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Supplementary Information

V(V)-Schiff base species induce adipogenesis through structure-specific influence of genetic targets.

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Figure captions

Figure S1. Layers of complex assemblies in **1**, parallel to the (001) plane. Cyan dashed lines corespond to the O(22)-H(22)O···O(1)′ hydrogen bonds. Dark red and orange dashed lines indicate the shifted shifted π-π interactions of $[\mathbf{L_1}]^{2-}$ ligands.

Figure S2. Layers of clasters in **3**, parallel to the a axis. Cyan dashed lines corespond to the hydrogen bonding interactions. Violet dashed lines indicate the centroid to centroid shifted π-π interactions of $[\mathbf{L_2}]^{2-}$ ligands with the cooresponding distances.

Figure S3. Chain formation of complex assemblies in **4**, parallel to the *a* axis. Cyan dashed lines corespond to the hydrogen bonding interactions.

Figure S4. ESI-MS spectrum showing fragments-species emerging upon dissolution of **1** in methanolic solution containing 0.01% formic acid (**A**), and simulation spectrum of the m/z=355.02 species (**B**).

Figure S5. ESI-MS spectrum showing fragments-species emerging upon dissolution of **2** in aqueous solution (top) and simulation spectrum of the representative m/z=324.01 species (bottom).

Figure S6. ESI-MS spectrum showing fragments-species emerging upon dissolution of **3** in aqueous solution (top) and simulation spectrum of the representative m/z=293.99 species (bottom).

Figure S7. ESI-MS spectrum showing fragments-species emerging upon dissolution of **4** in aqueous solution (top) and simulation spectrum of the representative m/z=344.01 species (bottom).

Figure S8. UV-Vis spectra of compounds **1-4**.

Figure S9. TGA diagrams of compounds **1-4**.

Figure S10. Percent of cell survival in 3T3-L1 pre-adipocytes following treatment with various concentrations (1-200 μM) of L_1H_2, (**A**) L_2H_2 (**B**) and L_3H_2 (**C**) for 24 h. Sodium deoxycholate has been used as a positive control. Values represent the mean value of several (n=3) independent experiments. Vertical bars represent SEMs. *$p<0.05$ (significant), **$p<0.01$ (highly significant), ***$p<0.001$ (extremely significant) and ****$p \leq 0.0001$ (extremely significant) or non-significant ($p>0.05$).

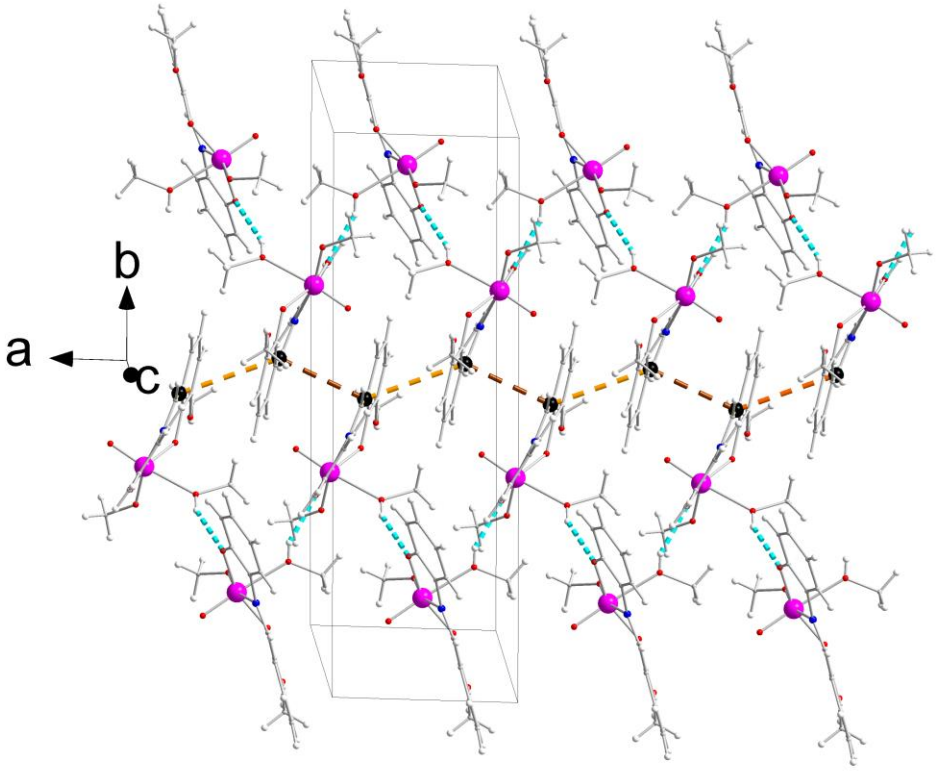


Figure S1

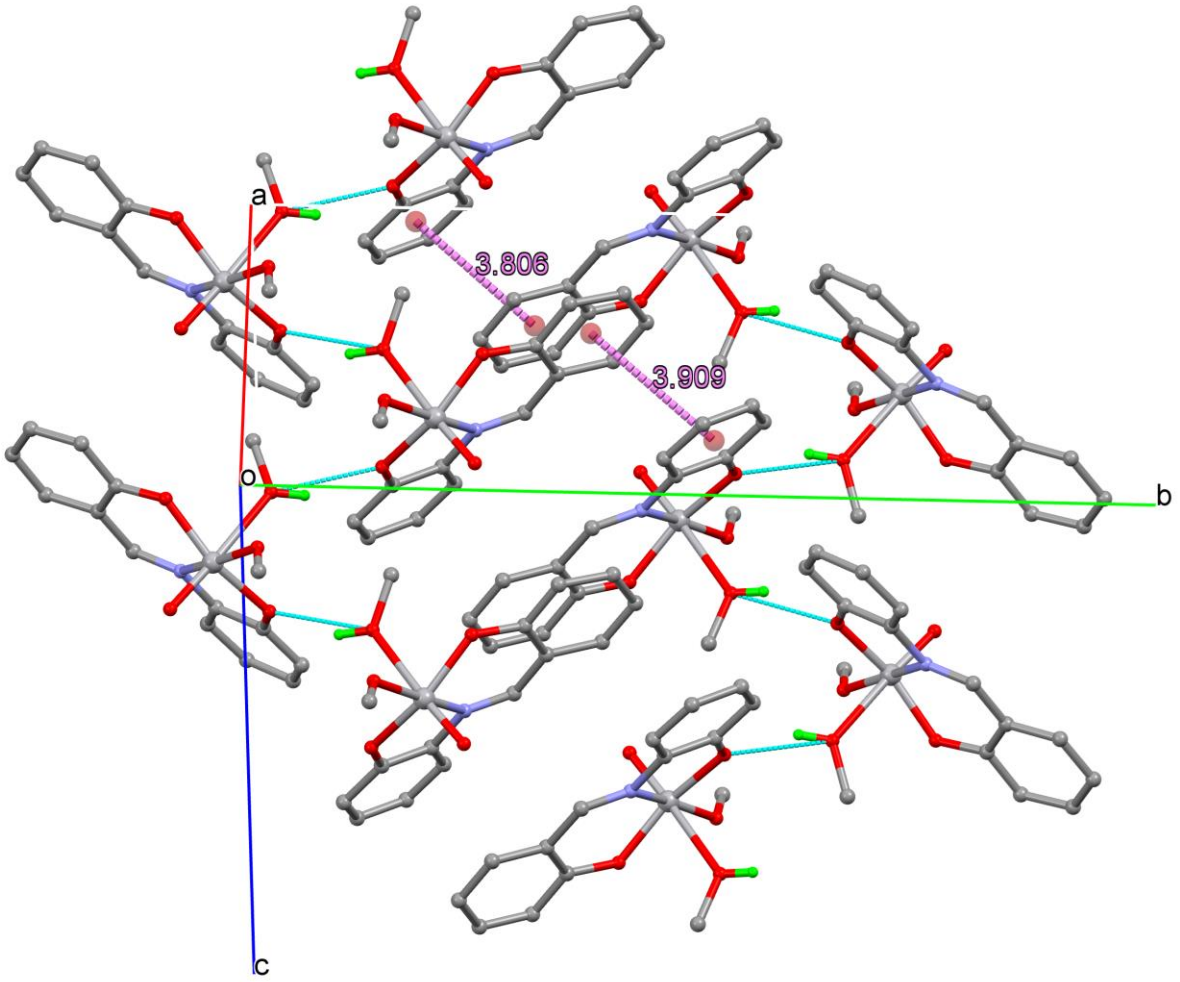


Figure S2

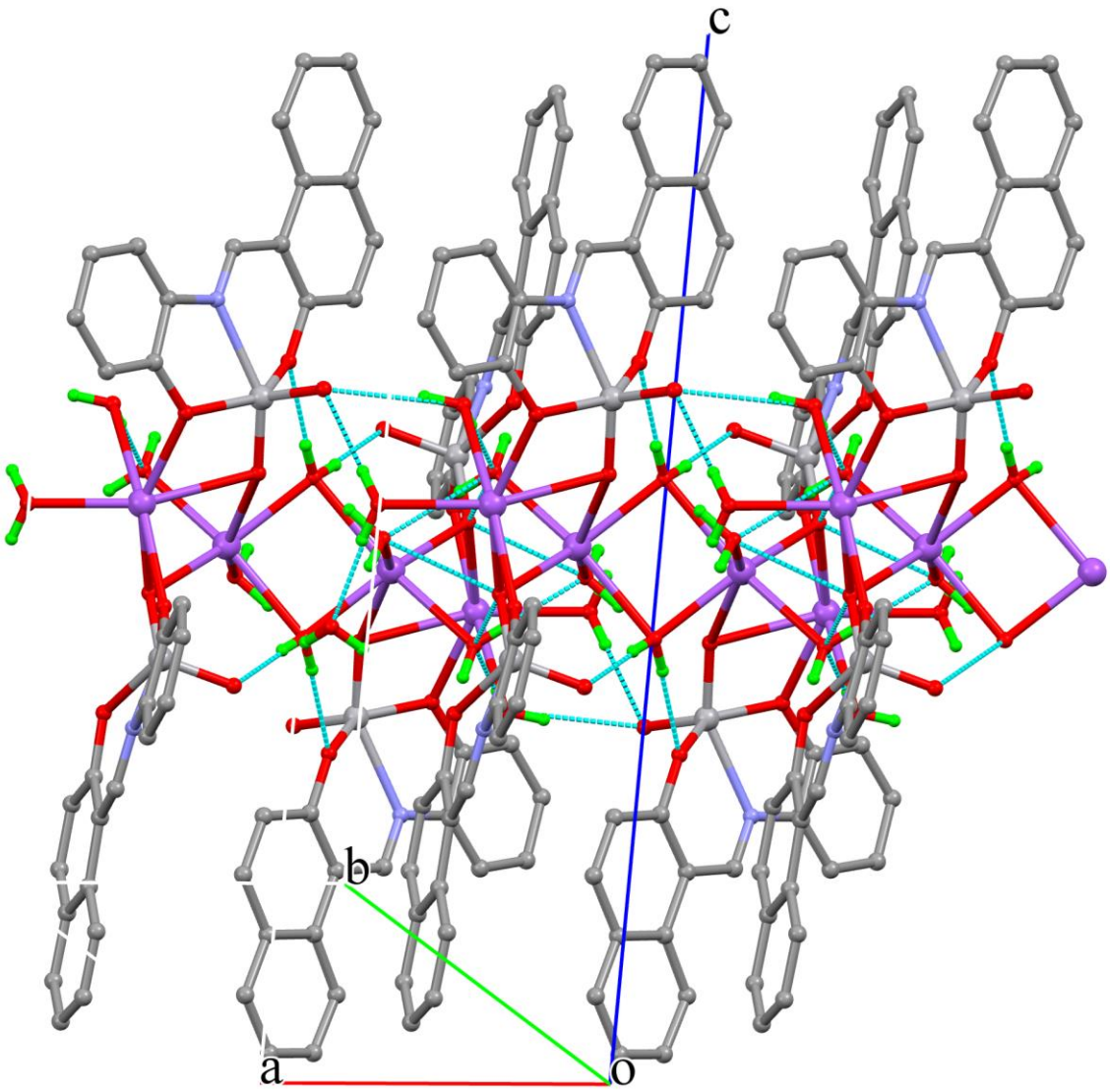
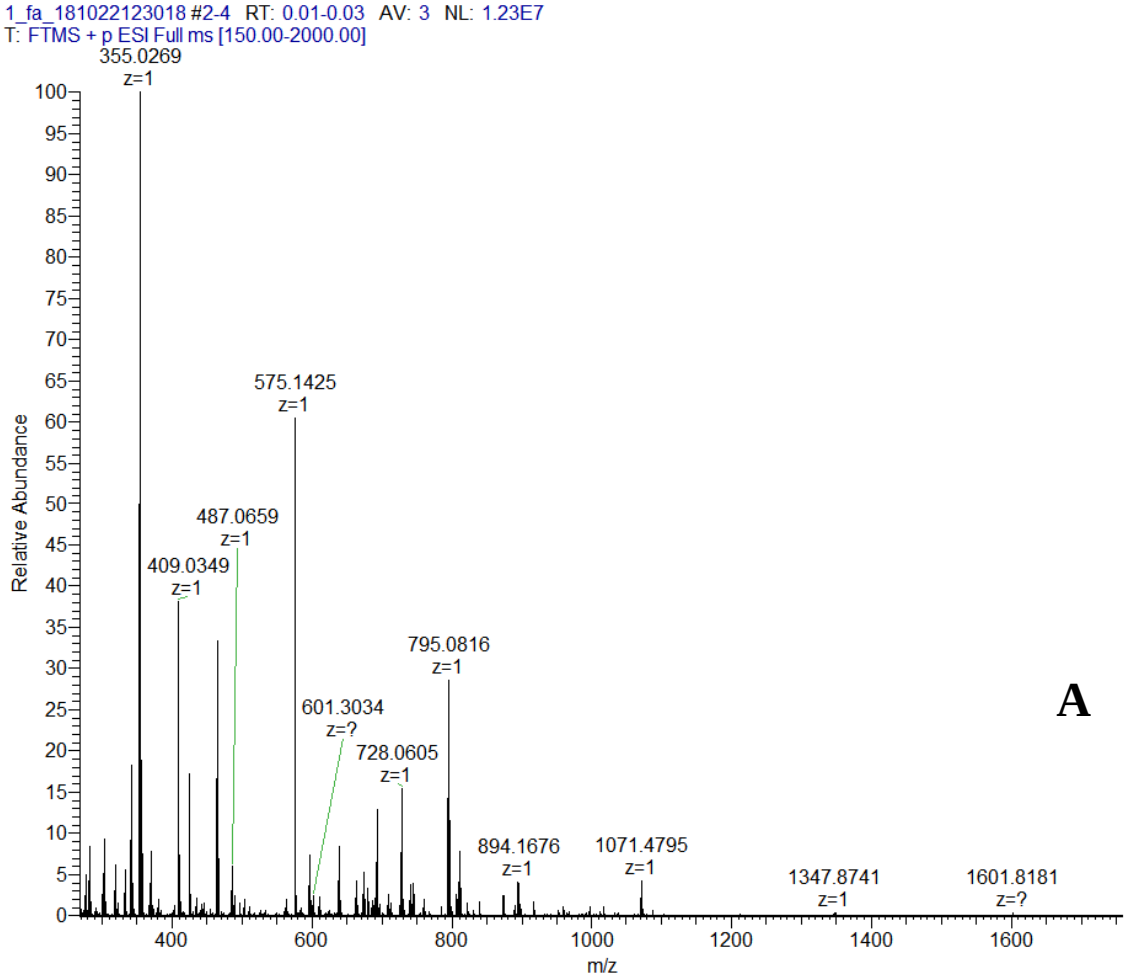


Figure S3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355.0269
z=1
575.1425
z=1
487.0659
z=1
409.0349
z=1
795.0816
z=1
601.3034
z=?
728.0605
z=1
894.1676
z=1
1071.4795
z=1
1347.8741
z=1
1601.8181
z=?
Relative Abundance
m/z
A

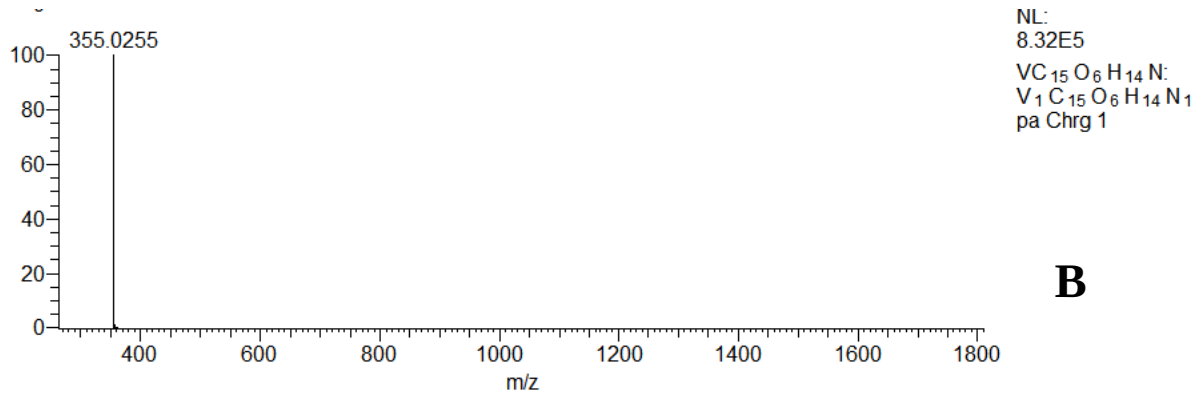

355.0255
NL:
8.32E5
VC15 O6 H14 N:
V1 C15 O6 H14 N1
pa Chrg 1
m/z
B

Figure S4

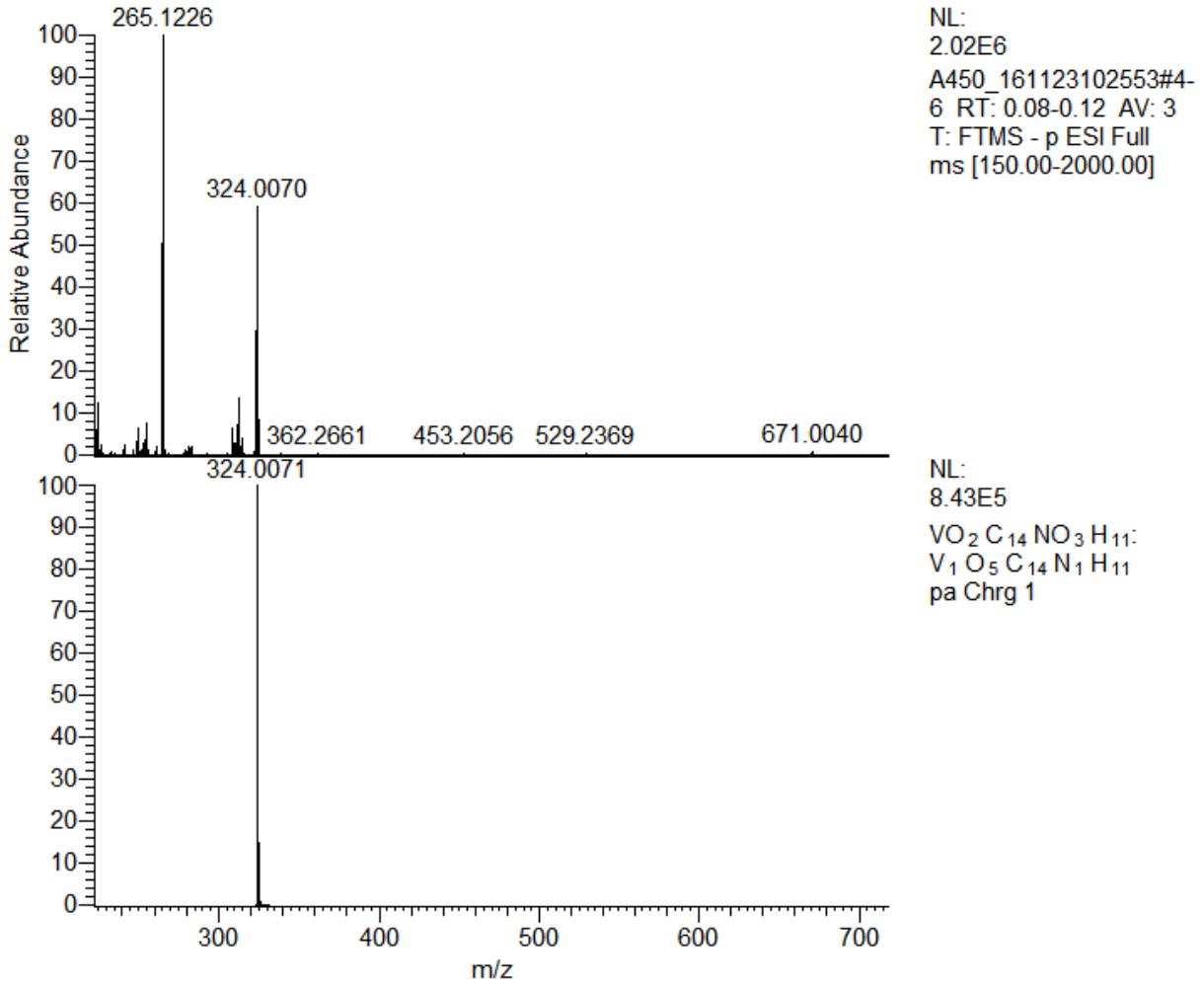

265.1226
324.0070
362.2661
453.2056
529.2369
671.0040
Relative Abundance
NL:
2.02E6
A450_161123102553#4-6 RT: 0.08-0.12 AV: 3
T: FTMS - p ESI Full ms [150.00-2000.00]
324.0071
NL:
8.43E5
VO2 C14 NO3 H11:
V1 O5 C14 N1 H11
pa Chrg 1
m/z

Figure S5

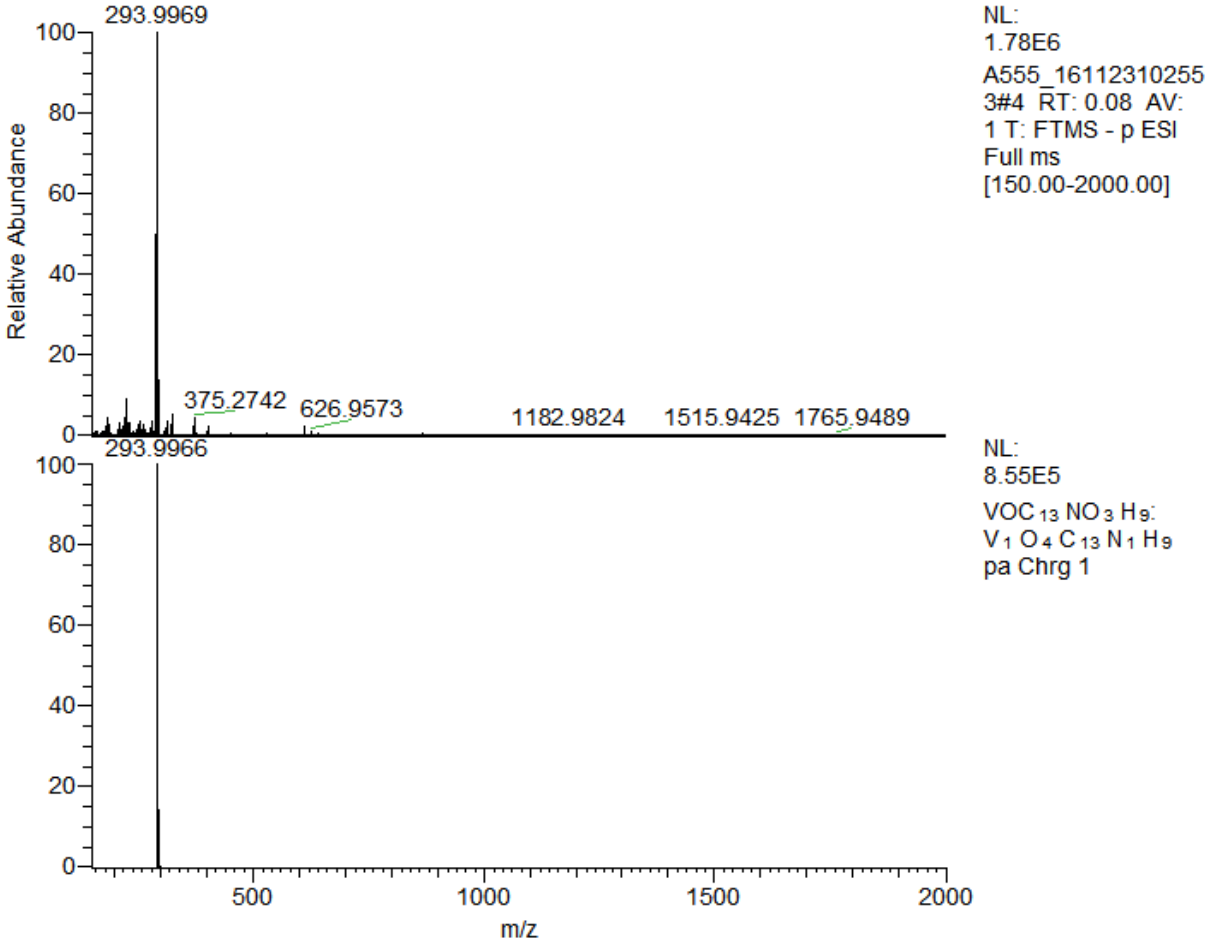

293.9969
NL:
1.78E6
A555_16112310255
3#4 RT: 0.08 AV:
1 T: FTMS - p ESI
Full ms
[150.00-2000.00]
Relative Abundance
375.2742
626.9573
1182.9824
1515.9425
1765.9489
293.9966
NL:
8.55E5
VOC13NO3H9:
V1O4C13N1H9
pa Chrg 1
m/z

Figure S6

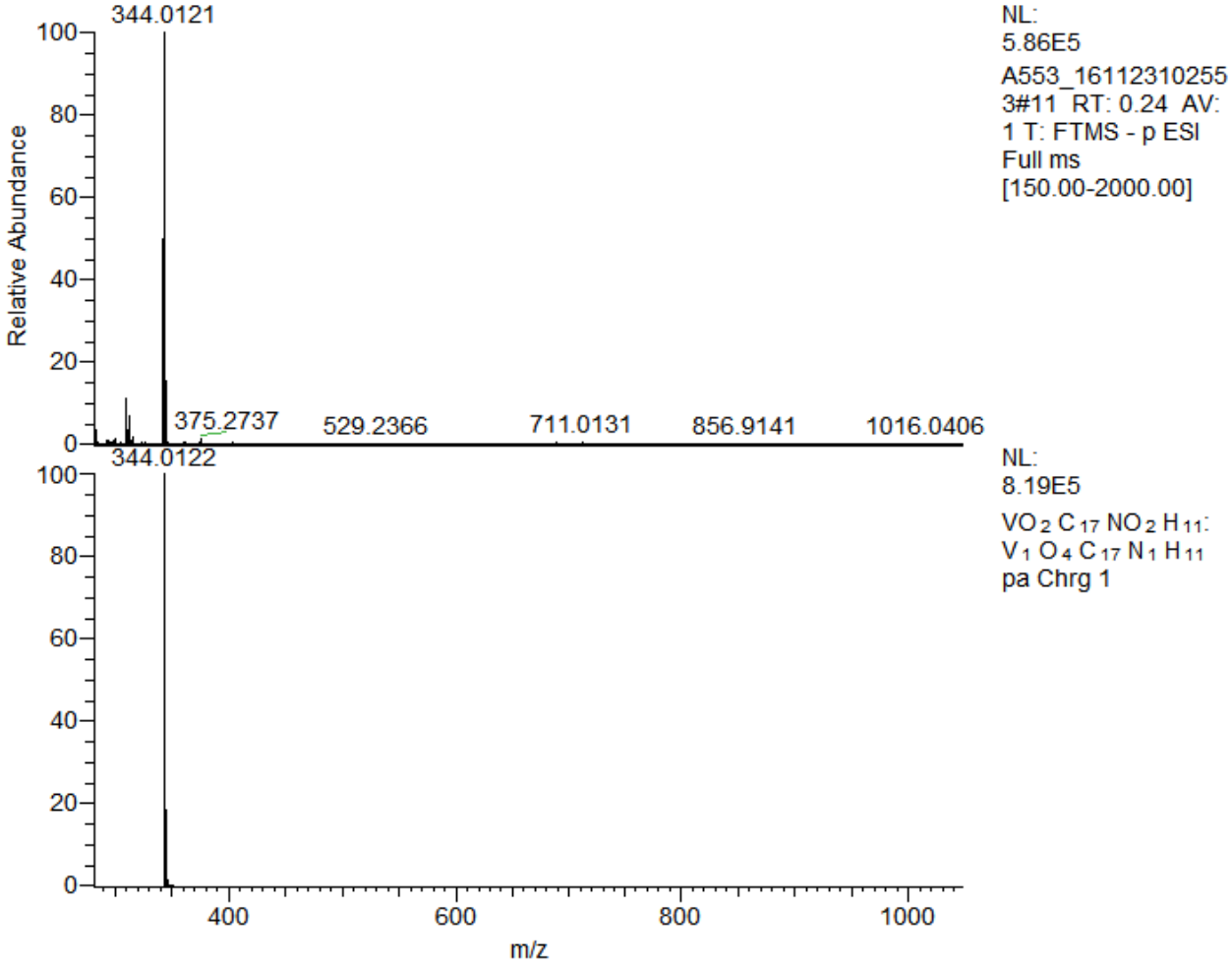
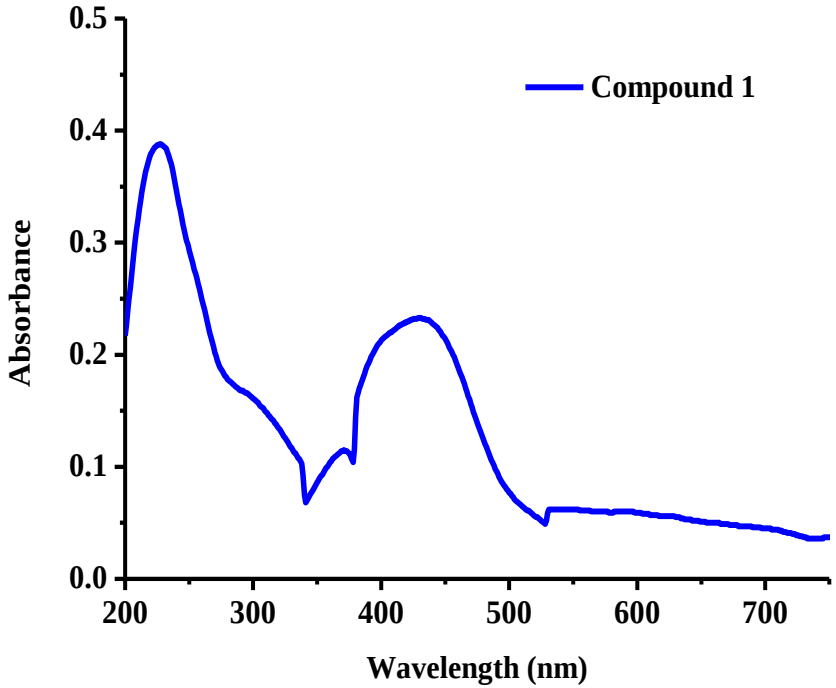
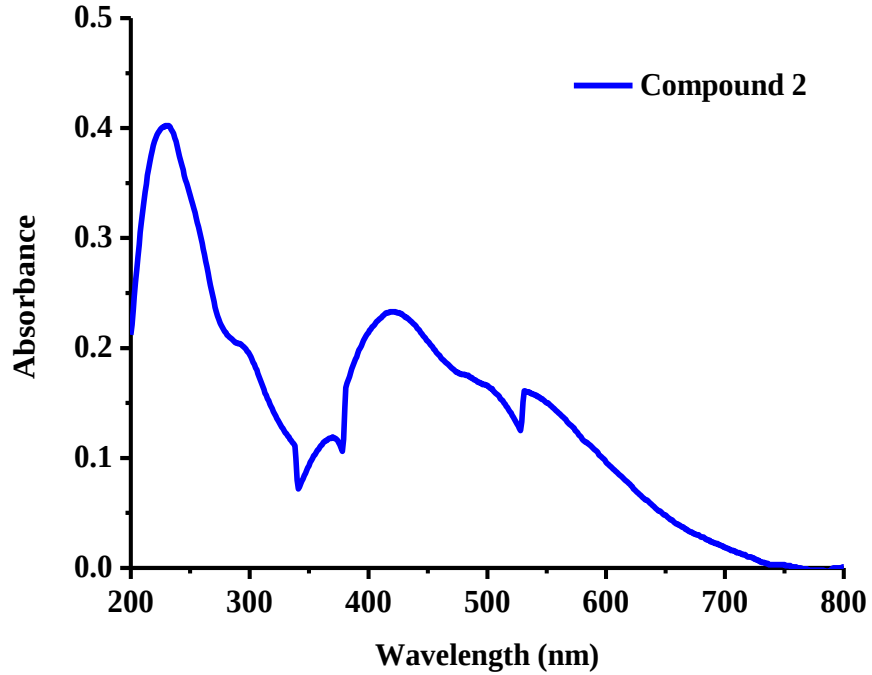
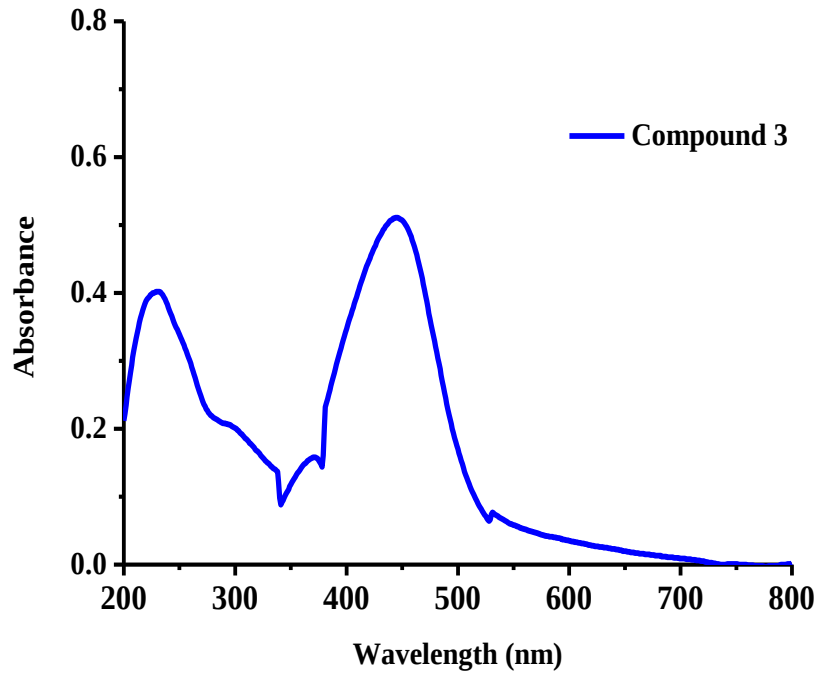

344.0121
NL:
5.86E5
A553_16112310255
3#11 RT: 0.24 AV:
1 T: FTMS - p ESI
Full ms
[150.00-2000.00]
Relative Abundance
375.2737
529.2366
711.0131
856.9141
1016.0406
344.0122
NL:
8.19E5
VO2 C17 NO2 H11:
V1 O4 C17 N1 H11
pa Chrg 1
m/z

Figure S7


Compound 1
Absorbance
Wavelength (nm)
0.0
0.1
0.2
0.3
0.4
0.5
200
300
400
500
600
700


Compound 2
Absorbance
Wavelength (nm)
0.0
0.1
0.2
0.3
0.4
0.5
200
300
400
500
600
700
800


Compound 3
Absorbance
Wavelength (nm)
0.0
0.2
0.4
0.6
0.8
200
300
400
500
600
700
800

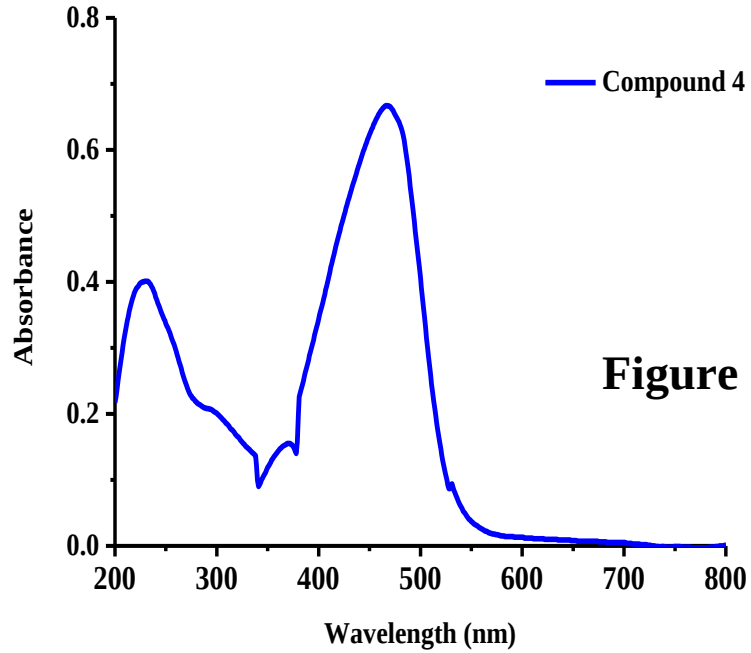
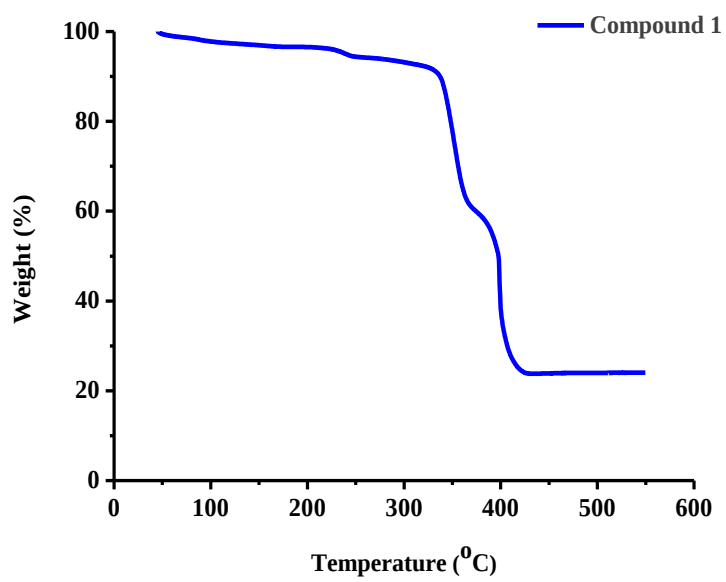
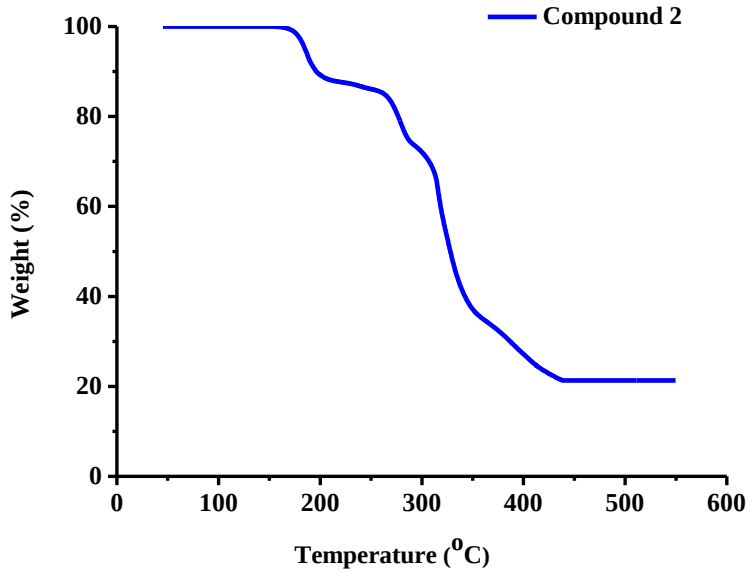
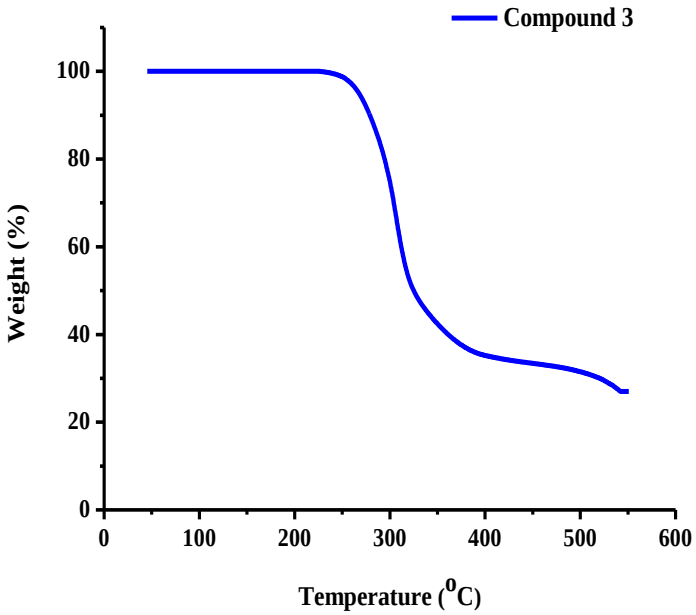

Compound 4
Absorbance
Wavelength (nm)
0.0
0.2
0.4
0.6
0.8
200
300
400
500
600
700
800

Figure S8


Compound 1
Weight (%)
Temperature (°C)
0
20
40
60
80
100
0
100
200
300
400
500
600


Compound 2
Weight (%)
Temperature (°C)
0
20
40
60
80
100
0
100
200
300
400
500
600


Compound 3
Weight (%)
Temperature (°C)
0
20
40
60
80
100
0
100
200
300
400
500
600

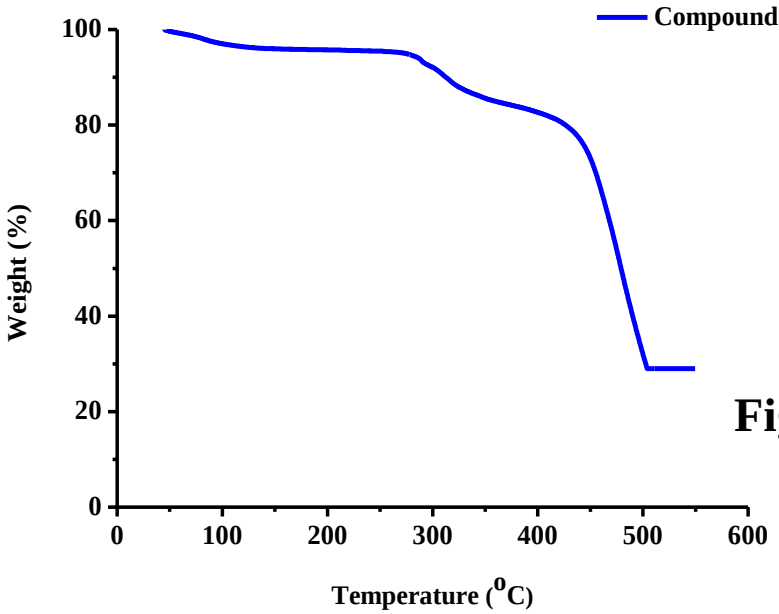

Compound 4
Weight (%)
Temperature (°C)
0
20
40
60
80
100
0
100
200
300
400
500
600

Figure S9

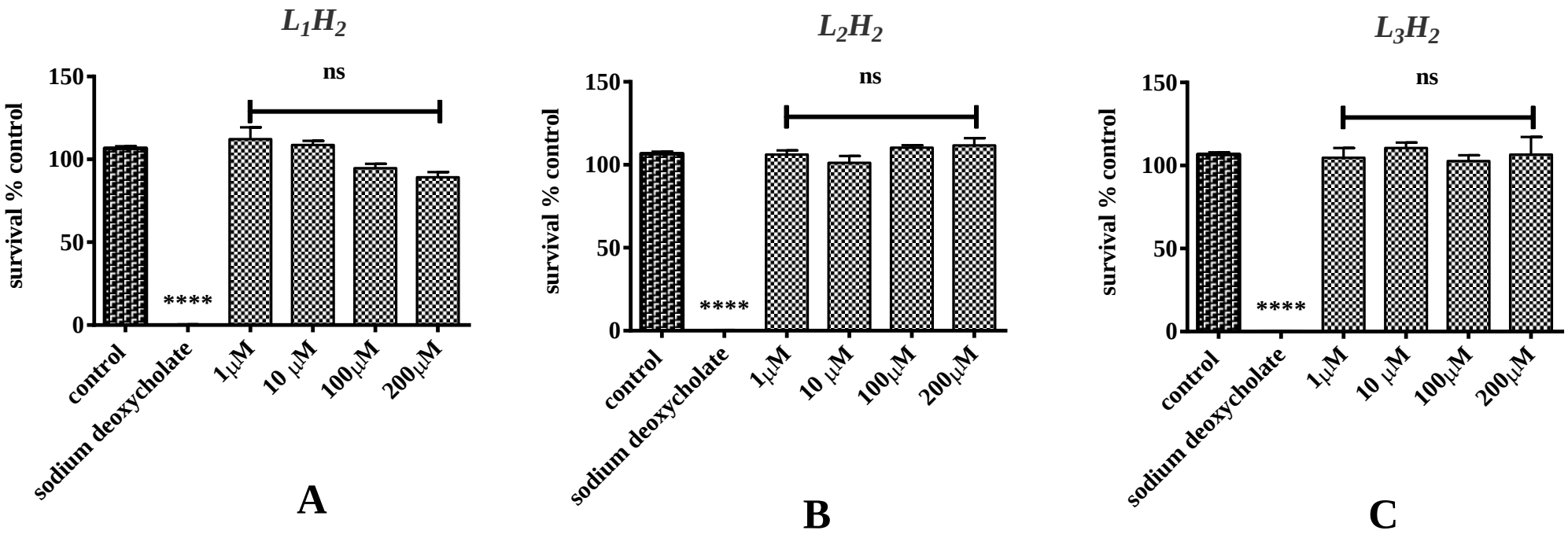

L_1H_2
L_2H_2
L_3H_2
ns
****
survival % control
150
100
50
0
control
sodium deoxycholate
1μM
10 μM
100μM
200μM
A
B
C

Figure S10