The role of the surface smear microbiome in the development of defective smear on surface-ripened red-smear cheese

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**Supplementary**

**Table S1.** Related to Figure 3. Relative abundances of 16S rDNA amplicons determined by next-generation sequencing of cheese smear samples.

| Phylum      | Genus                        | Unpacked 14413 reads | Vacuum film-prepacked non-defective 7708 reads | Vacuum film-prepacked defective 7910 reads |
|-------------|------------------------------|----------------------|-----------------------------------------------|--------------------------------------------|
| **Firmicutes** |                              |                      |                                               |                                            |
|             | other taxa (n = 105)<sup>a</sup> | 7.19                 | 9.80                                          | 9.27                                       |
|             | *Staphylococcus*             | 16.83                | 14.22                                         | 4.20                                       |
|             | *Alkalibacterium*            | 3.50                 | 6.23                                          | 1.64                                       |
|             | *Facklamia*                  | 2.14                 | 2.71                                          | 1.98                                       |
|             | *Lactobacillus*              | 1.42                 | 0.19                                          | 0.09                                       |
|             | *Sporosalisbacterium*        | 0.07                 | 0.65                                          | 0.21                                       |
| **Actinobacteria** |                              |                      |                                               |                                            |
|             | *Corynebacterium*            | 17.92                | 21.95                                         | 24.73                                      |
|             | *Brevibacterium*             | 4.74                 | 4.46                                          | 1.18                                       |
|             | *Brachybacterium*            | 1.33                 | 1.50                                          | 0.63                                       |
|             | *Agroccus*                   | 0.95                 | 0.40                                          | 0.52                                       |
|             | *Pseudoclavibacter*          | 1.67                 | 2.11                                          | 0.68                                       |
|             | *Leucobacter*                | 12.13                | 5.76                                          | 3.55                                       |
|             | *Humibacter*                 | 3.17                 | 2.74                                          | 0.73                                       |
|             | *Trueperella*                | 0.42                 | 0.80                                          | 0.33                                       |
|             | *Bogoriella*                 | 0.44                 | 0.54                                          | 0.25                                       |
| **Proteobacteria** |                              |                      |                                               |                                            |
|             | *Halomonas*                  | 5.63                 | 10.56                                         | 16.92                                      |
|             | *Psychrobacter*              | 0.86                 | 2.26                                          | 8.53                                       |
|             | *Herbaspirillum*             | 3.58                 | 5.70                                          | 7.40                                       |
|             | *Sphingomonas*               | 1.28                 | 1.80                                          | 2.25                                       |
|             | *Fulvimonas*                 | 0.03                 | 1.35                                          | 0.10                                       |
| **Bacteroidetes** |                              |                      |                                               |                                            |
|             | *Sphingobacterium*           | 1.37                 | 1.06                                          | 5.27                                       |
|             | *Hydrotalea*                 | 0.00                 | 0.00                                          | 1.73                                       |
|             | *Marinifilum*                | 0.00                 | 0.09                                          | 0.86                                       |
| **Tenericutes** |                              |                      |                                               |                                            |
|             | *Asterolesplasma*            | 0.00                 | 0.00                                          | 0.75                                       |
| **Crenarchaeota** |                              |                      |                                               |                                            |
|             | *Thermocladium*              | 9.37                 | 1.60                                          | 1.74                                       |
|             | *Sulfurisphaera*             | 0.17                 | 0.09                                          | 0.63                                       |
| **Euryarchaeota** |                              |                      |                                               |                                            |
|             | *Methanohalobium*            | 3.75                 | 1.41                                          | 3.26                                       |
|             | *Methanomicrium*             | 0.03                 | 0.00                                          | 0.56                                       |

<sup>a</sup>Summary of the relative abundances of taxa revealing less than 0.5% of total reads in each of the smear samples analyzed.
Table S2. Related to Figure 4. Relative abundances of 16S rRNA reads determined by next-generation sequencing of cheese smear samples.

| Phylum           | Genus           | Vacuum film-prepacked non-defective | Vacuum film-prepacked defective |
|------------------|-----------------|-------------------------------------|---------------------------------|
|                  | Unpacked 2774 reads | 2518 reads                        | 2285 reads                      |
| **Firmicutes**   |                 |                                     |                                 |
|                  | other taxa (n = 28) |                                     |                                 |
| **Actinobacteria** |                 |                                     |                                 |
|                  | Corynebacterium | 22.06                               | 26.25                           |
|                  | Brevibacterium | 29.45                               | 14.18                           |
|                  | Brachybacterium | 13.70                               | 5.36                            |
|                  | Agrococcus      | 7.43                                | 3.22                            |
|                  | Clavibacter     | 2.92                                | 1.15                            |
|                  | Plantibacter    | 2.52                                | 2.86                            |
|                  | Pseudoclavibacter | 2.34                               | 2.58                            |
|                  | Nesterenkonia   | 2.09                                | 2.50                            |
|                  | Klugiella       | 1.33                                | 3.02                            |
|                  | Cartobacterium  | 1.80                                | 0.56                            |
|                  | Microbacterium  | 1.01                                | 1.07                            |
|                  | Georgenia       | 0.87                                | 0.44                            |
|                  | Millisia        | 0.94                                | 1.31                            |
|                  | Mycetocola      | 0.87                                | 0.91                            |
|                  | Leucobacter     | 0.61                                | 0.24                            |
|                  | Serinibacter    | 0.47                                | 1.55                            |
|                  | Actinobaculum   | 0.43                                | 0.75                            |
|                  | Frigoribacterium | 0.25                               | 0.00                            |
|                  | Arcanobacterium | 0.00                                | 0.83                            |
|                  | Quadrisphaera   | 0.25                                | 0.71                            |
|                  | Subtercola      | 0.50                                | 0.24                            |
|                  | Zimmermannella  | 0.36                                | 0.32                            |
|                  | Salinibacterium | 0.18                                | 0.28                            |
|                  | Zhihengliuella  | 0.00                                | 0.52                            |
| **Proteobacteria** |                 |                                     |                                 |
|                  | Halomonas       | 1.77                                | 0.32                            |
|                  | Psychrobacter   | 0.29                                | 0.20                            |

*Summary of the relative abundances of taxa revealing less than 0.5% of total reads in each of the smear samples analyzed.*
