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## **Supporting Information for**

## Assembly of alizarin red S/boric acids ultrathin films based on

## layered double hydroxide with fluorescence turn on detection of

## tiopronin

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**Fig. S1** (A-B) SEM of the powdered samples of  $Mg_2Al-NO_3-LDH$ ; (C) XRD patterns of powdered samples of LDH: (a)  $Mg_2Al-CO3-LDH$ , (b)  $Mg_2Al-NO3-LDH$ ; (D) digital picture of its colloidal suspension.



Fig. S2 UV-vis absorption spectra  $(ARS-H_3BO_3/LDH)_{40}$  UTFs fabricated with different pH (pH=5.0, 6.0, 7.0, 8.0, respectively).

**Table S1.** The date analysis of confocal microscope about  $(ARS-H_3BO_3/LDH)_{40}$  UTFs assembled on the quartz substrates with different pH.

pH 值	5.0	6.0	7.0	8.0
C <sub>boric acid</sub> =0.2M (Mean Value)	4.22	7.59	14.98	9.73



Fig.S3 The correlation between the times and the fluorescence intensity at 622nm after adding into 3600nM Cu<sup>2+</sup> (  $\lambda_{ex}$ =510 nm).



Fig.S4 XRD of  $(ARS-H_3BO_3/LDH)_{40}$  UTFs after four measurement cycles.