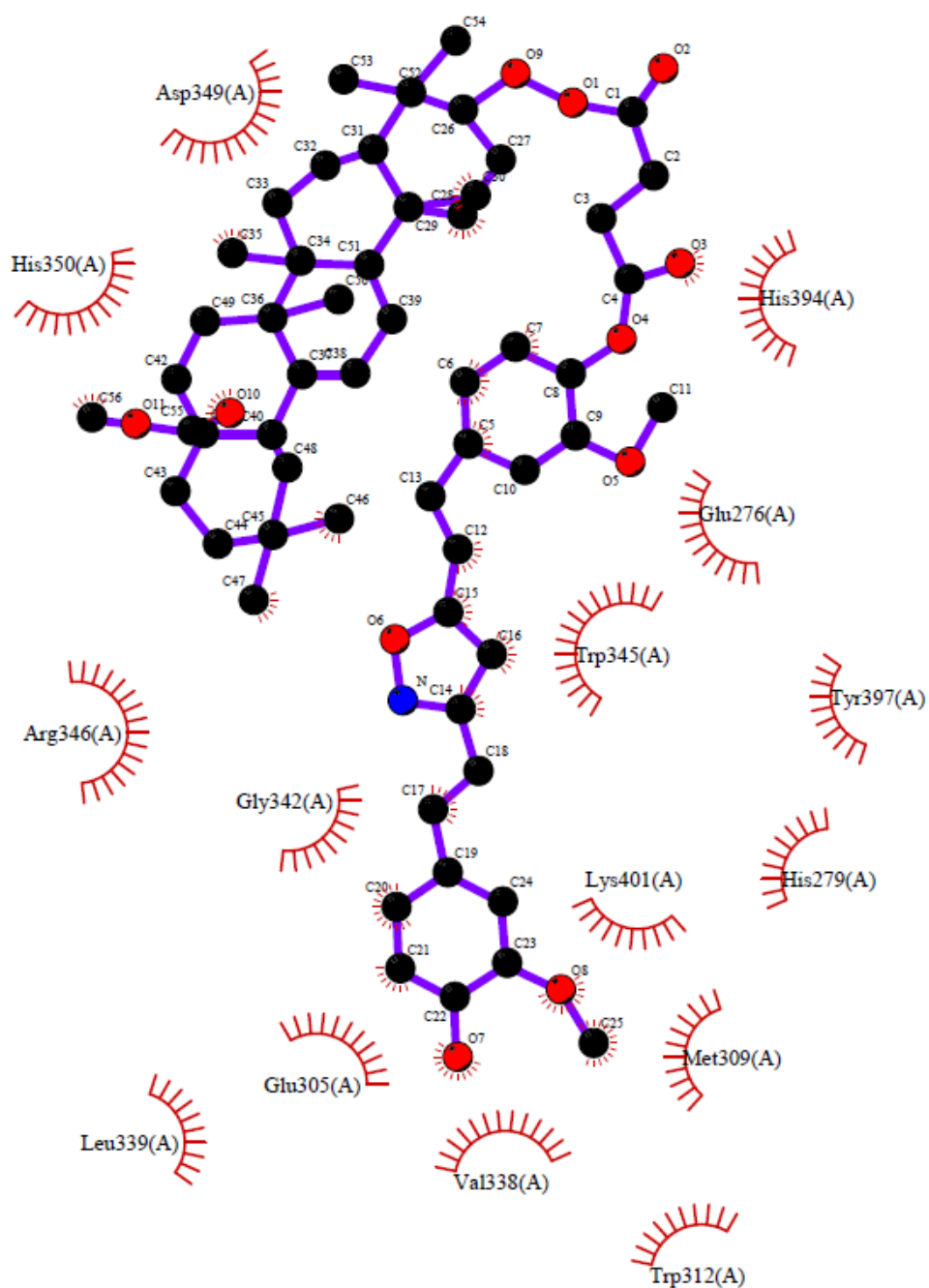


Figure S34 The first poses of the docked ligands to compound **KS7**; hydrogen atoms are omitted; 112j.pdb protein (LigPlot+ v.2.2 software).

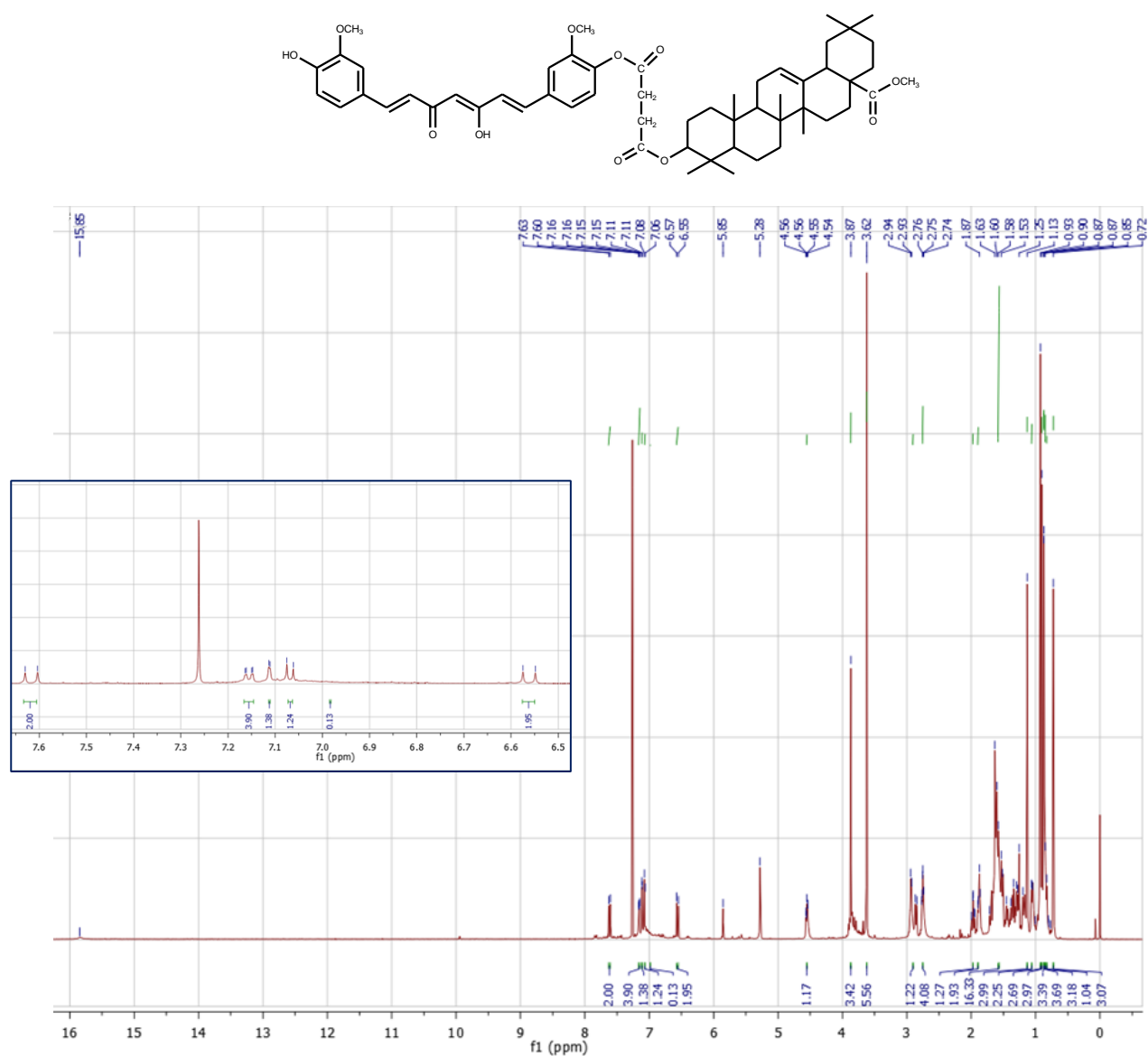


Figure S36 ¹H-NMR spectrum of Curcumin mono-oleanoyl hydrogen succinate methyl ester

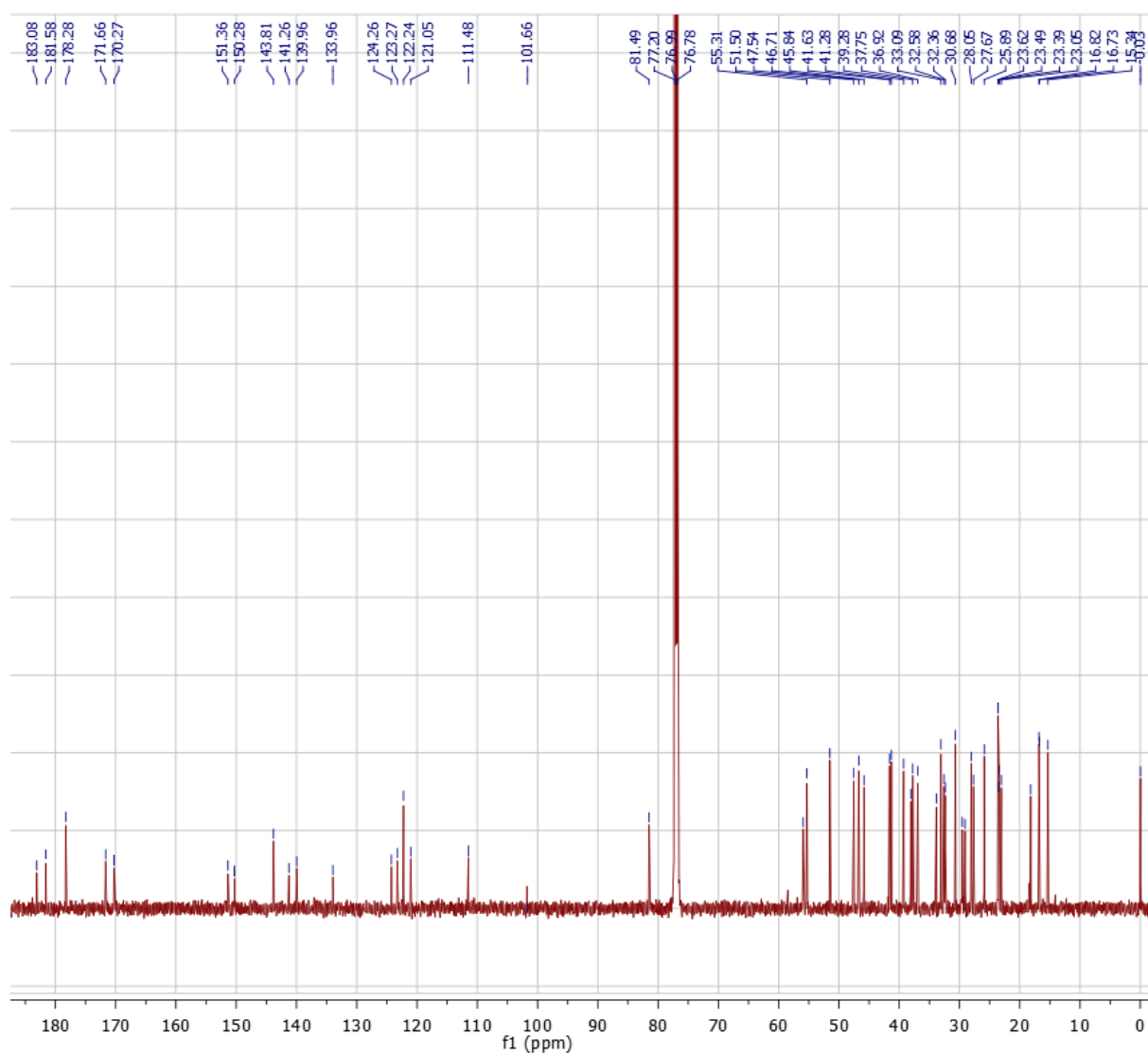


Figure S37 ^{13}C -NMR spectrum of Curcumin mono-oleanoyl hydrogen succinate methyl ester

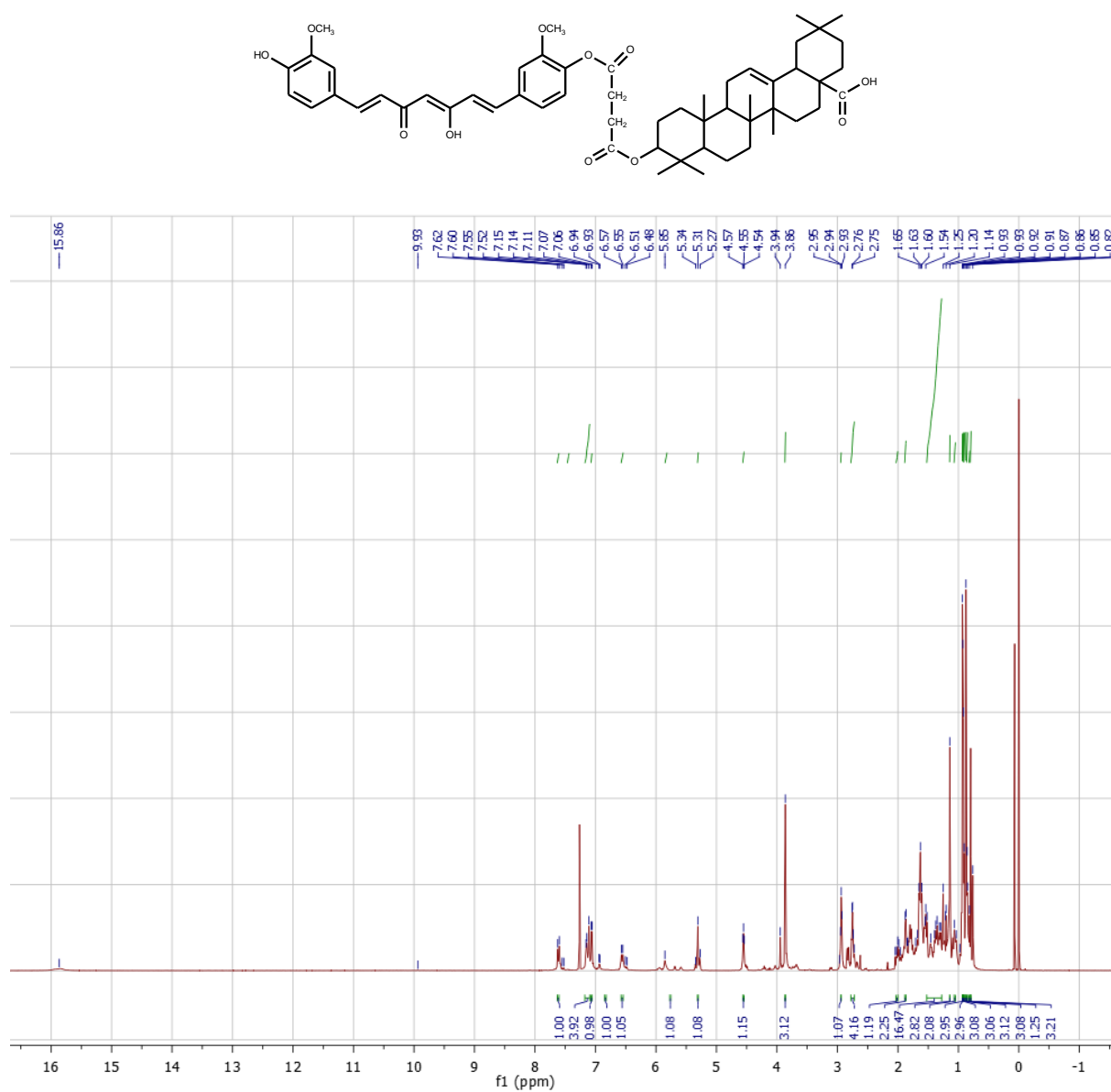


Figure S38 ^1H -NMR spectrum of Curcumin mono-oleanoyl hydrogen succinate

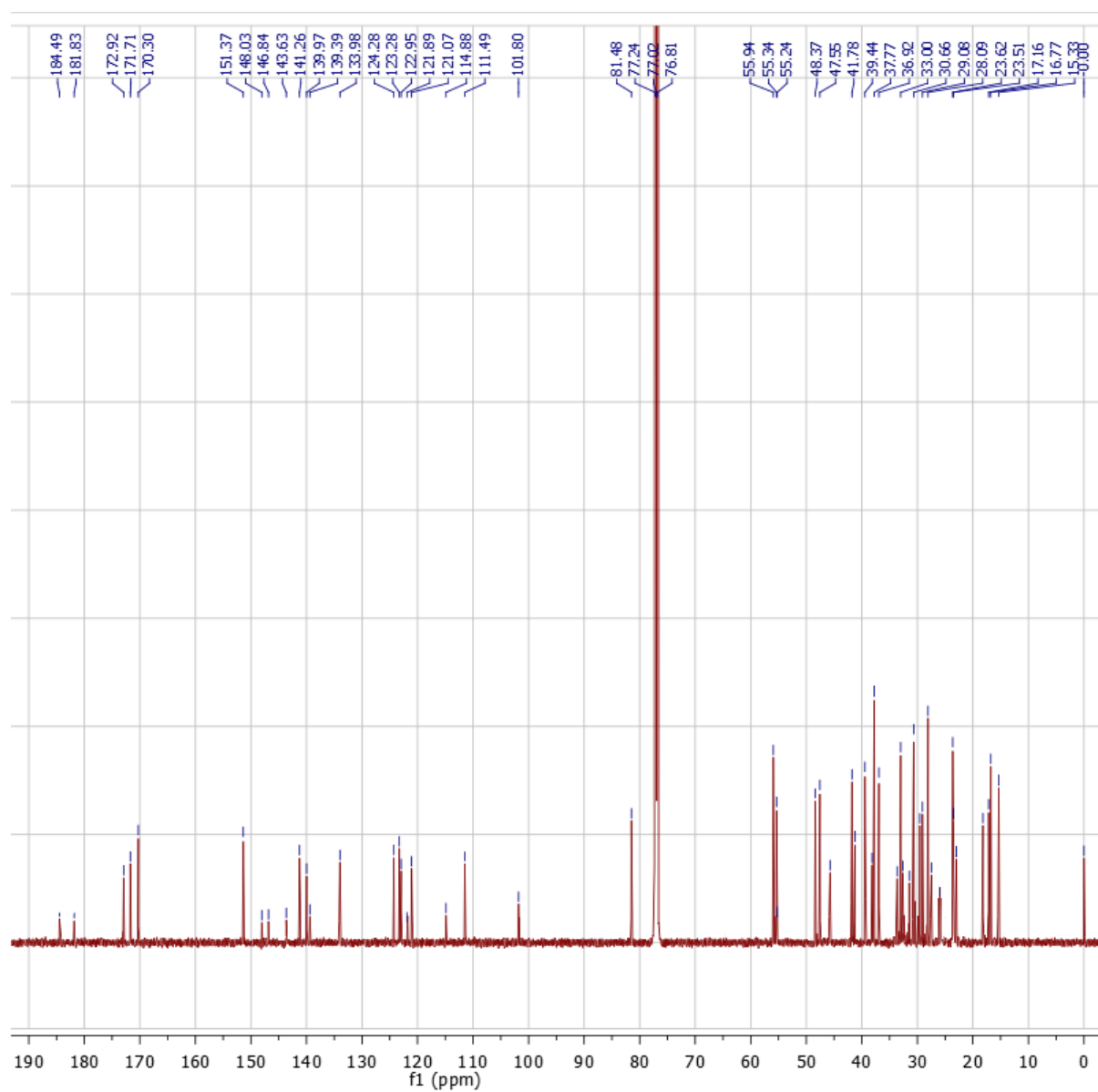


Figure S39 ¹³C-NMR spectrum of Curcumin mono-oleanoyl hydrogen succinate

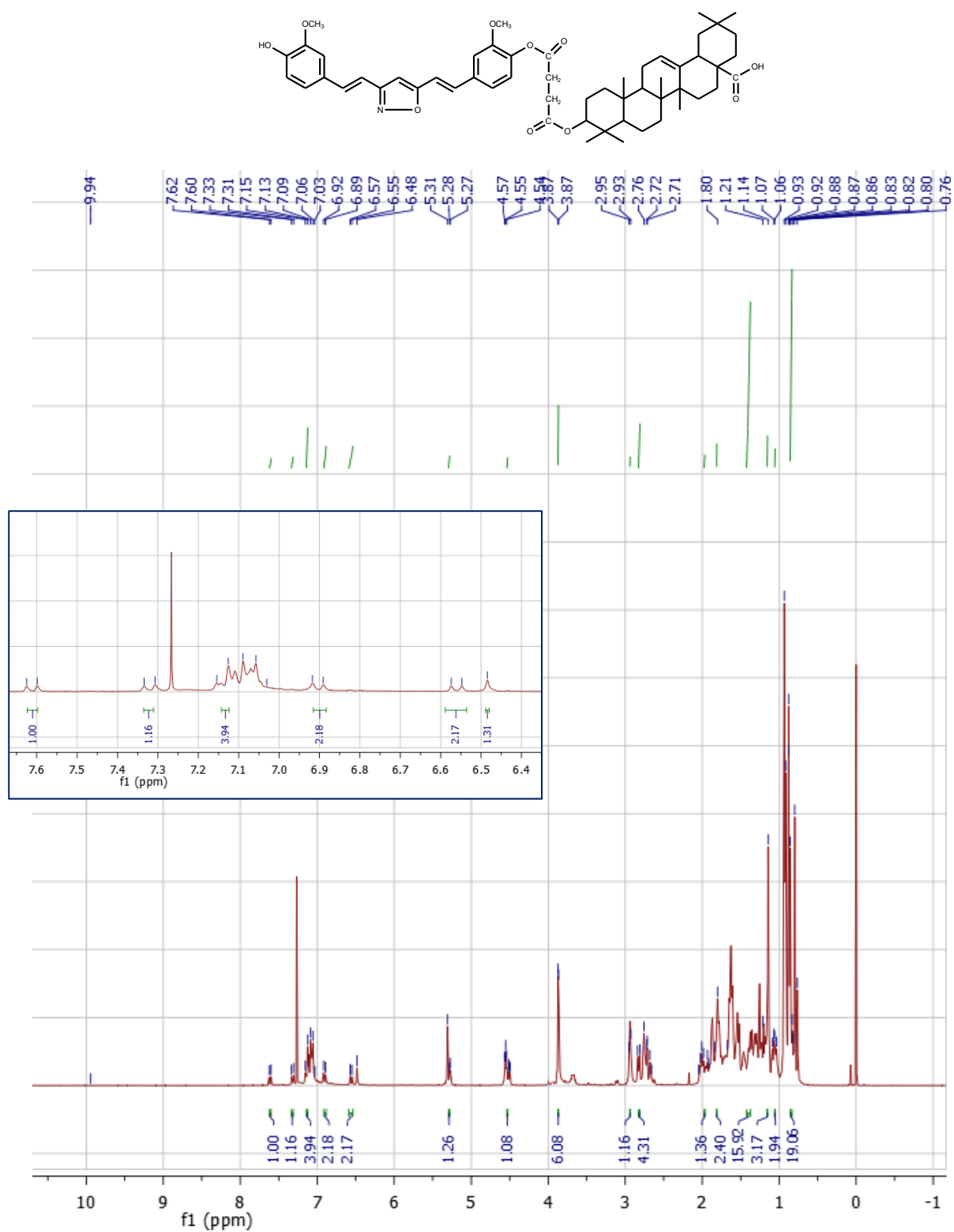


Figure S40 ^1H -NMR spectrum of Curcumin isoxazole mono-oleanoyl hydrogen succinate

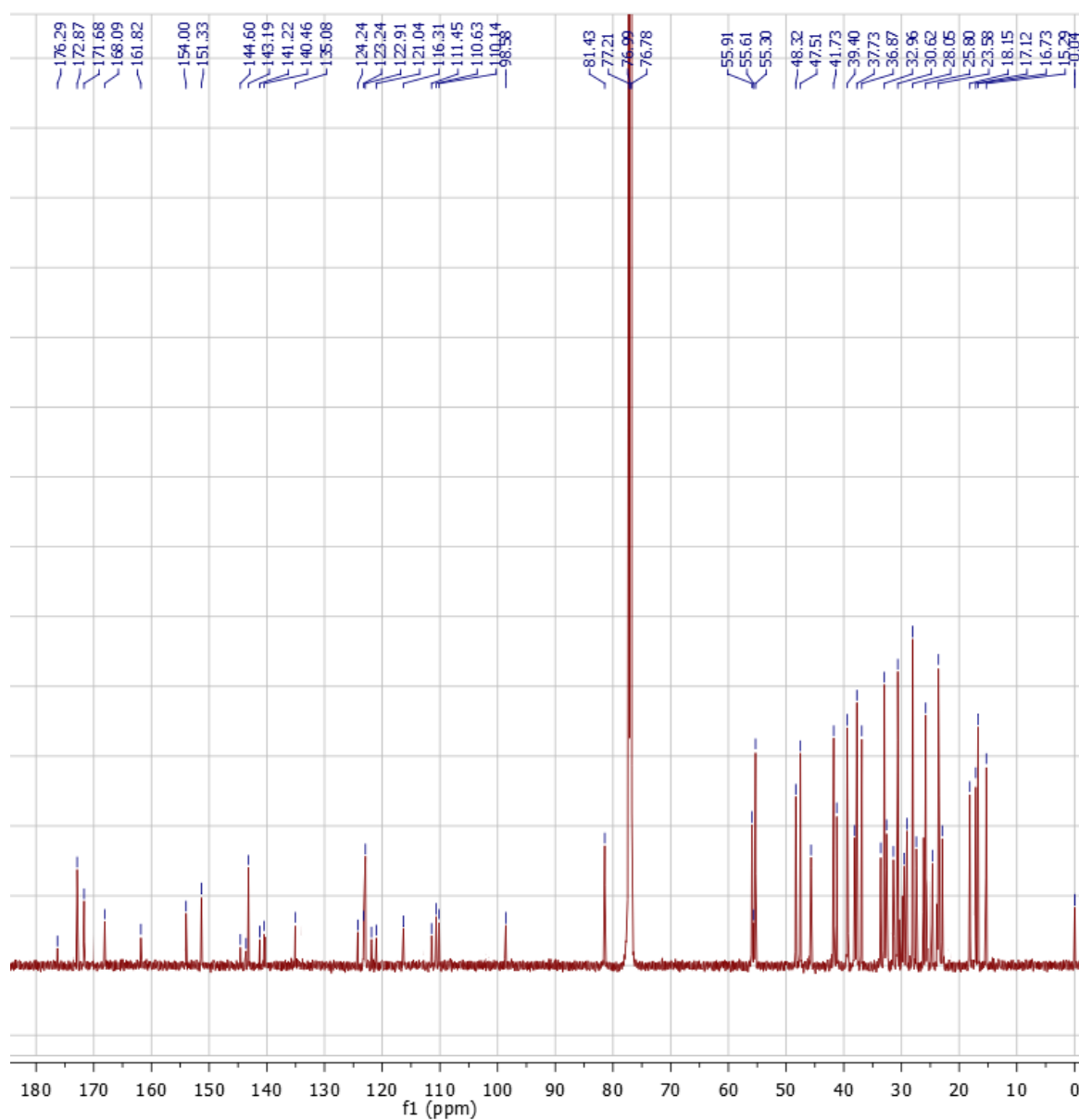


Figure S41 ^{13}C -NMR spectrum of Curcumin isoxazole mono-oleanoyl hydrogen succinate

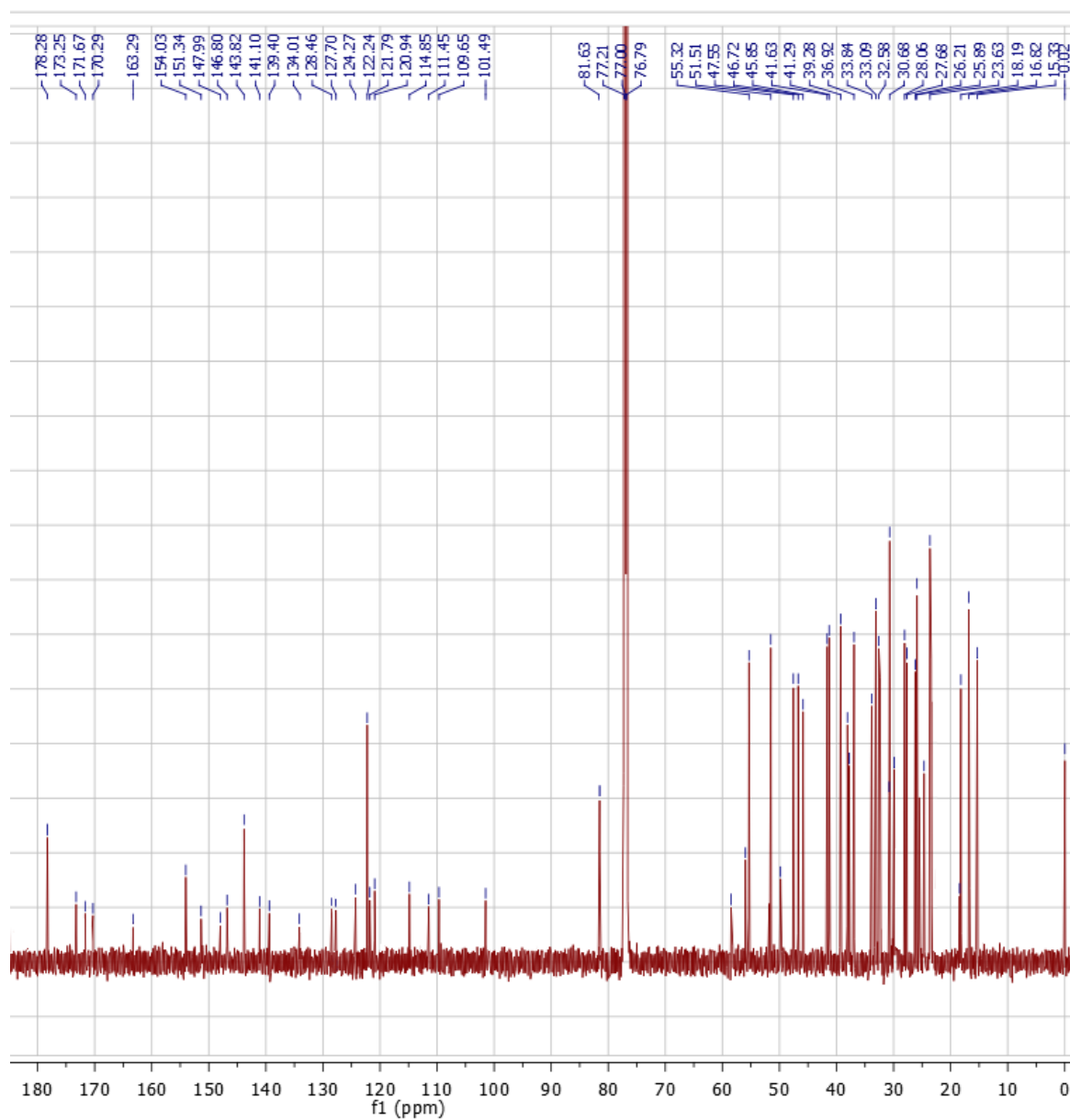


Figure S43 ^{13}C -NMR spectrum of Curcumin isoxazole mono-oleanoyl hydrogen succinate methyl ester