

Table S1. Two genes related to the potential drug resistance of *A. muciniphila* PROBIO detected based on the CARD database.

| ORF_ID | Cut_off | Best_hit_bitscore | Best_hit_ARO | Best_identities | ARO | Drug class | Resistance mechanism | Percentage length of reference sequence |
|-----------------------|---------|-------------------|---------------------|-----------------|---------|---|-------------------------|---|
| Scaffolds_7_107624_39 | Strict | 761.1 | <i>adeF</i> | 41.27 | 3000777 | fluoroquinolone antibiotic; tetracycline antibiotic | antibiotic efflux | 99.72 |
| Scaffolds_25_1658_1 | Strict | 457.6 | <i>ANT(3'')-IIa</i> | 100 | 3004089 | aminoglycoside antibiotic | antibiotic inactivation | 70.59 |

Table S2. One gene related to the potential drug resistance of *A. muciniphila* PROBIO detected based on the ResFinder database.

| Resistance gene | Identity | Contig or depth | Position in contig | Phenotype | Accession |
|-----------------|----------|---------------------|--------------------|-----------------------------|-----------|
| <i>aadA15</i> | 96.20 | Scaffolds_25_1658_1 | 1..685 | spectinomycin; streptomycin | DQ393783 |

Table S3. Genome sequence characteristics of *A. muciniphila* PROBIO.

| Sequence ID | Circular | Sequence length | GC content | A content | T content | G content | C content | N content |
|-------------|----------|-----------------|------------|------------------|------------------|------------------|------------------|-----------|
| chr | Circular | 2,863,710 | 55.32 % | 642,274(22.43 %) | 637,142(22.25 %) | 788,279(27.53 %) | 796,015(27.80 %) | 0(0.00 %) |
| Total | ● | 2,863,710 | 55.32 % | 642,274(22.43 %) | 637,142(22.25 %) | 788,279(27.53 %) | 796,015(27.80 %) | 0(0.00 %) |

Table S4. A gene related to virulence factors of *A. muciniphila* PROBIO detected based on the VFD database.

| qseqid | sseqid | pident | length | e-value | bitscore | description |
|-------------|--------------|--------|--------|-----------|----------|---|
| Scaffolds_2 | VFG046465(g | | | | | (<i>tufA</i>) elongation factor Tu [EF-Tu (VF0460)] |
| _441681_74 | b YP_169203. | 73.1 | 394 | 1.80E-177 | 616.3 | [<i>Francisella tularensis</i> subsp. <i>tularensis</i> SCHU |
| | 1) | | | | | S4] |

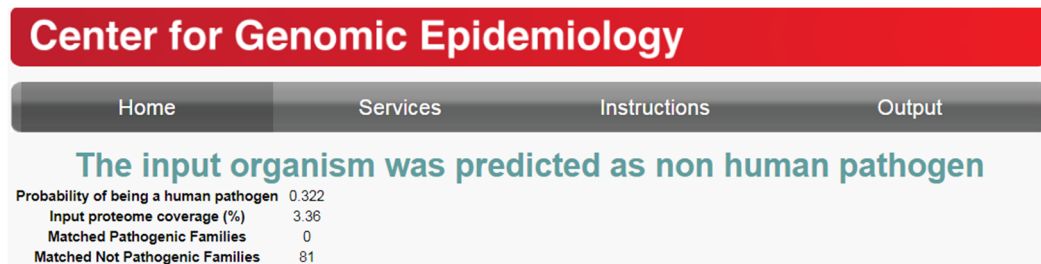


Figure S1. Prediction of the pathogenicity of *A. muciniphila* PROBIO.