Supplementary Materials: Design Mechanism and Property of the Novel Fluorescent Probes for the Identification of *Microthrix parvicella* in Situ

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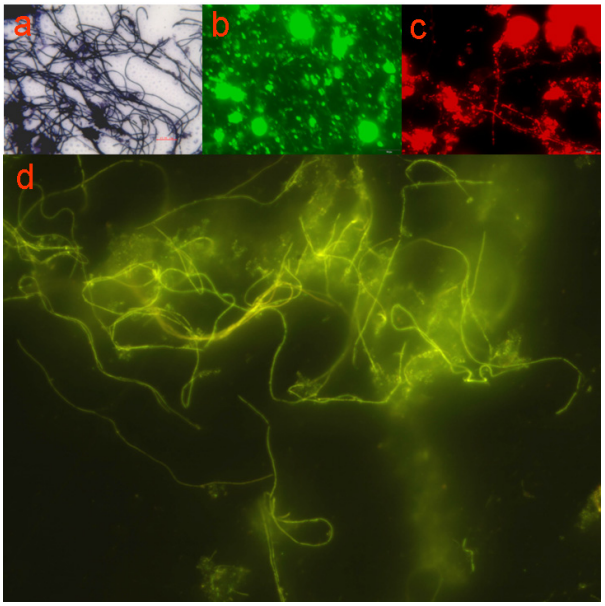

Figure S1. Images taken in Gram staining (**a**), FISH staining (**b**, **c**) and the novel probe identifying (**d**) of sludge samples. Green colour represents for the bacteria encountered in the sludge (EUB mix (EUB338, EUB338II, EUB338III) (**b**); Red color marks the targeted filamentous organism of *M. parvicella* (MPA60, MPA223, MPA645) (**c**); the identification image of novel probe A in our article for *M. parvicella* in situ (**d**). To get the fluorescent images, a 40× objective was used.

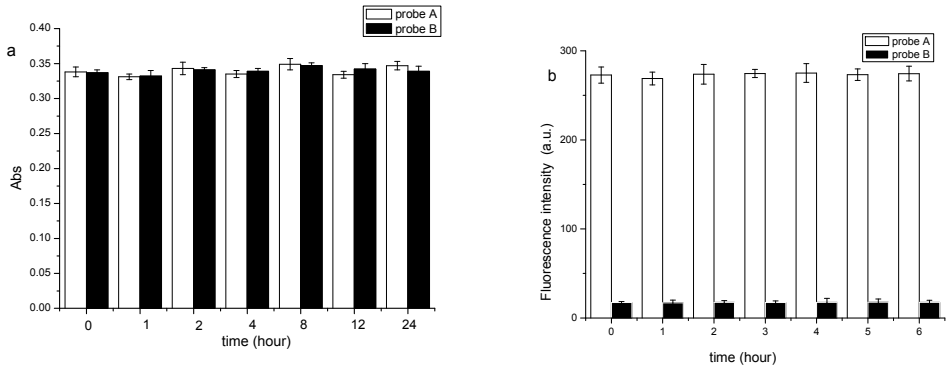

Figure S2 Photostability of probe A and probe B, S2a is the absorption of probe A and probe B, S2b is the fluorescence intensity of probe A and probe B

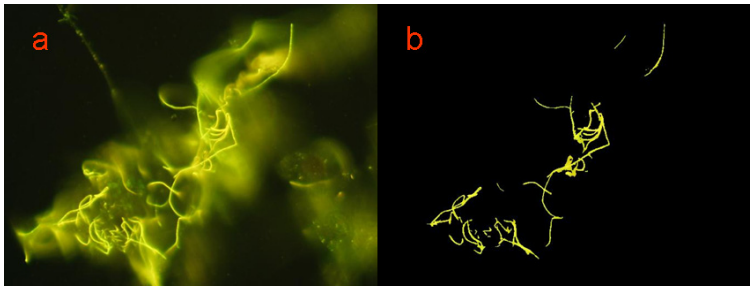

Figure S3. Example images analysis for quantification of the mean fluorescence intensity of *M. parvicella*. (**a**) The fluorescent inverted microscope (OLYMPUS-IX71) images of labeling *M. parvicella* in situ by the novel probe A; (**b**) The same visualization of *M. parvicella* as in a, in addition to the filamentous, other part is invisible, used to calculate the mean fluorescence intensity of *M. parvicella* (IOD/Area) inside the floc are clearly quantified.