**Table S4** The relationship between abundant bacterial taxa in SDM and CM groups and preputial separation day

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **Taxonomy** | **Spearman’srho** | ***p*-valuea** |
| SDM | g\_Prevotellaceae\_NK3B31\_group | 0.587 | 0.045\* |
| g\_Ruminococcaceae\_UCG-010 | 0.518 | 0.085 |
| g\_Eubacterium\_coprostanoligenes\_group | 0.465 | 0.128 |
| g\_Shuttleworthia | 0.138 | 0.668 |
| CM | g\_Butyricicoccus | -0.562 | 0.057 |
| g\_Lachnospiraceae\_A2 | -0.631 | 0.028\* |
| g\_Ruminococcaceae\_UCG-013 | -0.569 | 0.054 |
| g\_Ruminiclostridium\_9 | -0.740 | 0.006\*\* |
| g\_Clostridium\_sensu\_stricto\_1 | -0.825 | 0.001\*\* |
| g\_Lactobacillus | -0.546 | 0.066 |
| g\_Clostridiales\_vadinBB60\_group\_Uncultured | -0.641 | 0.025\* |

a: *p* value is determined with Spearman's correlation analysis; \**p*<0.05; \*\**p*<0.01. Abbreviations: CM, control male; SDM, sleep deprivation male.