Table:

$^{13}$C NMR chemical shifts (ppm) for each Eu(III) Complex in Methanol (10wt%)

(notes)

1. The assignment for each carbon was followed the previous paper. (Ref. 3c)
2. The assignments for the alkylchains in the dec-ala, dod-ala, and tetd-ala complexes were not performed.
3. Chemical shifts for the carbon-2 were overlapped with that of methanol.

1) Eu(acetyl-ala)$_3$
   
   C1, C4 : 168.90, C3, C5: 24.15, 23.50

2) Eu(but-ala)$_3$
   

3) Eu(hex-ala)$_3$
   
   C1, C4: 174.78, C5: 37.63, C7: 33.64, C6: 27.69, C3: 24.52, C8: 22.27, C9: 15.39

4) Eu(oct-ala)$_3$
   
   C1, C4: 174.81, C5: 37.89, C9: 34.43, C7, C8: 31.92, 31.73, C6: 28.54, C10: 25.22, C3: 23.24, C11: 16.00

5) Eu(dec-ala)$_3$
   
   C1, C4: 174.34, C5: 37.72, C3, C6-C13: 34.21, 31.83, 31.74, 31.64, 31.62, 28.20,
24.91, 22.73, 15.68

6) Eu(dod-ala)$_3$
   
   C1, C4: 175.63, C5: 36.98, C3, C6-C15: 33.20, 31.83, 30.91, 30.84, 30.69, 30.63, 30.57, 27.17, 23.87, 21.19, 14.65

7) Eu(tetd-ala)$_3$
   
   C1, C4: 175.58, C5: 36.55, C3, C6-C17: 32.32, 30.01, 29.88, 29.73, 29.59, 28.45, 26.21, 22.99, 18.61, 17.70, 13.72 (two carbons were almost overlapped with others)

8) Eu(oct-phe)$_3$
   
   C1, C10: 173.83, C4-C9 (benzene ring): 139.11, 130.65, 129.90, 128.05, C3: 42.38, C11: 37.12, C15: 33.68, C13, C14: 31.45, 31.05, C12: 27.88, C16: 24.54, C17: 15.35

9) Eu(oct-ser)$_3$
   
   C1, C4: 175.01, C3: 70.35, C5: 37.93, C9: 34.14, C7, C8: 31.93, 31.52, C6: 28.15, C10: 24.93, C11: 15.69
Fig. S1.

(a) Eu(hex-ala)$_3$·0.5H$_2$O

(b) Eu(oct-phe)$_3$·2H$_2$O (virgin)

(c) Eu(oct-phe)$_3$·H$_2$O (annealed)
Fig. S2.
Fig. S3.
Fig. S4.
Fig. S5.

(a) Eu(oct-ala)$_3$·H$_2$O

(b) Eu(hex-ala)$_3$·0.5H$_2$O
Fig. S6.
Fig. S7.