



Fig. S1. X-ray diffraction patterns for (a) CaAl-LDH and (b) CaFe-LDH, and the products obtained from coprecipitation of (c)  $\text{Ca}^{2+}$ ,  $\text{Al}^{3+}$  and taurine, (d)  $\text{Ca}^{2+}$ ,  $\text{Fe}^{3+}$  and taurine.

For the coprecipitation, mixed solution containing  $\text{Ca}^{2+}$ ,  $\text{M}^{3+}$  (either  $\text{Al}^{3+}$  or  $\text{Fe}^{3+}$ ) and taurine with molar ratio of 2:1:1 was prepared and then 1.26 mol/L NaOH solution was dropwisely added until the coprecipitation pH ( $\sim 11.5$  and  $\sim 13.0$  for CaAl- and CaFe-LDH, respectively). Figure S1 shows the X-ray diffraction patterns for CaM-LDHs and the products obtained from coprecipitation of metal and taurine. The diffraction patterns of the coprecipitated products (Figure S1 (c) and (d)) are almost similar to those of CaM-LDHs ( $\text{NO}_3^-$  intercalated phase), suggesting that the coprecipitation is not a suitable route to intercalate taurine molecules into CaM-LDHs.