Supplementary materials

![Box plot showing the abundance of A. muciniphila in normal and IBD patients](image)

**B**

| Bacteria abundance | Normal (Median) | UC (Median) |
|--------------------|----------------|-------------|
| *L. lactis*        | 0.008296, n=1000 | 0.0129***, n=480 |
| *L. mucosae*       | 0.00845, n=549 | 0.01256, n=43 |
| *B. adolescentis* | 0.4118, n=1000 | 0.3634*, n=473 |
| *B. breve*         | 2.106, n=1000 | 0.01718***, n=317 |
| *B. longum*        | 0.298, n=1000 | 0.1554***, n=658 |
| *S. salivarius*    | 0.054, n=1000 | 0.08861***, n=1000 |
| *F. prausnitzii*   | 2.458, n=1000 | 2.314, n=1000 |
| *A. muciniphila*   | 0.593, n=1000 | 0.04162***, n=420 |

**Supplementary Figure 1.** (A) The level of *A. muciniphila* in the stool of normal people (n=1000) and IBD patients (n=399) in GMrepo database. (B) Details of the abundance of *L. lactis*, *L. mucosae*, *B. adolescentis*, *B. breve*, *B. longum*, *S. salivarius*, *F. prausnitzii* and *A. muciniphila* in the stool of normal people and UC patients in GMrepo database including exact sample numbers, medians and values, the graph (in Figure 1) exactly matched with this table. *p <0.05, ***p <0.001* (Mann Whitney test). IBD, inflammatory bowel disease; UC, ulcerative colitis.
**Supplementary Table 1.** The clinical characteristics of UC patients

| Cohort    | Mean±SD                 |
|-----------|-------------------------|
|           | Low-Akk (n=6) | High-Akk (n=6) |
| Age       | 48±10.8      | 39.5±12.1     |
| Sex       |             |               |
| Male      | 2           | 3             |
| Female    | 4           | 3             |
| Height (m)| 1.7±0.1     | 1.6±0.1       |
| Body weight(kg) | 60.2±10.7 | 58.3±5.6     |
| BMI(kg/m²) | 21.7±2.4    | 21.8±1.9     |
| Smoking   |             |               |
| Yes       | 0           | 0             |
| No        | 6           | 6             |
| Drinking  |             |               |
| Yes       | 0           | 0             |
| No        | 6           | 6             |
| Activity  |             |               |
| Mild      | 3           | 3             |
| Moderate  | 3           | 2             |
| Severe    | 0           | 1             |