Beta-diversity

For beta-diversity the entire data set was run through the import&QC pipeline in R following import into the script for beta-diversity. The data has multiple parameters, all of which are interesting to test for differences in beta-diversity over time (day) and between groups (treatment, feed, material). The table below attempt to summarise the questions of interest.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Material** | **Day** | **Feed** | **Treatment** | **N=** | **Note:** | **Question(s):** |
| Feces | 0 | AIN-93G | Control | 12 | Before dosing; acclimatised to feeds | How is the diversity before PFOS treatment? |
| PFOS | 12 |
| Altromin | Control | 12 |
| PFOS | 12 |
| 8 | AIN-93G | Control | 12 | Day after ended dosing with PFOS. Before euthanisation of half the rats; Other half enters 14 day wash-out. Also collected urine and tongue-vein blood. Dissection: liver, blood, brain, cecum and ileum. | How is the diversity at peak PFOS conc./directly after 7 days treatment compared to controls for each feed?  Correlation between systemic + feces PFOS concentrations and species? (Expecting slightly increased alpha-diversity in PFOS treated animals. Which?) |
| PFOS | 12 |
| Altromin | Control | 12 |
| PFOS | 12 |
| 12 | AIN-93G | Control | 6 | Wash-out day 5 | Wash-out monitoring of composition and diversity. |
| PFOS | 6 |
| Altromin | Control | 6 |
| PFOS | 6 |
| 16 | AIN-93G | Control | 6 | Wash-out day 9. Also collected urine and blood. | Wash-out monitoring of composition and diversity. |
| PFOS | 6 |
| Altromin | Control | 6 |
| PFOS | 6 |
| 20 | AIN-93G | Control | 6 | Feces collected before carmin treatment for transit time. Test of acute effect of carmin on microbiota to day 21. | Wash-out monitoring of composition and diversity. Reference point for small test of carmin treatment – compare to day 21. |
| PFOS | 6 |
| Altromin | Control | 6 |
| PFOS | 6 |
| 21 | AIN-93G | Control | 6 | Last day of wash-out. All animals euthanised after this. Also collected urine.  Dissection: liver, blood, brain, cecum and ileum. | Wash-out monitoring. What is the timeline of alpha-diversity per group from day 0 to 21 (OBS: less animals per groups from day 12)? Correlation between systemic + feces PFOS concentrations and species? |
| PFOS | 6 |
| Altromin | Control | 6 |
| PFOS | 6 |

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| --- | --- | --- | --- | --- | --- | --- |
| **Material** | **Day** | **Feed** | **Treatment** | **N =** | **Note:** | **Result** |
| Cecum | 8 | AIN-93G | Control | 5 |  |  |
| PFOS | 6 |  |  |
| Altromin | Control | 6 |  |  |
| PFOS | 6 |  |  |
| 21 | AIN-93G | Control | 6 |  |  |
| PFOS | 6 |  |  |
| Altromin | Control | 6 |  |  |
| PFOS | 6 |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Material** | **Day** | **Feed** | **Treatment** | **N =** | **Note:** | **Result** |
| Ileum | 8 | AIN-93G | Control | 6 |  |  |
| PFOS | 6 |  |  |
| Altromin | Control | 6 |  |  |
| PFOS | 6 |  |  |
| 21 | AIN-93G | Control | 6 |  |  |
| PFOS | 6 |  |  |
| Altromin | Control | 6 |  |  |
| PFOS | 6 |  |  |