Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Highly Selective Biomolecule-Cellulose Complexes for Rapid Palladium-Polluted Water Remediation

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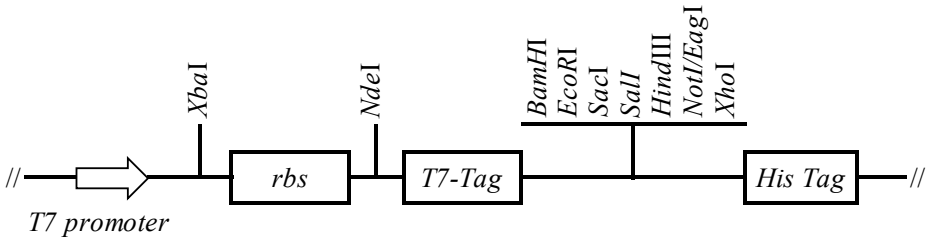
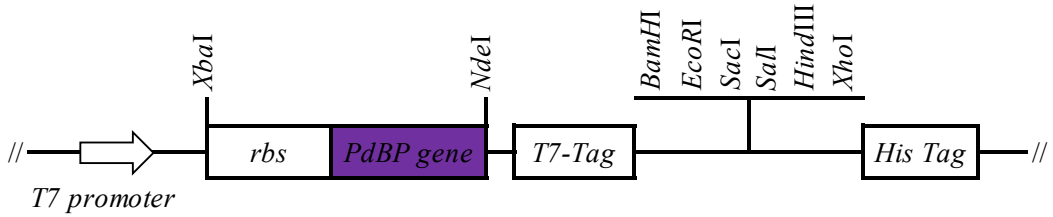
Table S1. List of primers

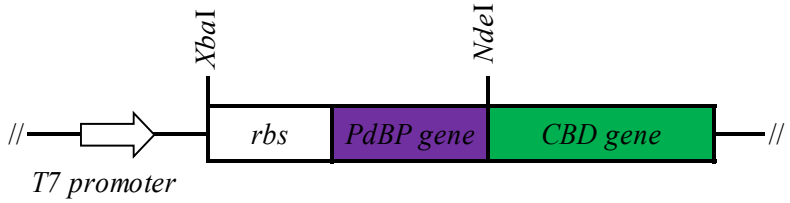
Primer	Sequence
F-XbaI-CBD	5'GCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAG3'
R-NdeI-CBD	5'GCGCCATATGGCTGCCGCCGC3'
F-NdeI-CBD	5'GCGCCATATGGCAAATACACCGGTATCAGG3'
R-XhoI-CBD	5'GCGCCTCGAGTTATGCACCCGGTTCAAGA3'



pET-24a-d(+)



pPdBP



pPdBP-CBD

Figure S1. Plasmid Construction

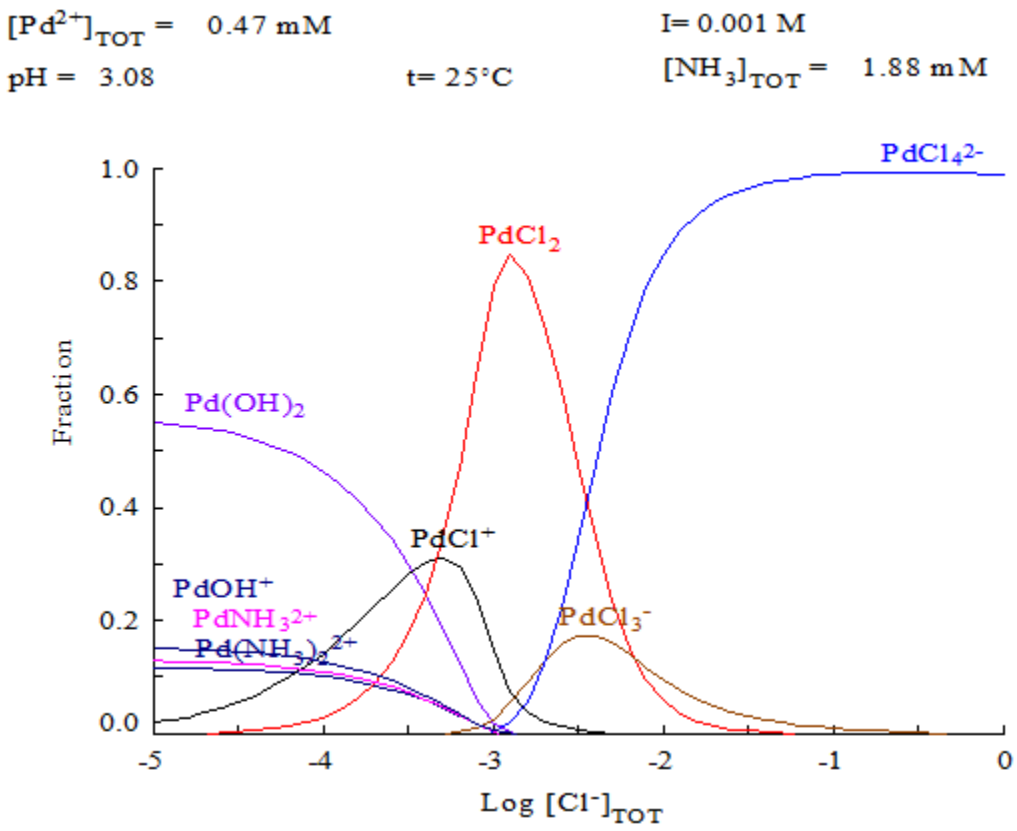


Figure S2. Speciation of Pd(II) as a function of chloride concentration (pH=3.08, 50 ppm Pd(II), 25 °C)

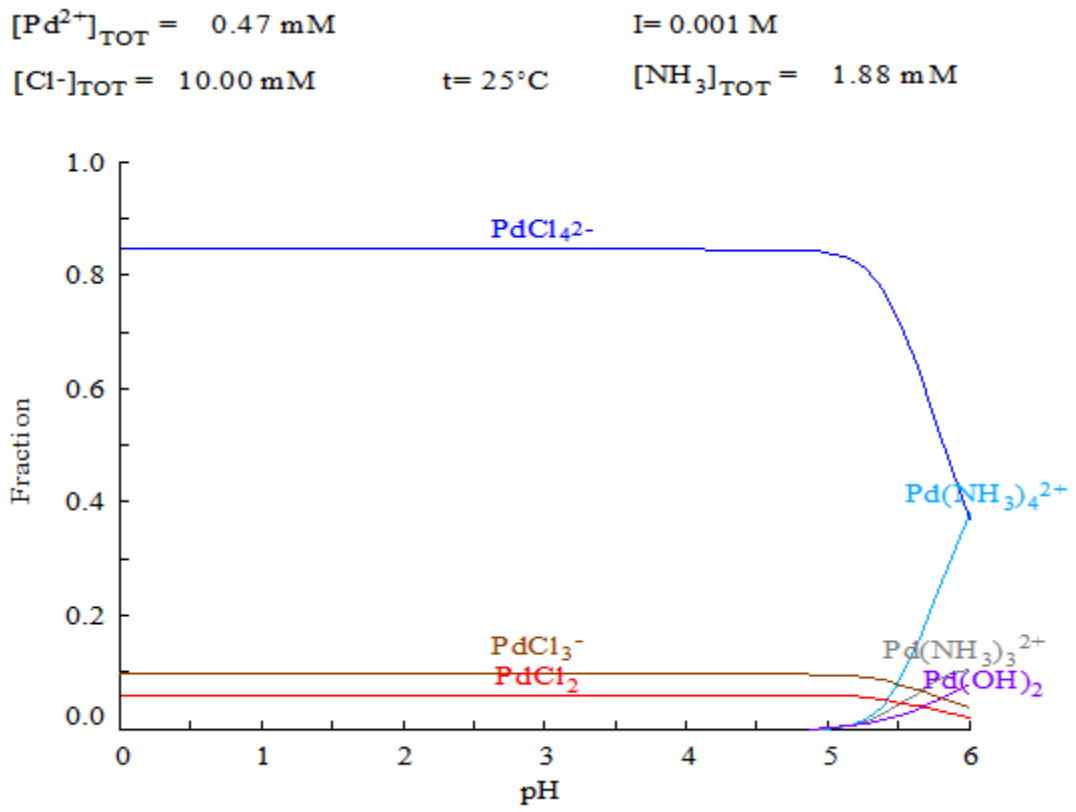


Figure S3. Speciation of Pd(II) as a function of pH (50 ppm Pd(II), 25 °C, 10.00 mM $[Cl^-]_{TOT}$)

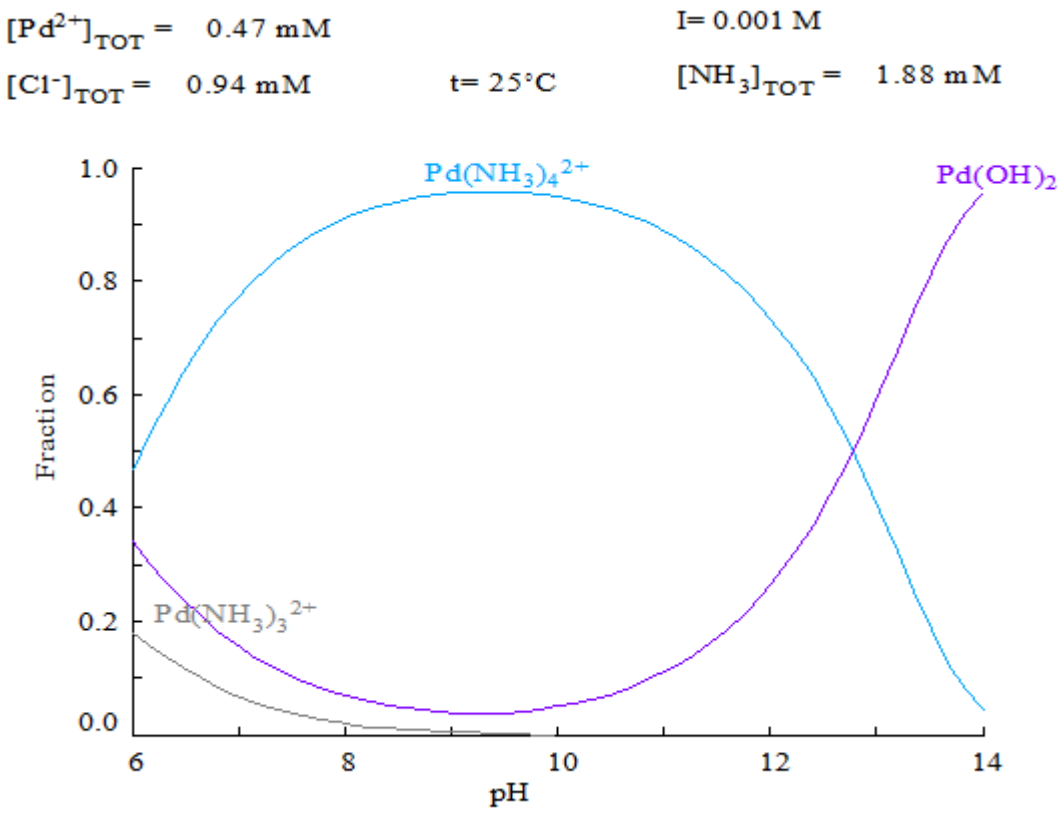


Figure S4. Speciation of Pd(II) as a function of pH (50 ppm Pd(II), 25 °C, 0.94 mM $[Cl\text{-}]_{TOT}$)

pH Test of Pd-CBD Binding to Microcrystalline Cellulose. To determine the working condition of fusion protein, pH binding test was taken. A sequence of test tubes containing 1000 μL fusion protein (1.73 mg/mL) was prepared. pH was adjusted with HCl and NaOH. To remove denatured protein, after the pH was adjusted, all samples were centrifuged at 15,000 rpm for 7 min. 20 μL supernatant of each tube was taken as "before binding" sample for SDS-PAGE. 450 μL of remaining supernatant was transferred into a fresh tube. To each fresh tube, 100 mg of the prewashed-avicel was added and mixed for 30 min at room temperature. The suspension was centrifuged at 15,000 rpm for 7 min. 20 μL supernatant of each tube was taken as "after binding" sample for SDS-PAGE.

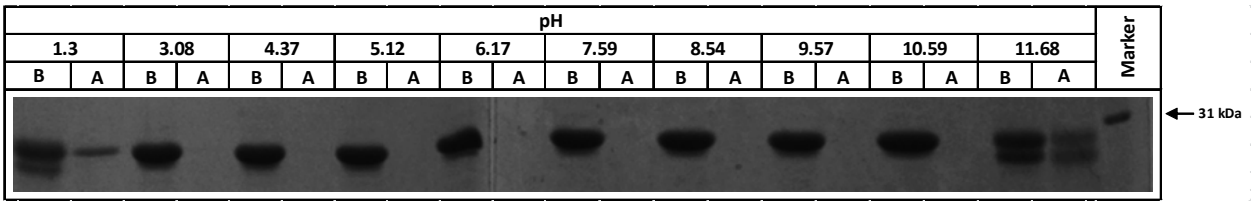


Figure S5. pH Test of Pd-CBD Binding to Microcrystalline Cellulose (A: before binding test, B: after binding test)