

Appendix S1.

Single locus sequence typing (SLST) PCR product sequences of the 6 unrecognized strains, their similarity to *C. acnes* strains, including E-value, percentage identity, Genbank number, and description of the closest strains' genome.

Strain 15

F sequence:

TCCGACGCCAGCTCATTNCGNCTGNTTCGGGTCCGACGCCGAGCNGGCACANGGNCCTTGTNTATCTGNTNNNGNAGNAGTACN-NATNGTTNTNACACANNCGANTNCANTTNNCGNGAGCCNGCCATGCNCNCCGNTANNACNNCNGAGGTCATCGCNTNGC-CNNATANNNTTANNCGNGGAATCCAGCATCGGGGCATCGTGAGTGAAGTGCCGGCTGTTCTGGGATAGATTGTGGTGGCCTT-CGTGATGACAGGGTGGAAACATATATCGCGGCATTTCCTCCTCTTAGGTTGACTAGAAAGGAGATGTGACACCCATCGTCTT-GGGTCTGACAAGGTAGACGCTATAGCTTAAGAAATGTACATAAGTAAGATGTTTCTCGCAATGAAAGACGATATGTCACGAGTTC-CTGGTGCTGTTTCCCGACATGGAAGTGTAGTTTGAATCAATTTTGAAGTGGAGACGCCAAGTTGACCCCTGGTGTGCAACGAT-GCTTCTTGCTGCAGTTGCGAGCAATTGTTCCCGATGAAAGGAACCCACAAATGAAGGTTAAGTTCTTAGCAGCGCCGCTGA

E-value 0.0, per. Identity 99.75% descriptor: CP025934.1 *Cutibacterium acnes* DSM 1897 chromosome, complete genome

R sequence:

TNTTGTGGGTTTCCTTTNTNCGGNACAAATTGCTCGCANNTTGCAGGCAAGNAGCATCGTTGCACACCAGGGGGTCAACTTTGG-CGTCCTCAGTTCAAAATTGATTCAAACCTAACAGTTCATGTCCGGAAACAGCACCAGGAAGCTCGTGACATATCGTCTTTCATT-GCGAGAAACATCTTACTTATGTACATTTCTAAGCTATAGCGTCTACCCTTGTGACAGCCAGGACGATGGGTGTCACATCTCCTTTC-TAGTCAACCTAAGAGAGGAGGAAATGCCGCGATATATGTTCCACCCTGTCATCACGAAGGCCACCACAATCTATCCCAGAACAGC-CGGCACTTCACTCACGATGCCCCGATGCTGGATTCTTATTGTGCGCCCTTATTAGGGCAAGCGGTGCCAGTAGCAGAATATGTCAC-CTCAACAACCTCGATCCACCCCTGCCATTACATGGGTAACATATCCATGGAGGTTTCGATGTATACTCGAGGATACAGTTCGTC-CATCACGCCCGCTACATACCCATTACATCAGCATAGAAATATGCTCCAACAGCAACTCCGATGCCTCATTGCCAGCCCCGGA

E-value 0.0, per. Identity 98.28% descriptor: CP025934.1 *Cutibacterium acnes* DSM 1897 chromosome, complete genome

Strain 27

F sequence:

NNCNTTGTCTNTCCGTGTGNNATACNTCNGTTTTNAGCGNTACAGNANGGTGCCNNGCCNGTTCATTGCTAGCACANCTGGATCA-GATCNGGATNNCANTATCGTNGNTNNTTTAAAGTCNCATATCCTGTTACCNAGTCATGCCAGNTCTAGNCNNGNCNGCTGTGCA-ANCNGGGTTTTGTGGGANGNTNNCNCNACCTTATGNTTGGCAGACGCCACTCCNTATGGACACTGGCATNCCTANGTAGCAG-GATGTGTNCATGAGATATACCNGTNCNCCNCGNCTGTGTGACAGGNTTCTCNCNNNTGGAAGGCAATNCTNGCATGAGAN-CNNANTAGGAACGGCANACGAGCANGCATGGACCNANTGANGCCGTCACTATNCCCCNANTGANCCANCAGCTTANAAATG-TACATAAGTAAGATGTTTCTCGCAATGAAAGACGATATGTCACGAGCTTCTGGTGTGCTGTTTCCCGACATGGAAGTGTAGTTT-GAATCAATTTTGAAGTGGAGACGCCAAGTTGACCCCTGGTGTGCAACGATGCTTCTTGTGCTGCAGTTGCGAGCAATTGTTCC-CGATGAAAGGAACCCACAAATGAAGGTTAAGTTCTTAGCAGCGCCGCTG

E-value 2e-112, per. Identity 99.56% descriptor: AP022845.1 *Cutibacterium acnes* SZ2 DNA, complete genome

R sequence:

GTANTTGGCGNNTTCTTTATGCGGGAAAATTGCTCGGAACTGCAAGCAAGGAAGCATCGTTGCNACCAGGGGGTCAACTTTGG-CGTCCTCAGTTCAAAATTGATTCAAACCTAACAGTTCNATGTCCGGAAACAGCACCAGGAAGCTCGTGACATATCGTCTTTCATT-GCGAGAAACATCTTACTTATGTACATTTCTAAGCTATAGCGTCTACCCTTGTGACAGCCAGGACGATGGGTGTCACATCTCCTTTC-TAGTCAACCTAAGAGAGGAGGAAATGCCGCGATATATGTTCCACCCTGTCATCACGAAGGCCACCACAATCTATCCCAGAACAG-CCGGCACTTCACTCACGATGCCCCGATGCTGGATTCTTATTGTGCGCCCTTATTAGGGCAAGCGGTGCCAGTAGCAGAATATGT-CACCTCAACAACCTCGATCCACCCCTGCCATTACATGGGTAACATATCCATGGAGGTTTCGATGTATACTCGAGGATACAGTTCGTC-CATCACGCCCGCTACATACCCATTACATCAGCATAGAAATATGCTCCAACAGCAACTCCGATGCCTCATTGCCAGCCGGANNN-NANTANTCNNTTTTGGNNTGTNCTTTGNNAAANNCGGNNGTNTG

E-value 0.0, per. Identity 98.29% descriptor: CP025934.1 *Cutibacterium acnes* DSM 1897 chromosome, complete genome

Strain 32

F sequence:

NCCGCTGGCCTGNTTTTNCNCGNNTTGGTNTGCTGCAACTGCAAGCAAGGATCGTTTACACACCAGGGGGTCAACTTGG-GAGGACGCTNATACTNNATNGTATNTCTTACCCACCGTAATNCGNNTGCNCGANGATCNGAGCTGTTGACGCNNAANATTCTGCT-GCTGTCACTCGCTNGCTCTAATAAGTTNCNACAATAGGAATCCAGCATCGGGGCATGGTGGGTGAAGTACGGCTGTTCCGGGATA-GATTGTGGTGGCATTATGATGACAGGGCGGAACATATATCGCGGCATTTCTCCTTCTTAGGTTGACTGGAAAGGGGATATGA-CACCCATCGTCTGGGTCTGACAGGGGTAGACAATATAGCTTAGAAATGTGTATAAGTAAGATGTTTCTCGCAATGAAAGACGA-TATGTACAGAGTTTTCTGGTGTGTTTCCCGACACGGAACCGTTAGTTTGAATCAATTTTGAAGTGGAGACACCAAGTTGACCC-CCTGGTGTGAAACGATGCTTCTTGTGCTGCAGTTGCGAGCAATTGTTCCCGATGAAAG

E-value 0.0, per. Identity 97.54% descriptor: CP013693.1 *Cutibacterium acnes* strain A1-14 chromosome

R sequence:

GNINTTGTGGGTTTCCTTTTNTNCGGNACAAATTGCTCGCAACTGCAAGCAAGGATCGTTTACACACCAGGGGGTCAACTTGG-TGTGCTCAGTTCAAAATTGATTCAAACCTAACGGTTCGGTGTCCGGAAACAGCACCAGAAAACCTCGTGACATATCGTCTTTCATT-GCGAGAAACATCTTACTTATACACATTTCTAAGCTATATGTCTACCCCTGTCAGACCCAGGACGATGGGTGTCATATCCCCTTTC-CAGTCAACCTAAGAAGGGAGGAAATGCCGCGATATATGTTCCGCCCTGTCATCATGAATGCCACCACAATCTATCCCAGAACAG-CCGTACTTCAACCCACCTGCCCCGATGCTGGATTCTTATTGTGCGCCCTTATTAGAGCAAGCGGTGCCAGCAGCAGAATATTTAC-CTCAGCAACTCGATCCGCTCCTGCCATTACATGGGTAACATATCCATGGAGGTACGATGTATGCATCGAGGATGCAGTTCGTTAC-TATGCCCGCTACATACCCATTCCATCAGCATAGAAATATGCTCCAACAGCAGCTTCGATGCCTCATTGCCAGNCCGGANNNC

E-value 0.0, per. Identity 98.46% descriptor: CP013693.1 *Cutibacterium acnes* strain A1-14 chromosome

**Strain 40**

**F sequence:**

NTTTTGTGGGTTCTTTNTCGGGNACAATTTGCTCGNAACTGCAAGCAAGNAAGCATCGTTGCACACCAGGGGGTCAACTTGGCGTCCTCAGTTCAAAAATTGATTTAAACTAACAGTTCCATGTCGGGAAACAGCACCAGGAAGCTCGTGACATATCGTCTTTCATTGCGAGAAAACATCTTACTTATGTACATTTCTAAGCTATAGCGTCTACCCTTGTGACACCCAGGACGATGGATGTCACATCCCCTTCTAGTCAACCTAAGAGAGGAGGAAATGCCGCGATATATGTTCCACCCTGTCATCACGAAGGCCACCACAATCTATCCCAGAACAGCCGGCACCTCACTCACGATGCCCCGATGCTGGATTCCATTGTGCGCCCTTATTAGGGCAAGCGGTGCCAGTAGCAGAATATGTCACCTCAACAACCTCGATCCACCCTGCCATTACATGGGTAACATATCCATGGAGGTTTCGATGTATATTCGAGGATAACAGTCGTCATCACGCCCCCTACATACCCATTACATGGGCATAGAAATATGCTCCAACAGCA

**E-value** 0.0, **per. Identity** 98.03% **descriptor:** CP031442.1 *Cutibacterium acnes* strain KCOM 1315 chromosome, complete genome

**R sequence:**

GGATCTGTTGGGACTATTTCTATGCCCATGTAATGGGTATGTAGGCGGGCCGTGATGGACGACTGTATCCTCGAATATACATCGAACCTCCATGGATATGTTACCCATGTAATGGCAGGGGTGGATCGAGTTGTTGAGGTGACATATTCTGCTACTGGCACCCGCTTGCCCTAATAAAGGGCGACAATAGGAATCCAGCATCGGGGCATCGTGAGTGAGGTGCCGGCTGTTCTGGGATAGATTGTGGTGGCCTTCGTGATGACAGGGTGAACATATATCGCGGCATTTCTCTCTCTTAGGTTGACTAGAAAAGGGGATGTGACATCCATCGTCTGGGTCTGACAAGGTAGACGCTATAGCTTAGAAATGACATAAGTAAGATGTTTCTCGCAATGAAAGACGATATGTCACGAGCTTCTGGTGTGTTCCCGACATGGAATGTTAGTTAAATCAATTTGAACTGAGGACGCCAAGTTGACCCCTGGTGTGCAACGATGCTTCTTGCTGAGTTGCGAGCAATTTCCCGATGAAAGGAACCCACAAT

**E-value** 0.0, **per. Identity** 98.38% **descriptor:** CP031442.1 *Cutibacterium acnes* strain KCOM 1315 chromosome, complete genome

**Strain 41**

**F sequence:**

TNCCGACGGCCANCTGNTCANGNTGCTGGCATGGGTCCCCAGCTCGNNACTNGAACNTGGACTTTGTCTANCANGATATANGTAGGTAGCACCNATNGNGTATANNAACGCCCGANTNACAGTTNCCGGGAGCNCGCCATGCCNCGNATANNCTNCNGNGGNCNTCCNNGGCCNATATGTCATCATGCTGNGCAATNAGCATCGGGGCATCGTGAGTGAAGTGCCGGNTGTTCTGGGATAGATTGTGGTGGCCTTCGTGATGACAGGGTGAACATATATCGCGGCATTTCTCTCTCTTAGGTTGACTAGAAAAGGAGATGTGACACCCATCGTCTGGGTCTGACAAGGGTAGACGCTATAGCTTAGAAATGACATAAGTAAGATGTTTCTCGCAATGAAAGACGATATGTCACGAGCTTCTGGTGTGTTCCCGACATGGAATGTTAGTTTGAATCAATTTGAACTGAGGACGCCAAGTTGACCCCTGGTGTGCAACGATGCTTCTTGCTGAGTTGCGAGCAATTTCCCGATGAAAGGAACCCACAAT

**E-value** 0.0, **per. Identity** 99.72% **descriptor:** CP025934.1 *Cutibacterium acnes* DSM 1897 chromosome, complete genome

**R sequence:**

GNTTTTGTGGGTTCTTTNTCGGGNACAATTTGCTCGCAACTGCAAGCAAGAAGCATCGTTGCACACCAGGGGGTCAACGTTGGCGTCCTCAGTTCAAAAATTGATTTAAACTAACAGTTCCATGTCGGGAAACAGCACCAGGAAGCTCGTGACATATCGTCTTTCATTGCGAGAAAACATCTTACTTATGTACATTTCTAAGCTATAGCGTCTACCCTTGTGACACCCAGGACGATGGGTGTCACATCTCCTTCTAGTCAACCTAAGAGAGGAGGAAATGCCGCGATATATGTTCCACCCTGTCATCACGAAGGCCACCACAATCTATCCCAGAACAGCCGGCACTTCACTACGATGCCCCGATGCTGGATTCCATTGTGCGCCCTTATTAGGGCAAGCGGTGCCAGTAGCAGAATATGTCACCTCAACAACCTCGATCCACCCTGCCATTACATGGGTAACATATCCATGGAGGTTTCGATGTATACTCGAGGATAACAGTCGTCATCACGCCCCCTACATACCCATTACATCAGCATAGAAATATGCTCCAACAGCAA

**E-value** 0.0, **per. Identity** 99.11% **descriptor:** CP025934.1 *Cutibacterium acnes* DSM 1897 chromosome, complete genome

**Strain 49**

**F sequence:**

AANCTNTTGTGGGTTCTTTNTCGGGNACAATTTGCTCGCAACTGCAAGCAAGNAAGCATCGTTGCACACCAGGGGGTCAACCTTGGCGTCTCAGTTCAAAAATTGATTTAAACTAACAGTTCCATGTCGGGAAACAGCACCAGGAAGCTCGTGACATATCGTCTTTCATTGCGAGAAAACATCTTACTTATGTACATTTCTAAGCTATAGCGTCTACCCTTGTGACACCCAGGACGATGGGTGTCACATCCCTTTCTAGTCAACCTAAGAGAGGAGGAAATGCCGCGATATATGTTCCACCCTGTCATCACGAAGGCCACCACAATCTATCCCAGAACAGCCGGCACTTCACTCACGATGCCCCGATGCTGGATTCCATTGTGCGCCCTTATTAGGGCAAGCGGTGCCAGTAGCAGAATATGTCACCTCAACAACCTCGATCCACCCTGCCATTACATGGGTAACATATCCATGGAGGTTTCGATGTATACTCGAGGATACAGTCGTCCATCACGCCCCCTACATACCCATTACATCAGCATAGAAATATGCTCCAACAGCAA

**E-value** 0.0, **per. Identity** 99.10% **descriptor:** CP033718.1 *Cutibacterium acnes* strain FDAARGOS\_577 chromosome, complete genome

**R sequence:**

AAANTNTTGTGGGNTCCTTTNTNCGGGGACAATGTGCTCGCATCTTGNAAAGCAAGGAGCATCGTTGCACACCAGGGGGTCAACTTTGGCGTCTCAGTTCAAAAATTGATTTAAACTAACAGTTCCATGTCGGGAAACAGCACCAGGAAGCTCGTGACATATCGTCTTTCATTGCGAGAAAACATCTTACTTATGTACATTTCTAAGCTATAGCGTCTACCCTTGTGACACCCAGGACGATGGGTGTCACATCCCCTTCTAGTCAACCTAAGAGAGGAGGAAATGCCGCGATATATGTTCCACCCTGTCATCACGAAGGCCACCACAATCTATCCCAGAACAGCCGGCACTTCACTCACGATGCCCCGATGCTGGATTCCATTGTGCGCCCTTATTAGGGCAAGCGGTGCCAGTAGCAGAATATGTCACCTCAACAACCTCGATCCACCCTGCCATTACATGGGTAACATATCCATGGAGGTTTCGATGTATACTCGAGGATACAGTCGTCCATCACGCCCCCTACATACCCATTACATCAGCATAGAAATATGCTCCAACAGCAACTCCGATGCCTCATTGTCAGCCGGAGNNN

**E-value** 0.0, **per. Identity** 97.96% **descriptor:** CP033718.1 *Cutibacterium acnes* strain FDAARGOS\_577 chromosome, complete genome