Table S1. Precision test of COS by HPLC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Chitobiose | Chitotriose | Chitotetraose | Chitopentaose | Chitohexaose |
| 1 | 1953803 | 12269881 | 12540317 | 7140803 | 1763421 |
| 2 | 2011153 | 12355292 | 12546748 | 7169688 | 1763647 |
| 3 | 1974267 | 12259044 | 12512356 | 7174966 | l764035 |
| 4 | 2003048 | 12326894 | 12594204 | 7139806 | 1759823 |
| 5 | 1966482 | 12279467 | 12558540 | 7150455 | 1760324 |
| 6 | 2000895 | 12287664 | 12537133 | 7151403 | 1762865 |
| 7 | 1942995 | 12303068 | 12555033 | 7176342 | 1757310 |
| RSD (%) | 1.0 | 0.3 | 0.2 | 0.2 | 0.1 |

**Table S2.** Pairs of primers used in the real-time qPCR analysis of cytokine gene expression in splenocytes

|  |  |  |
| --- | --- | --- |
|  | Forward | Reverse |
| IFN-γ | 5’-TGGCATAGATGTGGAAGAAAAGAG-3’ | 5’-TGCAGGATTTTCATGTCACCA-3’ |
| IL-4 | 5’-ACAGGAGAAGGGACGCCAT-3’ | 5’-GAAGCCCTACAGACGAGCTCA-3’ |
| IL-5 | 5’-CAGCACTCTGTCTTCTAACAAGAA-3’ | 5’-TCTGTGAAGGTTTTCTCCTCC-3’ |
| IL-13 | 5’-ACAGGAGAAGGGACGCCAT-3’ | 5’-GAAGCCCTACAGACGAGCTCA-3’ |
| β-actin | 5’-CGCCACCAGTTCGCCATGGA-3’ | 5’-TACAGCCCGGGGAGCATCGT-3’ |

Table S3. The recovery rate of COS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Polymer degrees | Peak area of sample | Peak area of standard | Addition of standard | Recovery rate (%) |
| Chitobiose | 19538035 | 5618366 | 7405581 | 97.8 |
| Chitotriose | 12269881 | 1774508 | 13609013 | 96.9 |
| Chitotetraose | 125403178 | 8856095 | 21011276 | 98.2 |
| Chitopentaose | 7140803 | 10096350 | 16771750 | 97.3 |
| Chitohexaose | 1763421 | 6698981 | 8233917 | 97.3 |