Electronic Supplementary Information (ESI)

for

Real-time scattered light dark-field microscopic imaging of the dynamic degradation process of sodium dimethyldithiocarbamate

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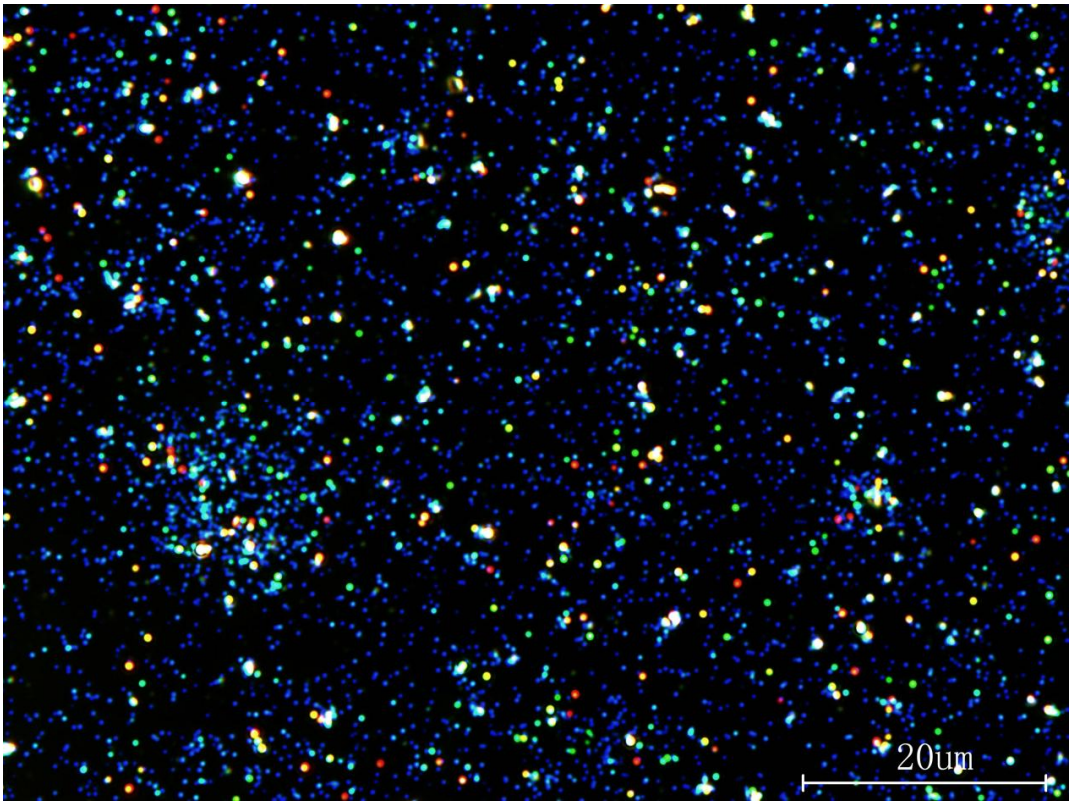

Fig. S1 Scattered light iDFMs of AgNPs synthesized with a 100-time dilution. The image scale bar corresponds to 20 μm.

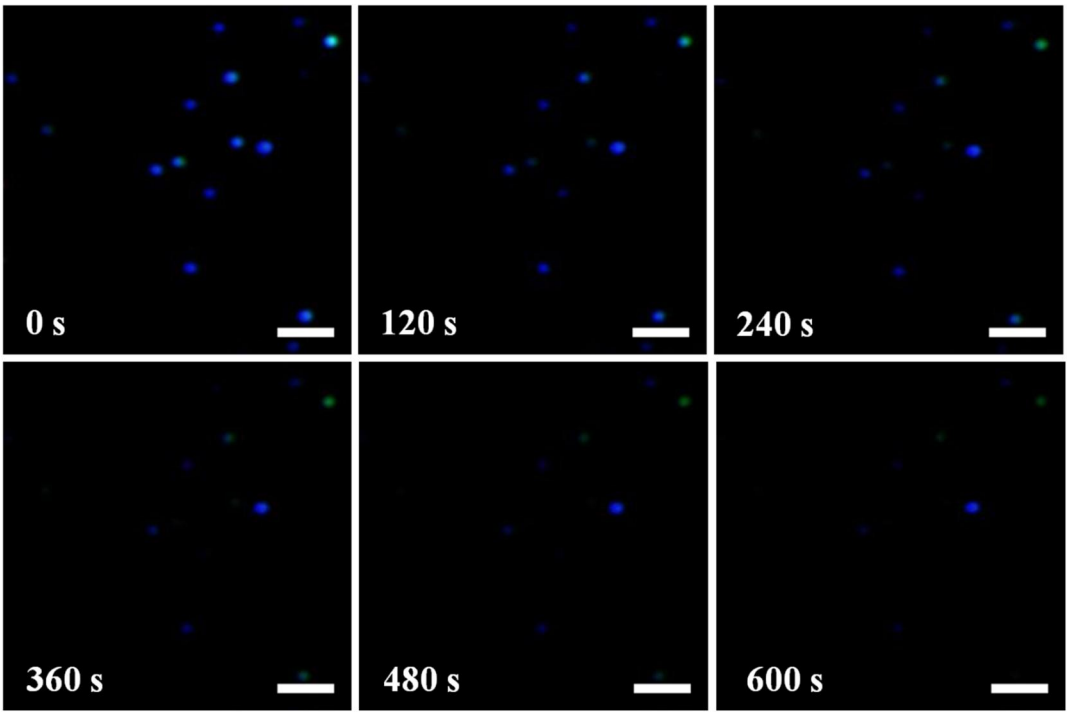

Fig. S2 Scattered light iDFMs of AgNPs after the 1 mM NaDDC alkaline solution (pH, 9) added into the cell. The scale bar is 2 μm for all images.

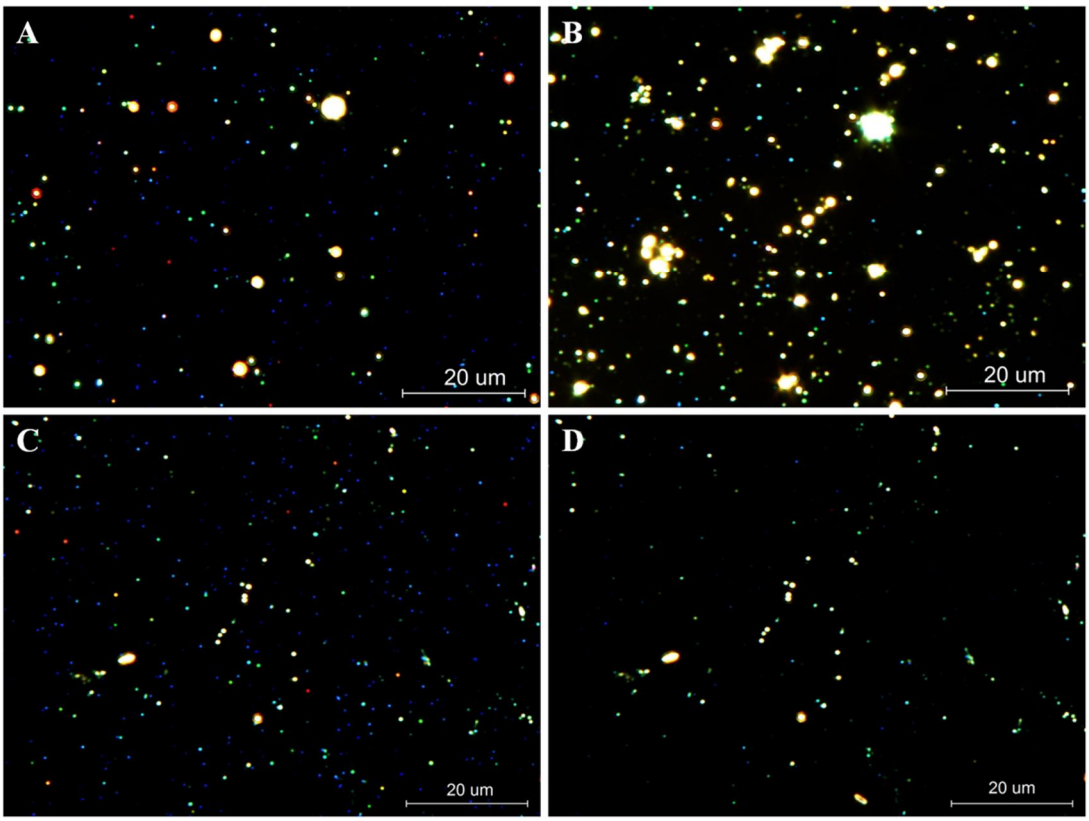

Fig. S3 Scattered light iDFMs of AgNPs of the same area before (A, C) and after (B, D) the reaction with 1 mM NaDDC in neutral (A, B) and alkaline (C, D) conditions.

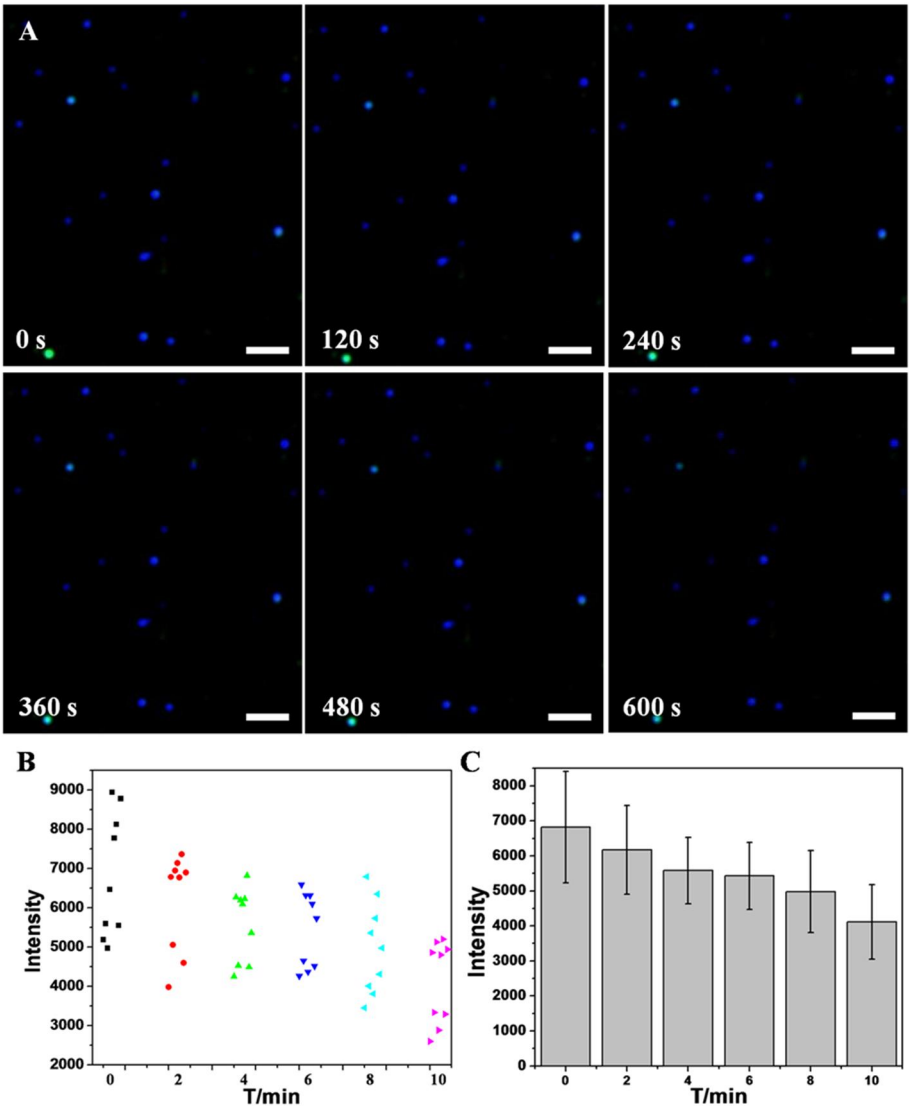

Fig. S4 Scattered light iDFMs of AgNPs after the 10 μM NaDDC aqueous solution added into the cell (A), the scattering light intensity statics of the chosen AgNPs (B) and the average intensity with error bar (C). The scale bar is 2 μm for all images.

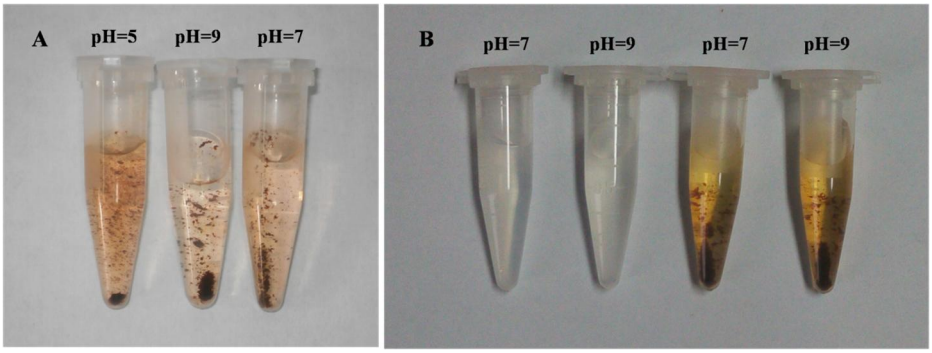

Fig. S5 Photographs of complex formed by Cu^{2+} and NaDDC at different pH (A) and photographs of complex formed by Zn^{2+} and NaDDC (left, white precipitate) , Cu^{2+} and NaDDC (right, brown precipitate) at different pH (B). The ratio of metal ions and NaDDC is 1:2. $c_{C_3H_6NNaS_2}$, 1×10^{-3} mol L^{-1}.

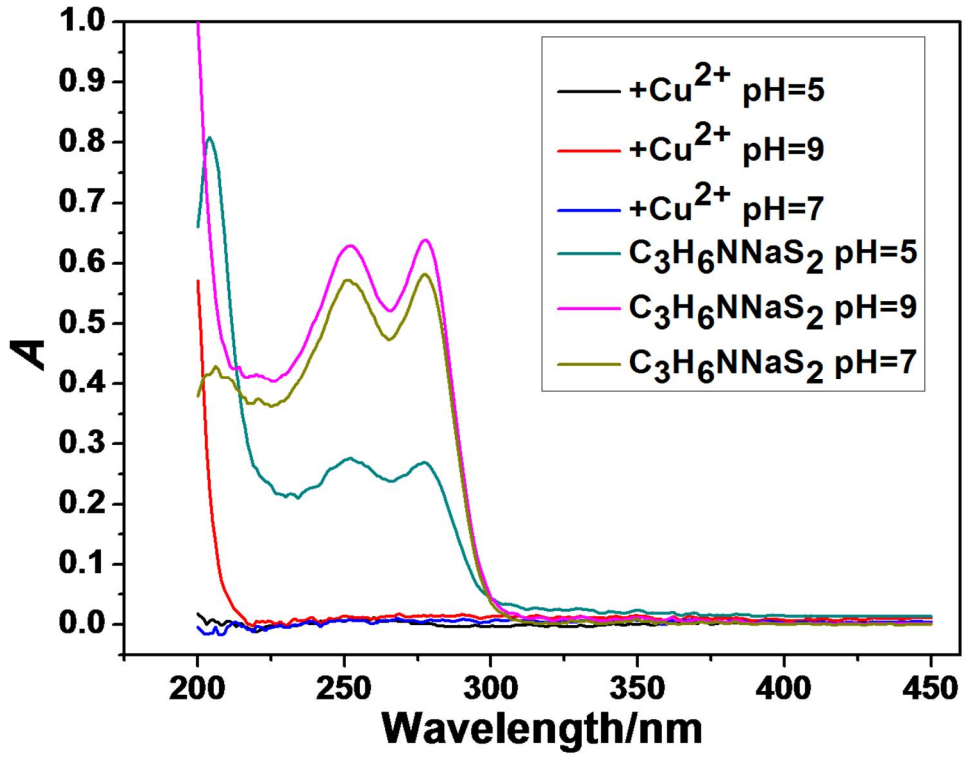

Fig. S6 The UV absorption spectrums of NaDDC before and after complexation in neutral, acid and alkaline condition respectively.

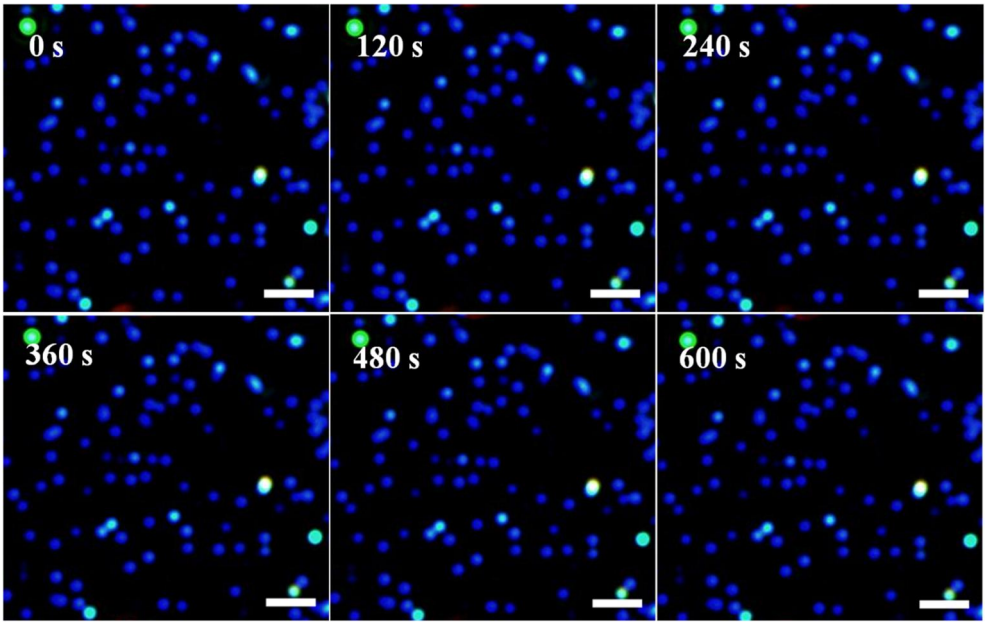

Fig. S7 The influence on the scattered light of AgNPs by the supernatant of mixed solution of Zn^{2+} and NaDDC. The result showed that it could not change the scattering light of AgNPs. The ratio of Zn^{2+} and NaDDC is 1:2, and the scale bar is 2 μm for all images.

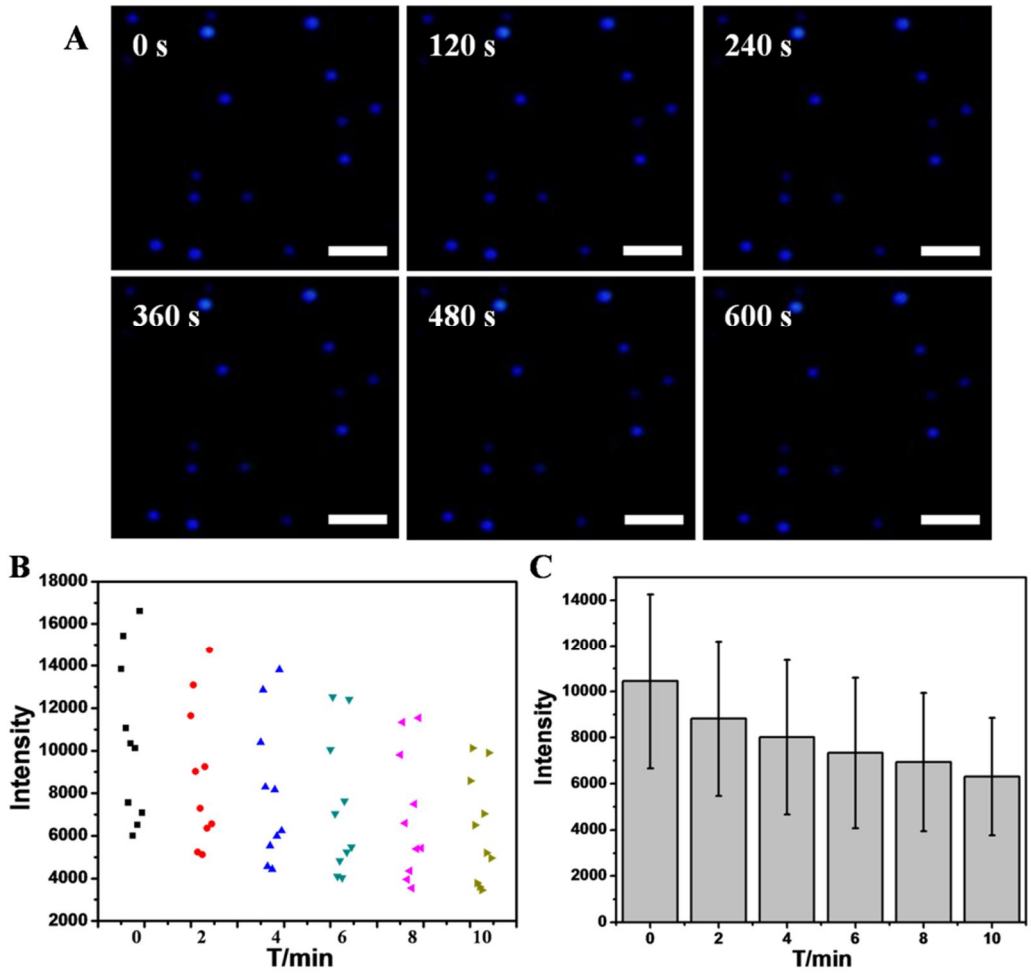

Fig. S8 Scattered light iDFMs of AgNPs after the supernatant (NaDDC:Cu^{2+} = 4:1) added into the cell (A), the scattering light intensity statics of the chosen AgNPs (B) and the average intensity with error bar (C). The scale bar is 2 μm for all images.

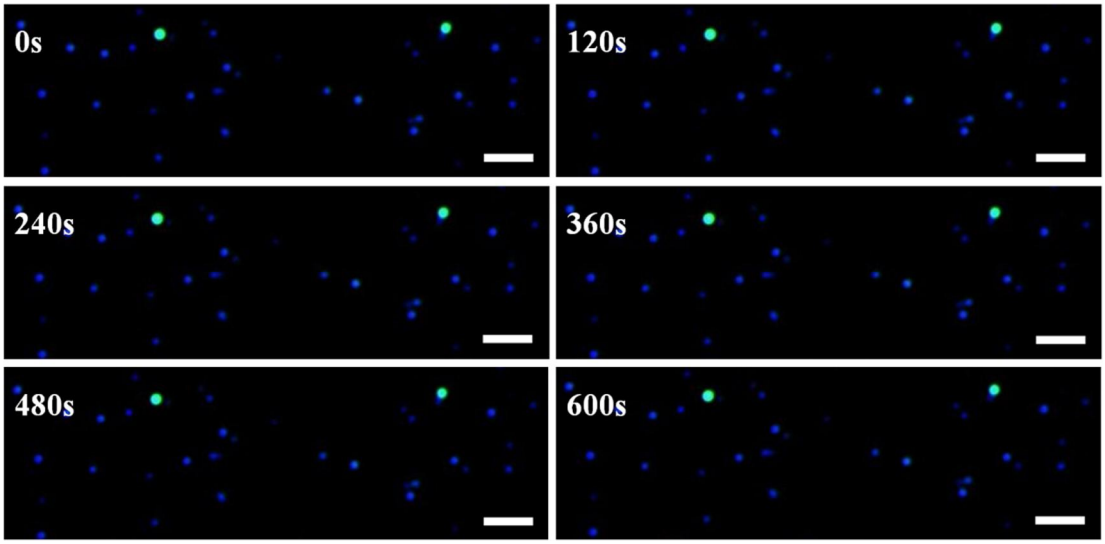

Fig. S9 The influence on the scattered light of AgNPs by the supernatant of mixed solution of Cu^{2+} ions and NaDDC. The ratio of Cu^{2+} ions and NaDDC is 1:1, and the scale bar is 2 μm for all images.

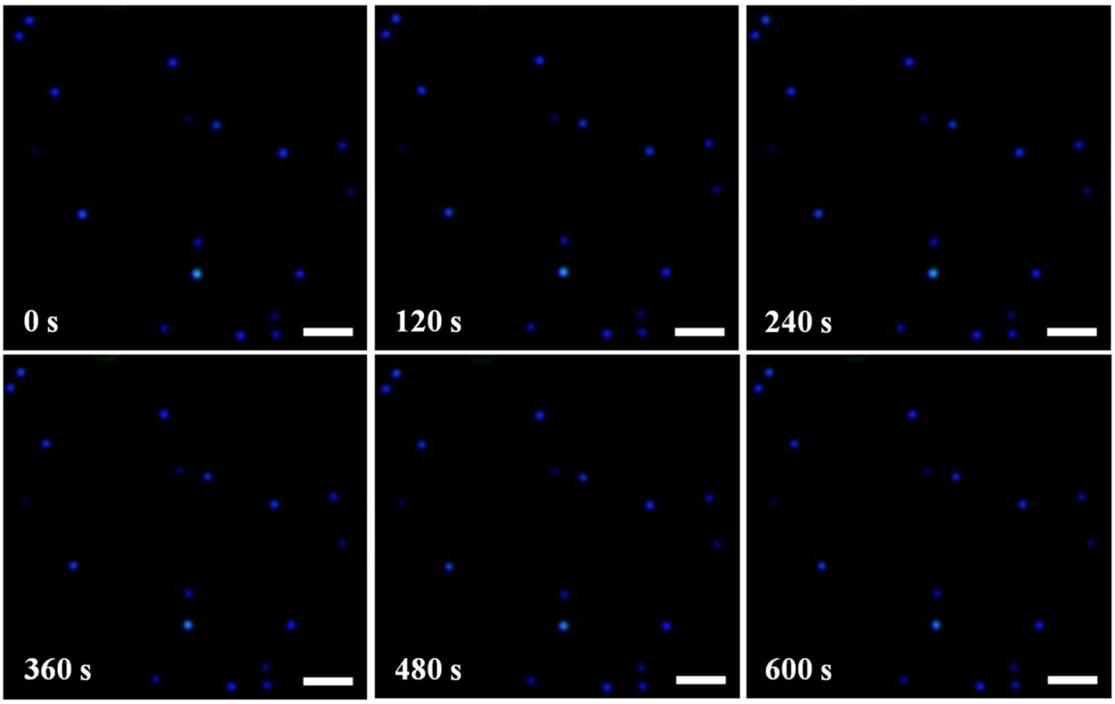

Fig. S10 The influence on the scattered light of AgNPs by the supernatant of mixed solution of Cu^{2+} and NaDDC in alkaline condition. The ratio of Cu^{2+} and NaDDC is 1:2, and the scale bar is 2 μm for all images.

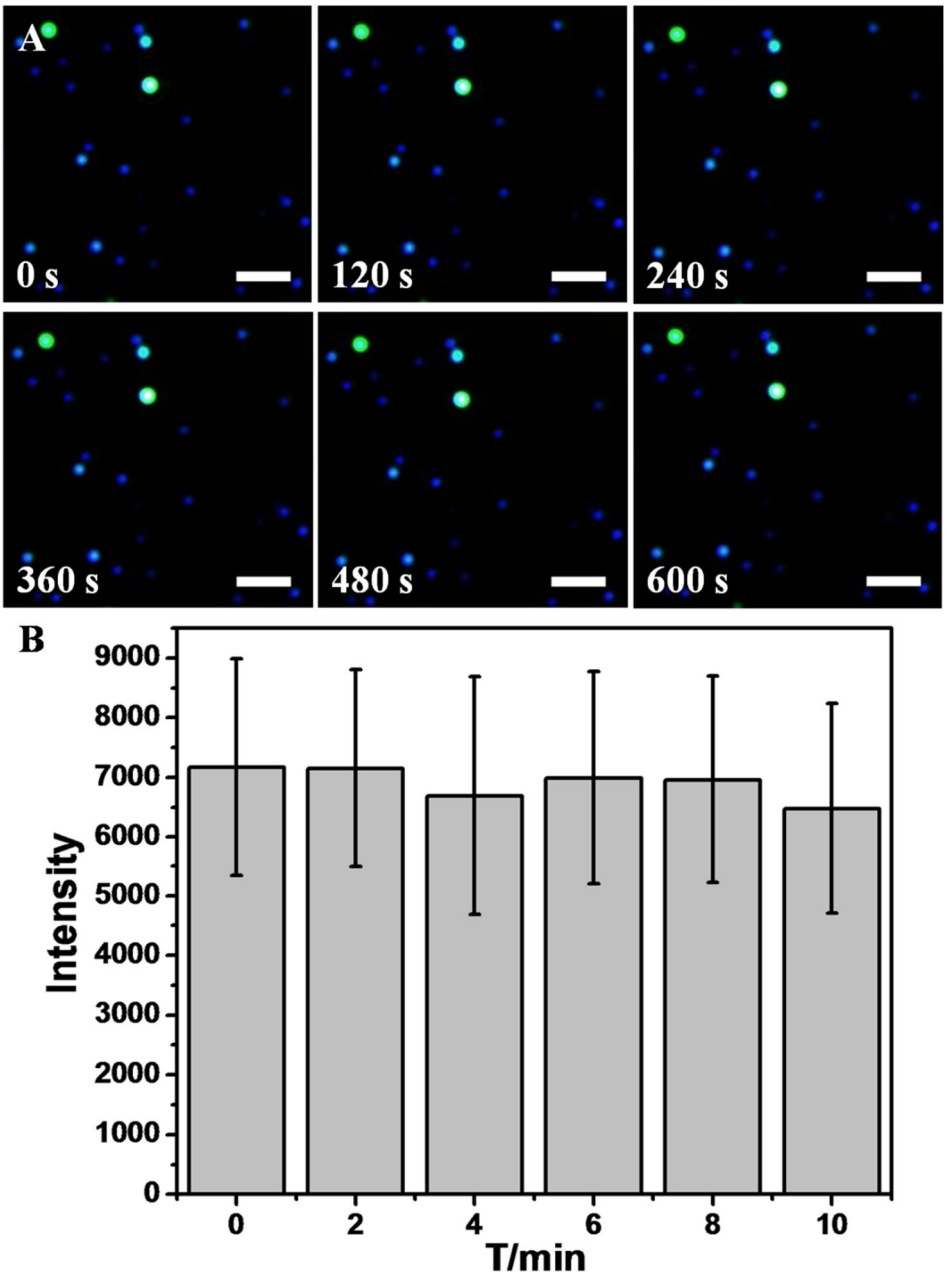

Fig. S11 Scattered light iDFMs of AgNPs after the complex of NaDDC and Cu^{2+} added into the cell (A). The scattering intensity of the chosen AgNPs remained the same before and after the reaction, accompanied with a small mechanical error (B). The scale bar corresponds to 2 μm for all images.