

Description of Additional Supplementary Files

File name: Supplementary Data 1

Description: Relative abundances (in %) of staphylococci in 93 samples.

File name: Supplementary Data 2

Description: Accession numbers and sequence types of 69 *S. epidermidis* genomes sequenced in this study.

File name: Supplementary Data 3

Description: Relative abundances (in %) of *C. acnes* SLST types in 113 samples.

File name: Supplementary Data 4

Description: Differentially expressed genes of *S. epidermidis* HAF242 (SE): growth of SE in coculture with *C. acnes* 30.2.L1 (D-class) versus growth of SE in co-culture with *C. acnes* DSM1897 (A-class).

File name: Supplementary Data 5

Description: Differentially expressed genes of *S. epidermidis* HAF242 (SE): growth of SE in coculture with *C. acnes* DSM1897 (A-class) versus growth of SE in monoculture.

File name: Supplementary Data 6

Description: Differentially expressed genes of *S. epidermidis* HAF242 (SE): growth of SE in coculture with *C. acnes* 30.2.L1 (D-class) versus growth of SE in monoculture.

File name: Supplementary Data 7

Description: Origin of bacterial isolates (n=572) obtained in this study.

File name: Supplementary Data 8

Description: Database accession numbers of 286 *S. epidermidis* genomes taken for phylogenetic analyses of this study.

File name: Supplementary Data 9

Description: Accession numbers and SLST type assignments of 75 *C. acnes* genomes included in the pan-genome analysis of this study.

File name: Supplementary Data 10

Description: raw data for Fig. 1c, 2c, 4c, 5c, S4.