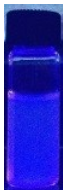
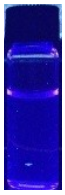
Supplementary Materials:

This file includes:

Table S1. **Comparison of different growth conditions for CdS quantum dot formation**

Figure S1. **Purification of biosynthetic QDs and comparison with control cell lysates**

Table S1. Comparison of different growth conditions for CdS quantum dot formation.

Ingredient	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
SMCD1 [OD_{600}]	0.5	0.5	0.5	0.5	–	–
$Cd(Ac)_2$ [mmol]	1	–	1	1	1	1
L-cysteine [mmol]	8	8	–	8	8	8
Growth media	M9 media	M9 media	M9 media	DI water	M9 media	DI water
Photoluminescence under UV light						

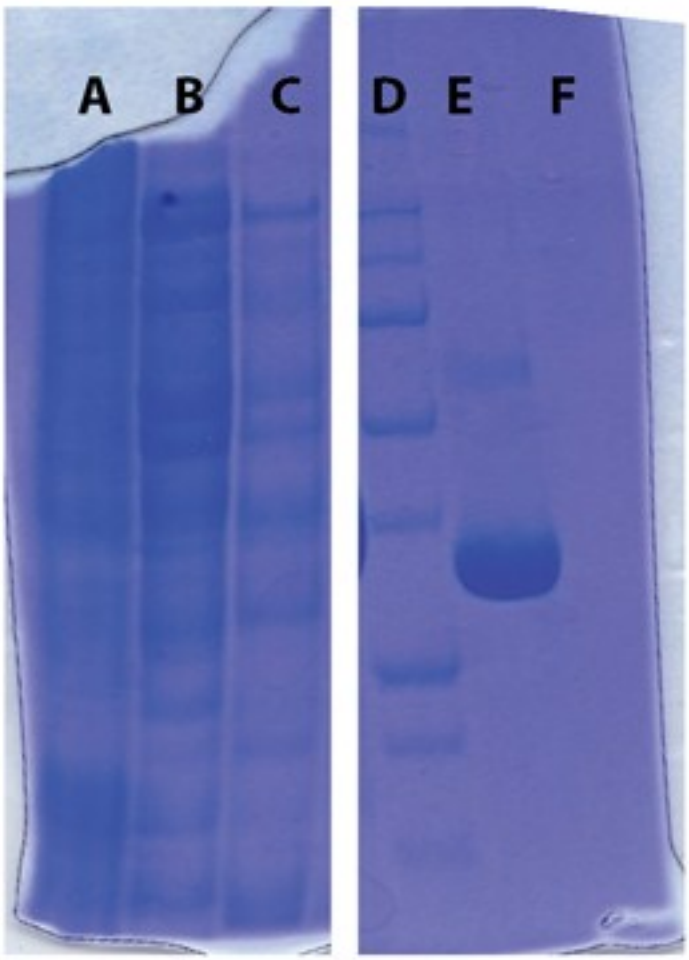


Figure S1: Purification of biosynthetic QDs and comparison with control cell lysates.

To demonstrate purity of the biosynthetic QDs, we collected an aliquot of QDs after purification from culture, and ran the sample on an SDS-PAGE gel. The QD sample had similar luminescent intensity to the images given in Figure 1, which ensures that the QD concentration was similar to that harvested from cell culture. A 50 mL sample of the purified QDs (lane F) resolved on the SDS-PAGE has no bands indicative of proteins or other macromolecules; therefore we conclude that no QDs are present at an appreciable concentration. For comparison, 50 mL samples of control lysates from *E. coli* (lane A), *S. maltophilia* (lane B) or recombinant protein overexpression in *E. coli* (lane E) are given, each of which contains numerous bands indicative of the specific proteins present; none of these patterns are observed in the purified QD sample (lane F). Lanes C and D show molecular weight ladders.