

Table S1: 16S V4 sequence depth data

| Treatment group (individual animal identifier) | Sequence counts | Treatment group (individual animal identifier) | Sequence counts |
|--|-----------------|--|-------------------------|
| ST (Sensitive/untreated) | | | RUT (Resistant/treated) |
| RF OV1 | 195478 | RF OV11 | 253884 |
| RF OV2 | 190157 | RF OV12 | 200802 |
| RF OV3 | 221776 | RF OV13 | 219199 |
| RF OV4 | 171003 | RF OV14 | 203791 |
| RF OV5 | 262980 | RF OV15 | 289827 |
| SUT (Sensitive/untreated) | | | RT (Resistant/treated) |
| RF OV6 | 180285 | RF OV16 | 118718 |
| RF OV7 | 256887 | RF OV17 | 124906 |
| RF OV8 | 218121 | RF OV18 | 177617 |
| RF OV9 | 228227 | RF OV19 | 258684 |
| RF OV10 | 258311 | RF OV20 | 154489 |
| ST (Sensitive/untreated) | | | RUT (Resistant/treated) |
| TIMS OV1 | 6287 | TIMS OV11 | 13467 |
| TIMS OV2 | 7314 | TIMS OV12 | 8150 |
| TIMS OV3 | 40442 | TIMS OV13 | 31301 |
| TIMS OV4 | 8343 | TIMS OV14 | 28376 |
| TIMS OV5 | 28166 | TIMS OV15 | 4812 |
| SUT (Sensitive/untreated) | | | RT (Resistant/treated) |
| TIMS OV6 | 7017 | TIMS OV16 | 47474 |
| TIMS OV7 | 29756 | TIMS OV17 | 15889 |
| TIMS OV8 | 22214 | TIMS OV18 | 7954 |
| TIMS OV9 | 8853 | TIMS OV19 | 9599 |
| TIMS OV10 | 1900 | TIMS OV20 | 16708 |

ST, sensitive isolate+monepantel administration; SUT, sensitive isolate untreated; RT, resistant isolate+monepantel administration; RUT, resistant isolate untreated; OV, ovine; RF, rectal faeces; TIMS, Terminal ileum mucosal scrapings