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 correspond 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 [L1]^{2-} ligands.

**Figure S2.** Layers of clusters in 3, parallel to the a axis. Cyan dashed lines correspond to the hydrogen bonding interactions. Violet dashed lines indicate the centroid to centroid shifted π-π interactions of [L2]^{2-} ligands with the corresponding distances.

**Figure S3.** Chain formation of complex assemblies in 4, parallel to the a axis. Cyan dashed lines correspond 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_{1}H_{2}, (A) L_{2}H_{2} (B) and L_{3}H_{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 ≤ 0.0001 (extremely significant) or non-significant (p>0.05).
Figure S1
Figure S4
Figure S5
Figure S6
Figure S7
Figure S8
Figure S9
Figure S10