

**Supplementary Table 1. Effect size of *A. muciniphila* abundance and gene richness on clinical parameters.**

| <b>Outcome</b> | <b>Effect size (%)</b> |                                    |                    |
|----------------|------------------------|------------------------------------|--------------------|
|                | <b>Akk<br/>(LO/HI)</b> | <b>Gene richness<br/>(LGC/HGC)</b> | <b>Interaction</b> |
| % Android fat  | 4.1%                   | 0%                                 | 15.7%              |
| % Gynoid fat   | 3.5%                   | 0%                                 | 14.8%              |
| Glucose        | 15%                    | 0%                                 | 12.5%              |
| Triglycerides  | 2.8%                   | 4.2%                               | 7.5%               |

Effect size is the adjusted  $R^2$  from linear regression models.