

## Supplementary Information 1

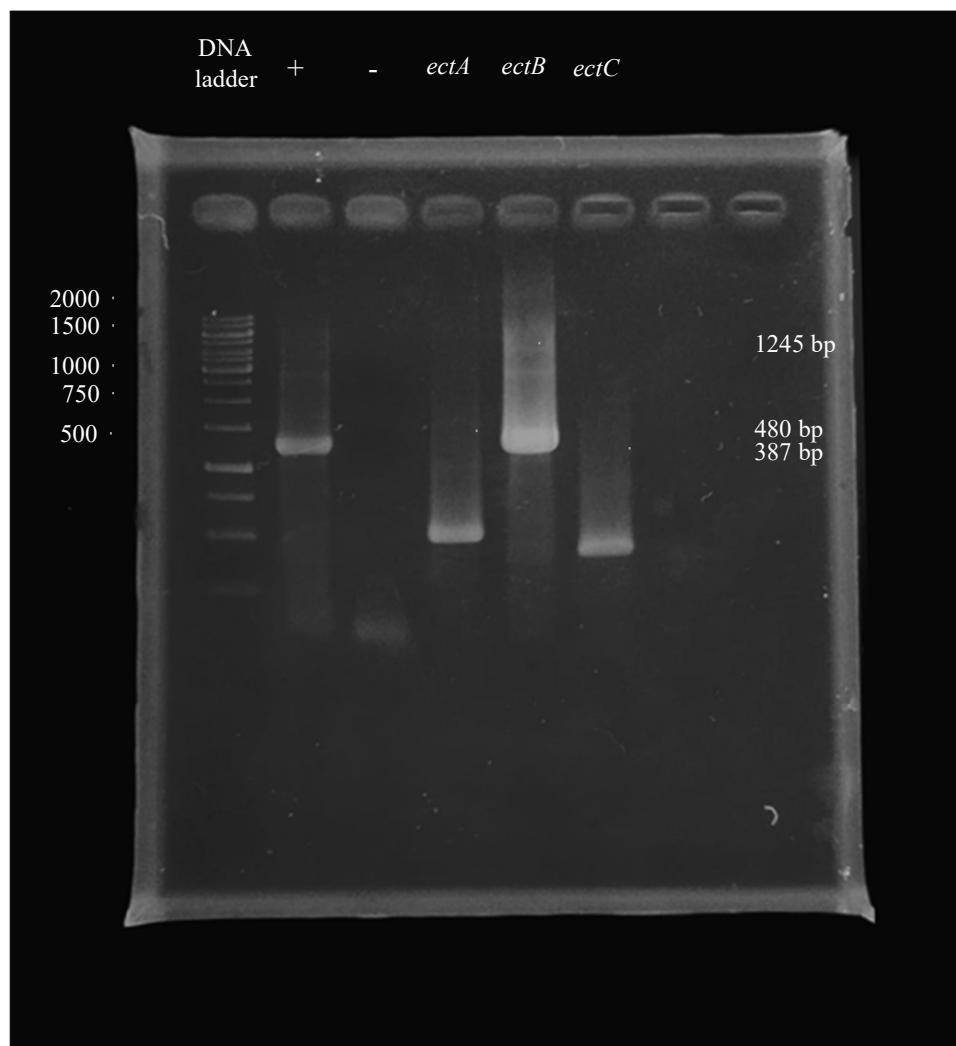
**Supplementary Table S1.** Validation of linearity and sensitivity of ectoine analysis using LC-MS

| Parameter                                          | Result                 |
|----------------------------------------------------|------------------------|
| Retention time (min, n=3)                          | 1.21                   |
| Linear regression                                  | $y = 128281x - 4623.6$ |
| Correlation coefficient ( $R^2$ )                  | 0.9999                 |
| Range of linear concentration ( $\mu\text{g/mL}$ ) | 0.48-31.25             |
| Limit of detection( $\mu\text{g/mL}$ )             | 0.0048                 |
| Limit of quantification ( $\mu\text{g/mL}$ )       | 0.0145                 |

**Supplementary Table S2.** The genome of various *Virgibacillus* species

| Species                    | Accession Number |
|----------------------------|------------------|
| V.pantothenticus_DSM26     | GCF_018075365    |
| V.necropolis_LMG19488      | GCF_002224365    |
| V.phasianinus_LM2416       | GCF_002216775    |
| V.halodenitrificans_PDBF2  | GCF_001878675    |
| V.dokdonensis_21D          | GCF_002849835    |
| V.halodenitrificans_Bac324 | GCF_003667805    |
| V.halodenitrificans_ASH15  | GCF_021391295    |
| V.sp_6R                    | GCF_001895305    |
| V.sp_Bac332                | GCF_003667785    |
| V.sp_Bac330                | GCF_003667845    |
| V.sp_NKC1916               | GCF_021560035    |
| V.sp_SK37                  | GCF_000725285    |

|                 |               |
|-----------------|---------------|
| V.sp_MSP41      | GCF_010092505 |
| V.salarius_720a | GCF_018139605 |
| V.sp_AGTR       | GCF_016919725 |



**Supplementary Figure S1.** Gel electrophoresis of the *ectA*, *ectB*, *ectC* gene from *V. salarius*. Lane 1 and 2 consist of positive and negative control, meanwhile lane 3-5 shows *ectA* (480 bp), *ectB* (1245 bp), and *ectC* (387 bp) genes.

