### Supplementary file 1: The relative abundance of major taxa in three canine breeds

| Classification | Percentage of Total Sequences | SEM | p-Value | No. of pigs With detectable taxon |
|----------------|-------------------------------|-----|---------|----------------------------------|
|                | Collective data<sup>1</sup>   |     |         |                                  |
|                | Control                       |     |         |                                  |
|                | DON                           |     |         |                                  |
|                | ZEN                           |     |         |                                  |
| **Firmicutes** |                               |     |         |                                  |
|                | Lactobacillus                 | 4.0 | 1.1<sup>b</sup> | 6.5<sup>a</sup> | 3.8<sup>a</sup> | 0.13 | **0.005** | 14 |
|                | Faecalibacterium              | 4.4 | 5.5     | 3.6     | 4.2     | 0.08 | 0.25     | 14 |
|                | Dialister                     | 2.3 | 2.3     | 1.2     | 3.4     | 0.57 | 0.67     | 14 |
|                | Megaeschaera                  | 2.0 | 0.9<sup>b</sup> | 3.0<sup>a</sup> | 1.8<sup>a</sup> | 0.18 | **0.05** | 14 |
|                | Lachnospira                   | 1.9 | 2.5     | 2.3     | 1.0     | 0.17 | 0.11     | 14 |
|                | Phascolarctobacterium         | 1.7 | 1.8     | 1.6     | 1.7     | 0.09 | 0.91     | 14 |
|                | Ruminococcus                  | 1.3 | 1.7     | 1.1     | 1.3     | 0.09 | 0.14     | 14 |
|                | Bulleidia                     | 1.2 | 1.4     | 0.8     | 1.3     | 0.09 | 0.38     | 14 |
|                | Blautia                       | 1.1 | 1.2     | 0.7     | 1.3     | 2.2  | 0.34     | 14 |
|                | Anaerovibrio                  | 0.9 | 0.9     | 1.2     | 0.7     | 0.12 | 0.15     | 14 |
|                | Coprococcus                   | 0.9 | 1.1     | 0.8     | 0.8     | 0.04 | 0.15     | 14 |
|                | Oscillospira                  | 0.9 | 0.8     | 1.1     | 0.8     | 0.09 | 0.44     | 14 |
|                | Catenibacterium               | 0.7 | 1.0     | 0.3     | 0.9     | 0.38 | 0.60     | 13 |
|                | p-75-a5                       | 0.6 | 0.7     | 0.4     | 0.8     | 0.28 | 0.85     | 12 |
|                | Clostridium                   | 0.5 | 0.5     | 0.2     | 0.9     | 0.14 | 0.11     | 14 |
|                | Dorea                         | 0.5 | 0.4     | 0.5     | 0.6     | 0.08 | 0.46     | 14 |
|                | Megamonas                     | 0.4 | 0.0     | 0.0     | 1.1     | 0.61 | 0.36     | 6  |
|                | Shuttleworthia                | 0.3 | 0.8     | 0.2     | 0.1     | 0.40 | 0.44     | 14 |
|                | Acidaminococcus              | 0.3 | 0.3     | 0.3     | 0.3     | 0.43 | 0.84     | 14 |
|                | Butyrivibrio                  | 0.3 | 0.1     | 0.1     | 0.6     | 0.19 | 0.18     | 14 |
|                | Selenomonas                   | 0.2 | 0.0     | 0.5     | 0.1     | 0.39 | 0.38     | 14 |
|                | Roseburia                     | 0.2 | 0.2     | 0.3     | 0.1     | 0.17 | 0.21     | 14 |
|                | Mitsukella                    | 0.2 | 0.2     | 0.2     | 0.2     | 0.19 | 0.89     | 14 |
|                | Streptococcus                 | 0.2 | 0.3     | 0.0     | 0.2     | 0.26 | 0.40     | 14 |
|                | Peptococcus                   | 0.2 | 0.2<sup>a</sup> | 0.0<sup>b</sup> | 0.1<sup>b</sup> | 0.11 | **0.02** | 14 |
|                | Pelosinus                     | 0.2 | 0.0<sup>b</sup> | 0.2<sup>a</sup> | 0.1<sup>a</sup> | 0.06 | **0.005** | 14 |
| **Bacteroidetes** |                               |     |         |         |         |     |         |     |
|                | Prevotella                    | 21.4| 25.4    | 22.2    | 17.5    | 0.09 | 0.39     | 14 |
|                | Bacteroides                   | 4.1 | 2.0<sup>b</sup> | 4.6<sup>a</sup> | 5.3<sup>a</sup> | 0.06 | **0.001** | 14 |
|                | CF231                         | 0.6 | 0.6     | 0.7     | 0.5     | 0.20 | 0.67     | 14 |
|                | Parabacteroides               | 0.4 | 0.3     | 0.6     | 0.3     | 0.22 | 0.44     | 14 |
|                | Paludibacter                  | 0.3 | 0.2<sup>b</sup> | 0.4<sup>a</sup> | 0.4<sup>a</sup> | 0.07 | **0.001** | 14 |
| **Proteobacteria** |                               |     |         |         |         |     |         |     |
|                | Campylobacter                 | 1.4 | 1.5<sup>a</sup> | 0.0<sup>b</sup> | 2.8<sup>a</sup> | 0.44 | **0.01** | 14 |
|                | Succinivibrio                 | 0.6 | 0.6     | 0.6     | 0.6     | 0.20 | 0.81     | 14 |
| Family            | Value1 | Value2 | Value3 | Value4 | Value5 | Value6 | Value7 | Value8 | Value9 | Value10 | Value11 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Actinobacillus    | 0.2    | 0.1    | 0.0    | 0.4    | 0.38   | 0.006  | 12     |
| Desulfovibrio     | 0.2    | 0.3    | 0.2    | 0.2    | 0.19   | 0.95   | 14     |
| Dechloromonas     | 0.1    | 0.0    | 0.2    | 0.1    | 0.06   | 0.001  | 14     |
| Spirochaetes      | 0.9    | 0.7    | 0.8    | 1.3    | 0.35   | 0.74   | 14     |
| Treponema         | 0.9    | 0.7    | 0.8    | 1.3    | 0.36   | 0.79   | 14     |
| Cyanobacteria     | 0.9    | 0.7    | 1.0    | 0.9    | 0.08   | 0.39   | 14     |
| Actinobacteria    | 0.8    | 0.8    | 0.4    | 1.3    | 0.29   | 0.19   | 14     |
| Collinsella       | 0.2    | 0.2    | 0.1    | 0.3    | 0.18   | 0.24   | 14     |
| Turicibacter      | 0.2    | 0.3    | 0.0    | 0.2    | 0.29   | 0.001  | 13     |
| TM7               | 0.4    | 0.4    | 0.4    | 0.3    | 0.26   | 0.58   | 14     |
| Tenericutes       | 0.3    | 0.3    | 0.4    | 0.3    | 0.18   | 0.71   | 14     |
| Verrucomicrobia   | 0.2    | 0.1    | 0.2    | 0.2    | 0.05   | 0.001  | 14     |
| Akkermansia       | 0.1    | 0.0    | 0.1    | 0.1    | 0.04   | 0.001  | 14     |
| Fusobacteria      | 0.1    | 0.1    | 0.1    | 0.1    | 0.07   | 0.41   | 14     |

1 Sequences obtained from all cecum samples
2 Values represent means.

a, b Within a row, means with a different subscript were different (p < 0.05).