Figure S1. Photographs of lyophilized CSH-Ag NCs solution under visible light (1) and UV light (2).

Figure S2. The excitation-independent PL spectrum of CSH-Ag NCs.

The quantum yield (QY) of the CSH-Ag NCs

The quantum yield (QY) of the CSH-Ag NCs was measured at 1.1% using a 405 nm Xe laser and calibrated with Rhodamin 6G (Sigma 252433, Dye Content: 99%). According the emission peak area and absorbance of CSH-Ag NCs and Rhodamin 6G, the QY of the CSH-Ag NCs could be calculated from Equation 1.

\[
\phi_{\text{sample}} = \phi_{\text{ref}} \times \frac{F_{\text{sample}}}{F_{\text{ref}}} \times \frac{A_{\text{ref}}}{A_{\text{sample}}}
\]
**Figure S3.** High resolution transmission electron microscopy (HRTEM) images showed the mean size of Ag NCs at two scale.

**Figure S4.** The EDAX spectrum of the Ag cluster along with the quantification data.
Figure. S5 Viability of MC-3T3 cells after 24 h of incubation with different concentrations (0 µM - 600 µM) of CSH-Ag NCs as determined by a MTT assay. The error bars represent the fluctuations among four independent measurements.

Figure. S6 Viability of MC-3T3 cells with and without addition of CSH-Ag NCs (50 µM) after incubation with different time interval (12, 24, 36, 48 and 60 hours) as determined by a MTT assay. The error bars represent the fluctuations among four independent measurements.