**Identification and quantification of surfactin, a non–volatile lipopeptide in Moutai liquor**

**Supplementary Information**

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**Summary**

The supplementary information includes two figures and three tables.

Figure.S1

**Figure S1.** Determination of surfactin in Moutai liquor with different pretreatments by UPLC/MS. A: Total ion chromatogram (TIC) of surfactin standard (0.5 μg L–1), B: TIC of liquor sample without pretreatment, C and D: TIC of liquor sample pre–treated with SPE procedure which was washed with 10 mL10% and 70% methanol respectively.

Figure.S2

**Figure S2.** The elution efficiency of different contents of methanol.

**Table S1** The information of primers.

|  |  |  |
| --- | --- | --- |
| **Primer** | **Sequences (5’-3’)** | **Primer size** |
| 27F | AGAGTTTGATCCTGGCTCA | 19 bp |
| 1492R | GGTTACCTTGTTACGACTT | 19 bp |

**Table S2** Concentrations of surfactin (μg L–1) in Moutai liquor.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample no.** | **Brand** | **Alcohol content (vol%)** | **Time (years)** | **Storage time (years)** | **Total surfactina**  **(μg L–1)** | **RSDb (%)** |
| 1 | Kweichow Moutai | 53 | 2014 | 5 | 0.10 | 0.97 |
| 2 | 53 | 2015 | 4 | 0.03 | 2.57 |
| 3 | 53 | 2015 | 4 | 0.03 | 3.12 |
| 4 | 53 | 2015 | 4 | 0.04 | 3.27 |
| 5 | 53 | 2015 | 4 | 0.09 | 1.76 |
| 6 | 53 | 2015 | 4 | 0.07 | 1.98 |
| 7 | 53 | 2015 | 4 | 0.05 | 4.20 |
| 8 | 53 | 2015 | 4 | 0.02 | 5.18 |
| 9 | 53 | 2016 | 3 | 0.06 | 4.60 |
| 10 | 53 | 2016 | 3 | 0.06 | 4.15 |
| 11 | 53 | 2016 | 3 | 0.31 | 3.44 |
| 12 | 53 | 2016 | 3 | 0.07 | 2.88 |
| 13 | 53 | 2016 | 3 | 0.13 | 5.06 |
| 14 | 53 | 2016 | 3 | 0.08 | 2.78 |
| 15 | 53 | 2016 | 3 | 0.16 | 2.08 |
| 16 | 53 | 2016 | 3 | 0.07 | 1.89 |
| 17 | 53 | 2016 | 3 | 0.10 | 3.32 |
| 18 | 53 | 2017 | 2 | 0.18 | 3.66 |
| 19 | 53 | 2017 | 2 | 0.21 | 4.68 |
| 20 | 53 | 2017 | 2 | 0.07 | 5.49 |
| 21 | 53 | 2017 | 2 | 0.13 | 4.02 |
| 22 | 53 | 2017 | 2 | 0.36 | 2.24 |
| 23 | 53 | 2017 | 2 | 0.17 | 2.90 |
| 24 | 53 | 2017 | 2 | 0.14 | 2.66 |
| 25 | 53 | 2017 | 2 | 0.10 | 3.10 |
| 26 | 53 | 2017 | 2 | 0.12 | 3.52 |
| 27 | 53 | 2017 | 2 | 0.08 | 5.98 |

aResults were given as averages of three replicates

bRelative standard deviation (RSD) = standard deviation/mean, n = 3.

**Table S3** GenBank accession numbers for 16s rRNA sequences.

|  |  |  |
| --- | --- | --- |
| **Label** | **Strain** | **GenBank accession number** |
| MT1 | *Bacillus subtilis* | MN809374 |
| MT2 | *Bacillus subtilis* | MN809375 |
| MT3 | *Bacillus subtilis* | MN809376 |
| MT4 | *Bacillus subtilis* | MN809377 |
| MT5 | *Bacillus amyloliquefaciens* | MN809378 |