**Supporting materials**

 **Fig. S1** Phylogenetic tree based on the 16S rDNA gene sequences showing the phylogenetic relationships between strain PB-1 and related species.

**Table S1** Results of the orthogonal experiment L9(3)4 using 2000 mg/L phenol as the substrate

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NO. | Amount of bacteria  （\*108 CFU/mL） | Concentration  of BC (%) | Concentration  of SA (%) | Concentration  of CA (%) | Removal rate（%） |
| 1 | 4.96 | 1 | 3 | 1 | 14.73 |
| 2 | 4.96 | 2 | 4 | 2 | 17.36 |
| 3 | 4.96 | 3 | 5 | 3 | 19.90 |
| 4 | 9.86 | 1 | 4 | 3 | 13.18 |
| 5 | 9.86 | 2 | 5 | 1 | 15.20 |
| 6 | 9.86 | 3 | 3 | 2 | 19.29 |
| 7 | 14.06 | 1 | 5 | 2 | 19.38 |
| 8 | 14.06 | 2 | 3 | 3 | 25.93 |
| 9 | 14.06 | 3 | 4 | 1 | 19.39 |
| Ⅰ | 51.99 | 47.29 | 59.95 | 49.32 |  |
| Ⅱ | 47.67 | 58.49 | 49.93 | 56.03 |  |
| Ⅲ | 64.70 | 58.58 | 54.48 | 59.01 |  |
| K1 | 17.33 | 15.76 | 19.98 | 16.44 |  |
| K2 | 15.89 | 19.50 | 16.64 | 18.68 |  |
| K3 | 21.57 | 19.53 | 18.16 | 19.67 |  |
| R | 5.68 | 3.77 | 3.34 | 3.23 |  |