**Supplementary File 1A.** **IC50 of the caffeic acid and its derivate on TcdB-mediated cell-rounding.**

|  |  |  |
| --- | --- | --- |
| **Compound** | **Structure** | **IC50 (μg/mL)** |
| Caffeic acid |  | 527.5 |
| Ethyl caffeate  |  | 5.9 |
| CAPE |  | 3.0 |
| Echinacoside |  | 5.1 |
| Rosmarinic acid |  | 198.1 |
| Salvianolic acid |  | 3.4 |
| Verbascoside |  | 5.4 |

**Supplementary File 1B. Primers used in this study.**

|  |  |  |
| --- | --- | --- |
| **Primers** | **Sequences** | **Notes** |
| YG101 | ctgGGATCCATGAGTTTAGTTAATAG | *gtd* BamHI-F |
| YG102 | ctgGTCGACCTAAAGAGAACCTTCAA | *gtd* SalI-R |
| YG103 | CAGAAGCAGCAGCTGCATTCCACCTTTCTACCAACTCTTGTTC | *gtd*L265A -F |
| YG104 | GAACAAGAGTTGGTAGAAAGGTGGAATGCAGCTGCTGCTTCTG | *gtd*L265A -R |
| YG105 | GTATTCCTGGTAACATATCAACAGCTAAATACATACCACCAATTTCT | *gtd*D286A -F |
| YG106 | AGAAATTGGTGGTATGTATTTAGCTGTTGATATGTTACCAGGAATAC | *gtd*D286A -R |
| YG107 | CAGGGCCACTTAAGTTAATAGCAGTTTTAACATCTGGGAAGAA | *gtd*T465A-F |
| YG108 | TTCTTCCCAGATGTTAAAACTGCTATTAACTTAAGTGGCCCTG | *gtd*T465A-R |
| YG109 | TGCTTCAGGGCCACTTAAGTTAGCAGTAGTTTTAACATCTGGGAAG | *gtd*I466A-F |
| YG110 | CTTCCCAGATGTTAAAACTACTGCTAACTTAAGTGGCCCTGAAGCA | *gtd*I466A-R |
| YG111 | CTTGCATCGTCAAATGACCATGCGCTAGCCATTTCTTGTTCAGT | *gtd*L519 -F |
| YG112 | ACTGAACAAGAAATGGCTAGCGCATGGTCATTTGACGATGCAAG | *gtd*L519A -R |
| YG113 | CTCTTGCATCGTCAAATGACGCTAAGCTAGCCATTTCTTGTTC | *gtd*W520A -F |
| YG114 | GAACAAGAAATGGCTAGCTTAGCGTCATTTGACGATGCAAGAG | *gtd*W520A-R |

**Supplementary File 1C. Sequence of primers used for Reverse transcriptase PCR (RT-PCR) analysis.**

|  |  |  |
| --- | --- | --- |
| **Gene** | **Primer** | **Sequence (5’-3’)** |
| *tcdB* | Forward | TAGCAAGAAGTTCAGAGAGAGGAT |
| Reverse | CTTGTATTTCACCATCTCCAGGA |
| *16S* | Forward | GCGTAGGCGGTCTTTCAAG |
| Reverse | TCGCAACTGGTGTTCCTCC |